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April 29, 2005

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Corporation
Catawba Nuclear Station, Unit 1
Docket Number 50-413
Request for Relief Number 05-CN-002
Request for Relief to Allow Use of Alternate Requirements for Snubber Inspection and Testing

Pursuant to 10 CFR 50.55a(a)(3)(i), Catawba is submitting the attached relief request for NRC review and approval. In lieu of the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, this relief request seeks continued use of Catawba Selected Licensee Commitment (SLC) 16.9-13, "Snubbers," as the governing set of requirements for snubber inspection and testing.

Catawba is requesting NRC approval of this relief request by October 31, 2005. Approval of this relief request will allow Catawba to continue to utilize the existing SLC requirements governing snubber inspection and testing during refueling outages for the third inspection and testing interval. The third interval will begin on June 29, 2005 for Catawba Unit 1.

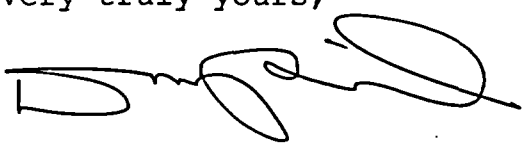
There are no regulatory commitments contained in this letter or its attachment.

If you have any questions concerning this material, please call L.J. Rudy at (803) 831-3084.

A047

Catawba Nuclear Station 20th Anniversary 1985-2005

Very truly yours,



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LJR/s

Attachment

xc (with attachment):

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Duke Energy Corporation
Catawba Nuclear Station Unit 1
Third 10-Year Interval Request for Relief Number 05-CN-002

Pursuant to 10 CFR 50.55a(a)(3)(i), Duke Energy Corporation requests to use an alternative to the Section XI requirements of the ASME Boiler and Pressure Vessel Code. Accordingly, information is being submitted in support of our determination that the alternative provides an acceptable level of quality and safety.

Reference Code: ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through 2000 Addenda

Notes:
1) Catawba Unit 1 was previously granted relief to use this alternative during the second interval per Relief Request Number 95-05, dated August 23, 1995, approved January 11, 1996, TAC Number M93355.

2) Catawba Unit 1's third interval will begin on June 29, 2005.

I. System/Component for which Relief is Requested:

All Unit 1 safety-related ASME Section XI Code Class 1, 2, and 3 snubbers.

II. Code Requirement from which Relief is Requested:

Relief is requested from the requirements of Article IWF-5000, Subarticle IWF-5300. An alternative will be provided from the following requirements.

(a) Inservice examinations shall be performed in accordance with ASME/ANSI OM, Part 4, using the VT-3 visual examination method described in IWA-2213.

(b) Inservice tests shall be performed in accordance with ASME/ANSI OM, Part 4.

(c) Integral and non-integral attachments for snubbers, including lugs, bolting, pins, and clamps, shall be examined in accordance with the requirements of this Subsection.

III. Basis for Relief:

ASME Section XI, 1998 Edition through 2000 Addenda, Subarticle IWF-5300 (a) and (b) specifies that snubber examinations and tests be performed in accordance with the first addenda to ASME/ANSI OM, Part 4 (published in 1998). Subarticle IWF-5300 (c) requires examinations per the IWF Subarticle.

Snubber examinations and tests are currently performed under the Updated Final Safety Analysis Report, Chapter 16, Selected Licensee Commitments (SLC) 16.9-13, "Snubbers" (see Attachment A).

The current inspection program as defined by this SLC provides for an acceptable level of quality and safety equal to or greater than that of the proposed OM Standard, as described below for key areas.

Failure Mode Grouping

The OM Standard provides for Failure Mode Grouping of snubbers which fail visual examination, meaning only those snubbers identified as being in that group would require shortened inspection intervals. Under the SLC program, all snubbers in the population would be placed in a shortened inspection interval. On this basis, the SLC program is more conservative in corrective action than the OM Standard requirements.

