

50-413/414

PRIORITY Rush

DISPOSITION OF THE ORIGINAL DOCUMENT WILL BE TO THE TRANSMITTAL SIGNATURE UNLESS RECIPIENT IS OTHERWISE IDENTIFIED BELOW

- 1) 02294 CNS CHEMISTRY HOT SIDE CN03CH
- 2) 02310 CNS CHEMISTRY HI-RI CN03CH
- 3) 02467 ELECT. LICENSING LIBRARY EC050
- 4) 02691 J H KNUTI CN04MD
- 5) 02717 CNS WORK WINDOW MGR WCC CN02OP
- 6) 02721 K J CALDWELL CN03CE
- 7) 02834 R E KIMRAY CT01A
- 8) 02885 CNS SHIFT WORK MGR CN02OP
- 9) 02904 CNS SAFETY ASSUR MGR CN01SA
- 10) 03200 Y G ANAGNOSTOPOULOS CN03CE
- 11) 03216 CNS INNAGE MANAGER CN03WC
- 12) 03498 J A KAMMER SYS CN03SE
- 13) 03679 J L YON CT01A
- 14) 03759 U S NUCLEAR REG WASH, DC
- 15) 03796 NUS INFO SVC, CLEARWATER, FL

**Duke Power Company  
DOCUMENT TRANSMITTAL FORM**

**REFERENCE**

CATAWBA NUCLEAR STATION  
SELECTED LICENSEE COMMITMENTS  
MANUAL

Page 3 of 6

Date: 05/17/01

Document Transmittal #: DUK011370032

QA CONDITION  Yes  No

OTHER ACKNOWLEDGEMENT REQUIRED  Yes

IF QA OR OTHER ACKNOWLEDGEMENT REQUIRED, PLEASE ACKNOWLEDGE RECEIPT BY RETURNING THIS FORM TO:

Duke Power Company  
4800 Concord Road  
Document Management  
CN04DM  
York, South Carolina 29745

Rec'd By \_\_\_\_\_

Date \_\_\_\_\_

DOCUMENT NO	QA COND	REV #/ DATE	DISTR CODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL
CHAPTER 16.0	NA	---- 04/30/01	CADM-03	V1	V1	V1	V1	V1	V1	V1	V1	V1	V1	V1	V1	V1	V10	V1	94
CHAPTER 16.6-2	NA	---- 04/30/01																	
CHAPTER 16.9-13	NA	---- 04/30/01																	

REMARKS: PLEASE REFER TO ATTACHED MEMO FOR FILING INSTRUCTIONS.

G R PETERSON  
VICE PRESIDENT  
CATAWBA NUCLEAR SITE

BY:  
T K PASOUR CN01RC TKP/TER

A001

EB



**Duke Power**  
Catawba Nuclear Station  
4800 Concord Road  
York, SC 29745  
(803) 831-3000

May 14, 2001

RE: Catawba Nuclear Station  
Selected Licensee Commitments Manual  
Revision Date 04/30/01

Attached are revisions to the Catawba Nuclear Station Selected Licensee Commitments Manual.  
Please remove and replace the following pages:

**REMOVE**

**INSERT**

**LIST OF EFFECTIVE PAGES**

Pages 1, 2, & 5

Pages 1, 2, & 5

**TAB 16.0**

Chapter 16.0, page 1 of 4,  
dated 11/30/00

Chapter 16.0, page 1 of 4  
dated 04/30/01

**TAB 16.6**

Chapter 16.6-2, pages 1 & 2  
dated 01/16/99

Deletion Page  
(no page number)

**TAB 16.9**

Chapter 16.9-13, page 1 of 11  
dated 09/25/00

Chapter 16.9-13, page 1 of 12  
dated 04/30/01

Chapter 16.9-13, pages 2 - 5 of 11  
dated 04/22/99

Chapter 16.9-13, pages 2 - 5 of 12  
dated 04/30/01

Chapter 16.9-13, pages 6 - 8 of 11  
dated 09/25/00

Chapter 16.9-13, pages 6 - 8 of 12  
dated 04/30/01

Chapter 16.9-13, pages 9 - 11 of 11  
dated 04/22/99

Chapter 16.9-13, pages 9 - 12 of 12  
dated 04/30/01

If you have any questions concerning the contents of this package update, contact Toni Pasour at (803) 831-3566.

Gary D. Gilbert  
Regulatory Compliance Manager

**CATAWBA NUCLEAR STATION  
SELECTED LICENSEE COMMITMENTS MANUAL**

**List of Effective Pages**

Tab 16.0

16.0 Page 1 of 4	04/30/01
16.0 Page 2 of 4	11/30/00
16.0 Page 3 of 4	11/30/00
16.0 Page 4 of 4	11/30/00

Tab 16.1

16.1 Page 1 of 1	01/17/00
------------------	----------

Tab 16.2

16.2 Page 1 of 2	01/16/99
16.2 Page 2 of 2	01/16/99

Tab 16.3

16.3 Page 1 of 4	01/16/99
16.3 Page 2 of 4	01/16/99
16.3 Page 3 of 4	01/16/99
16.3 Page 4 of 4	01/16/99

Tab 16.4

Tab 16.5

16.5-1 Page 1 of 4	03/09/00
16.5-1 Page 2 of 4	03/09/00
16.5-1 Page 3 of 4	03/09/00
16.5-1 Page 4 of 4	03/09/00
16.5-2 Page 1 of 3	04/15/99
16.5-2 Page 2 of 3	04/15/99
16.5-2 Page 3 of 3	04/15/99
16.5-3 Page 1 of 4	01/16/99
16.5-3 Page 2 of 4	01/16/99
16.5-3 Page 3 of 4	01/16/99
16.5-3 Page 4 of 4	01/16/99
16.5-4 Page 1 of 1	01/16/99
16.5-5 Page 1 of 2	01/16/99
16.5-5 Page 2 of 2	01/16/99
16.5-6 Page 1 of 2	01/17/00
16.5-6 Page 2 of 2	01/17/00
16.5-7 Page 1 of 1	01/16/99

**CATAWBA NUCLEAR STATION  
SELECTED LICENSEE COMMITMENTS MANUAL**

**List of Effective Pages**

Tab 16.6

16.6-1 Page 1 of 1	01/16/99
16.6-2 Page 1 of 2	Deleted
16.6-2 Page 2 of 2	Deleted
16.6-3 Page 1 of 2	01/16/99
16.6-3 Page 2 of 2	01/16/99
16.6-4 Page 1 of 2	01/16/99
16.6-4 Page 2 of 2	01/16/99
16.6-5 Page 1 of 2	09/11/00
16.6-5 Page 2 of 2	09/11/00

Tab 16.7

16.7-1 Page 1 of 2	05/04/98
16.7-1 Page 2 of 2	05/04/98
16.7-2 Page 1 of 4	01/16/99
16.7-2 Page 2 of 4	01/16/99
16.7-2 Page 3 of 4	01/16/99
16.7-2 Page 4 of 4	01/16/99
16.7-