The functional test plan required by the OM Standard also includes Failure Mode Groups. The use of Failure Mode Grouping is required even for a single failure, and in some cases allows for the failed snubber to be reclassified as acceptable with no further testing. This is non-conservative for the large snubber population which exists at Catawba (over 900 snubbers for Unit 1) as compared to the existing SLC program. The SLC program at Catawba requires supplemental testing for all failures until the desired confidence level is assured, with no allowances to reclassify failed snubbers.

Visual Examinations

IWF-5000 requires that examinations be performed using the VT-3 visual examination method described in IWA-2213. IWA-2213 reads as follows:

"VT-3 examinations are conducted to determine the general mechanical and structural condition of components and their supports by verifying parameters such as clearances, settings, and physical displacements; and to

detect discontinuities and imperfections, such as loss of integrity at bolted or welded connections, loose or missing parts, debris, corrosion, wear, or erosion. VT-3 includes examinations for conditions that could affect operability or functional adequacy of snubbers and constant load and spring supports."

The Catawba SLC states that:

"Visual inspections shall verify that: (1) the snubber has no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are functional, and (3) fasteners for the attachment of the snubber to the component and to the snubber anchorage are functional."

Catawba Procedure MP/0/A/7650/085, "Visual Inspection of Snubbers," is used to implement the SLC inspections and includes requirements that the following items be checked: loose or missing locking devices, missing spacers, paint or corrosion issues, connecting devices, visible damage, welds, loose jam nuts on extensions, leakage, orientation, fluid level.

The differences between the requirements of IWA-2213 and the SLC are primarily semantic in nature. The intent and scope of the two documents are essentially equal, although the Code wording is more detailed than the SLC in listing specific items to be included. However, these items are intuitive to meeting the SLC requirements and are more specifically addressed in the implementing procedure, which closely parallels the Code list. SLC examinations are performed using task qualified personnel who are specifically trained for the SLC examinations and who are familiar with snubber and component support operation and maintenance.

The SLC makes no distinction between integral and non-integral attachments. All are included in the examination to verify overall structural integrity. The request is not intended to exclude attachments from examination requirements, but only to use the SLC as the governing document for all examinations. With the SLC and Code requirements being comparable, it is preferable to utilize the SLC in order to maintain consistent programmatic and procedural control between Unit 1 and Unit 2. The same procedures and personnel are currently utilized for examinations for both Catawba units. Using different governing documents for the two units would require administrative changes resulting in new

procedures and additional training. Even though the actual physical scope and examination results would not be affected, there would be an added burden to implement the change and administer two programs. In addition, the programmatic difference between the two units would result in a number of potential human error traps when work is alternated between the two units.

Optional Use of ISTD

10 CFR 50.55a(b)(3)(v) states, in part, that licensees may use Subsection ISTD, in place of the requirements for snubbers in ASME Code Section XI, IWF-5200 (a) and (b) and IWF-5300 (a) and (b). This option is not considered to be the best course of action for Catawba's third interval, based upon the fact that there are some aspects of the ISTD requirements that are non-conservative when compared to the SLC program. There are also some ambiguities in ISTD that could potentially lead to non-conservative decision making, especially with regard to infrequently encountered situations. It is maintained that the SLC requirements provide for a more comprehensive and conservative program than would result from incorporating the current edition of ISTD. Some of the differences between the SLC and ISTD requirements are as listed below:

- The SLC requires a 10% additional sample for each failure under the 10% Plan. ISTD-5300 requires only a 5% additional sample. The larger supplemental sample size increases the statistical reliability of the population.
- ISTD allows for isolated snubber failures to be accepted with no additional tests required, for both the 10% and the 37 Plans. The definition and use of the term "isolated failure" is ambiguous and subject to interpretation. Incorrect application of this allowance could invalidate the statistical basis of the testing and render the sample testing useless as a tool for determining the reliability of the snubber population. This is a human error trap for all but the most knowledgeable program owner, potentially resulting in a false level of confidence in the population reliability.
- ISTD states that all unacceptable snubbers should be assigned to a Failure Mode Group (except for isolated or unexplained), no matter the quantity of failures involved. This can lead to "force fitting" a failure into a category prematurely, resulting in supplemental testing being restricted to a non-conservative subgroup

of the overall snubber population. The SLC does not have specific allowances for Failure Mode Grouping. This results in a more conservative additional sample from the overall population, while the SLC remedial actions address common cause evaluation and generic applicability issues.

- There are inconsistencies in the ISTD wording for the 10% and 37 Plans with regard to Failure Mode Grouping that could be a human error trap for the implementing parties, and are potential areas for interpretation issues with regard to literal compliance decisions.

In general, Failure Mode Grouping is non-conservative for plants with large snubber populations, such as Catawba. The sample plans assume a homogenous population. Failure Mode Grouping makes it more critical for the remaining population to be homogenous in order for the statistical assumptions to remain valid. By encouraging Failure Mode Grouping, ISTD can lead to decision making that is non-conservative in the long term.

IV. Alternate Examination or Testing:

In lieu of implementing the requirements of Subarticle IWF-5300 (a), (b), and (c), it is proposed that the inservice examination and testing be performed under SLC 16.9-13.

V. Justification for the Granting of Relief:

The SLC lists visual examination requirements for snubbers that are compatible with Section XI VT-3 requirements. The SLC also incorporates the reduced visual examination frequency table as provided in NRC Generic Letter 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions." The SLC results in a significant reduction in unnecessary radiological exposure to plant personnel, a savings in company resources, and compliance with visual examination requirements, while maintaining the same confidence level in snubber operability as that provided by following Section XI requirements.

When this relief request is approved, the SLC 16.9-13 Bases will be revised to reference the NRC approval and to identify that any revision to the snubber visual inspection and functional test requirements of the SLC shall consider the basis for the granted alternative from

the ASME Code requirements and any resulting requirement for NRC review and approval.

VI. Implementation Schedule:

Snubber visual examination and testing will be scheduled and performed in accordance with SLC 16.9-13 during the third inspection interval.

Attachment A

SLC 16.9-13, "Snubbers"

16.9 AUXILIARY SYSTEMS

16.9-13 Snubbers

COMMITMENT

---NOTE---
Snubbers installed on non-safety related 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 effect on any safety related system.

All snubbers shall be OPERABLE.

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 snubber(s) discovered inoperable by walkdown or observation.	A.1 Enter the applicable Conditions and Required Actions for any affected system(s) and component(s). AND A.2 Perform engineering evaluation per the Functional Test Failure Analysis.	Immediately Immediately
B. One or more snubber(s) inoperable for testing or maintenance. AND Prior system OPERABILITY evaluation not performed.	B.1 Enter the applicable Conditions and Required Actions for any affected system(s) and component(s). AND	Immediately

(continued)

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 ----------NOTE---------- Only applicable if one or more snubber(s) fail to meet test acceptance criteria. ---------- Perform engineering evaluation per the Functional Test Failure Analysis.	72 hours AND Prior to restoring affected system(s) and component(s) to OPERABLE status
C. One or more snubber(s) inoperable for testing or maintenance. AND Prior system OPERABILITY evaluation performed.	C.1 ----------NOTE---------- Only applicable if one or more snubber(s) fail to meet test acceptance criteria. ---------- Perform engineering evaluation per the Functional Test Failure Analysis to determine impact on prior system OPERABILITY evaluation. AND C.2 ----------NOTE---------- Only applicable if prior system OPERABILITY evaluation is invalidated. ---------- Enter the applicable Conditions and Required Actions for any affected system(s) and component(s).	Immediately Immediately

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 shall have been performed within 12 months before being installed in the unit.

3. As used in this SLC, "type of snubber" shall mean snubbers of the same design and manufacturer, irrespective of capacity.

	TEST	FREQUENCY
TR 16.9-13-1	----------NOTE---------- Snubbers are categorized as inaccessible or accessible during reactor operation and may be inspected independently according to the schedule determined by Table 16.9-13-1. The first inspection interval using Table 16.9-13-1 shall be based upon the previous inspection interval as established by the requirements in effect before Technical Specification Amendment 88 (Unit 1) and 82 (Unit 2). ---------- Perform a visual inspection for each category of snubber.	In accordance with Table 16.9-13-1
TR 16.9-13-2	----------NOTE---------- In case of a severe dynamic event, mechanical snubbers in the system which experienced the event shall be inspected during the refueling outage to assure that they have freedom of movement and are not frozen up. ---------- Perform an inspection, during shutdown, 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 16.9-13-3	----------NOTE---------- The large-bore steam generator hydraulic snubbers shall be treated as a separate population for functional test purposes and shall be functionally tested under Sample Plan 1. --- Perform, during shutdown, snubber functional testing on a representative sample of each type of snubber in accordance with one of the following three Sample 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 16.9-13-1, or 3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.	18 months
TR 16.9-13-4	----------NOTE---------- Service life records shall be documented and the documentation retained for the duration of the unit operating license. --- Verify that the service life of all snubbers has not been exceeded or will not be exceeded prior to the next scheduled surveillance inspection.	18 months

Table 16.9-13-1

Snubber Visual Inspection Interval (page 1 of 2)

POPULATION OR CATEGORY (NOTES 1 AND 2)	NUMBER OF UNACCEPTABLE SNUBBERS		
	COLUMN A EXTEND INTERVAL (NOTES 3 AND 6)	COLUMN B REPEAT INTERVAL (NOTES 4 AND 6)	COLUMN C REDUCE INTERVAL (NOTES 5 AND 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
$\geq$ 1000	29	56	109

Note 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. These 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.

Note 2: Interpolation between population or category sizes 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 determined by interpolation.

Note 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.

Note 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 interval shall be the same as the previous interval.

Note 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

Table 16.9-13-1

Snubber Visual Inspection Interval (page 2 of 2)

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.

Note 6: The provisions of SLC 16.2.6 are applicable for all inspection intervals up to and including 48 months.

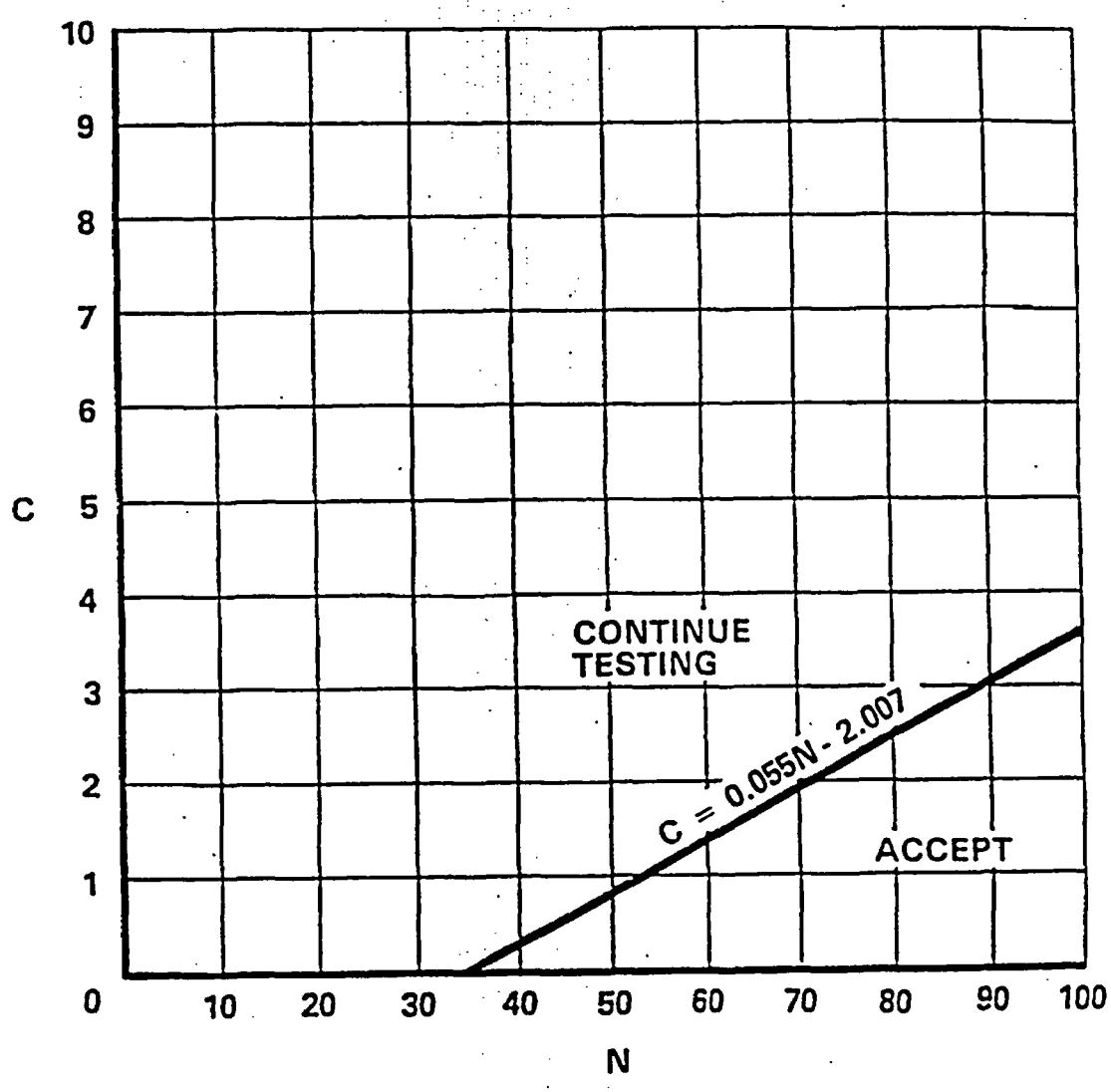

Figure 16.9-13-1

Sample Plan 2 for Snubber Functional Test

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.

The snubber requirements of SLC 16.9-13 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.

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 SLC would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

REMEDIAL ACTIONS

When one or more installed snubbers are discovered to be inoperable by means of routine walk down or observation, the applicable REMEDIAL ACTIONS for any affected system(s) and component(s) must be entered immediately and an engineering evaluation per the Functional Test Failure Analysis must be performed. The purpose of the evaluation is to determine the cause of failure and to address transportability issues.

For snubbers that are removed for testing or maintenance activities, it is possible that a prior evaluation of the system may verify the continued operability of the system with the snubber(s) removed. In these cases, it is not necessary to enter into the system REMEDIAL ACTIONS as long as the conditions of the prior evaluation are met.

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 the prescribed time frame, as described in the Functional Test Failure Analysis.

BASES (continued)

Visual Inspections

The visual inspection frequency is based upon maintaining a constant level of snubber protection during an earthquake or severe transient. 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. In order to establish the inspection frequency for each type of snubber, it was assumed that the frequency of snubber failures and initiating events are constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failure during an assumed initiating event. 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. The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers.

Visual inspections shall verify that: (1) the snubber has no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are functional, and (3) fasteners for the attachment of the snubber to the component and to the snubber anchorage are functional. 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: (i) 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 (ii) the affected snubber is functionally tested in the as-found condition and determined OPERABLE. All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable and may be reclassified as acceptable for determining the next inspection interval provided that criterion (i) and (ii) above are met. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the REMEDIAL ACTION requirements shall be met.

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 chemical and volume control system shall be inspected to determine if there has been a severe dynamic event. In the case of a severe dynamic event,

BASES (continued)

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, or (2) evaluation of in-place snubber piston setting, or (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 TESTING REQUIREMENT 16.9-13-1 are independent of the requirements of this item.

Functional Testing

At least once per 18 months during shutdown, a representative sample of snubbers of each type shall be tested using one of the following Sample Plans. The large-bore steam generator hydraulic snubbers shall be treated as a separate type (population) for functional test purposes. A 10% random sample shall be tested at least once per 18 months during refueling with continued testing based on a failure evaluation. The Sample Plan shall be selected prior to the test period and cannot be changed during the test period. The NRC shall be notified in writing of the Sample Plan selected for each snubber type prior to the test period or the Sample Plan used in the prior test period shall be implemented:

1) At least 10% of all snubbers shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria, an additional 10% of all 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 all snubbers shall be functionally tested in accordance with Figure 16.9-13-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements. The cumulative number of snubbers tested is denoted by "N". At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 16.9-13-1. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or all the snubbers of that type have been tested; or

3) An initial representative sample of 55 snubbers shall be functionally tested. For each snubber type 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

BASES (continued)

"C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this Sample Plan shall be plotted using an "Accept" line which follows the equation N = 55(1 + C/2). Each snubber point should be plotted as soon as the snubber is tested. If the point plotted falls on or below the "Accept" line, testing may be terminated. If the point plotted falls above the "Accept" line, testing must continue until the point falls in the "Accept" region or all the snubbers of that type 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 provided all snubbers tested with the failed equipment during the day of equipment failure are retested. The representative sample selected for the functional test Sample Plans shall be randomly selected from all snubbers and reviewed before beginning the testing. The review shall ensure, as far as practicable, that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers. Snubbers placed in the same location 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 test 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 16.9-13-1 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 inspection program for individual snubbers may be granted by the Commission if a justifiable basis for exemption is presented and, if applicable, snubber life testing was performed to qualify the snubber for the applicable design conditions. Snubbers so exempted shall be listed in the list of individual snubbers indicating the extent of the exemptions.

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, the system Required Action is not applicable since the failed snubber component has no current required function; however, the engineering evaluation per the Functional Test Failure Analysis is still required to determine the failure cause and address transportability issues. 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 Required Actions are to be entered immediately.

BASES (continued)

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) For mechanical snubbers, 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 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 lock up 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 functionally tested. This TESTING REQUIREMENT shall be independent of the requirements stated in TESTING REQUIREMENT 16.9-13-3 for snubbers not meeting the functional test acceptance criteria.

BASES (continued)

All snubbers that fail to meet the functional test criteria must be evaluated to determine the cause, and the potential for applicability of the failure mode to other snubbers. Likewise, an evaluation is required to determine if the attached components have been adversely affected by the functional failure of the snubber. It is noted that the evaluation is only required for snubbers that are inoperable due to a failure of the snubber itself to meet the functional requirements. A snubber that is inoperable due solely to being disconnected from the supported component does not necessitate a component or system evaluation, provided that the snubber itself meets the requirements of the functional test criteria. In this case, the only action required is that the snubber be completely restored and the cause of the disconnection determined and evaluated for generic implications.

Service Life

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 snubbers, 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.

If a service lifetime limit is associated (established) with any snubber (or critical part) based on manufacturer's information, qualification tests, or historical service results, then the service life shall be monitored to ensure that the service life is not exceeded between surveillance inspections. Established snubber service life shall be extended or shortened based on monitored test results and failure history. The replacements (snubbers or critical parts) shall be documented and the documentation shall be retained. Records of the service lives of all hydraulic and mechanical snubbers, including the date at which the service life commences, and associated installation and maintenance records shall be retained for the duration of the unit operating license.

REFERENCES

1. Letter from W.R. McCollum, Jr. to NRC, Request for Relief 95-05, Snubber Inspection Interval for Unit 1, August 23, 1995.

2. Letter from W.R. McCollum, Jr. to NRC, Request for Relief 96-01, Snubber Inspection Interval for Unit 2, February 12, 1996.

3. Letter from NRC to W.R. McCollum, Request for Relief 95-05, January 11, 1996.

REFERENCES (continued)

4. Letter from NRC to W.R. McCollum, Request for Relief 96-01, May 16, 1996.

5. Letter from NRC to Gary R. Peterson, Duke, Issuance of Improved Technical Specifications Amendments for Catawba, September 30, 1998.

6. Letter from M.S. Tuckman to NRC, Licensing Position Regarding Snubbers, May 20, 1999.

7. Letter from NRC to G.R. Peterson, Licensing Position Regarding Snubbers, July 7, 1999.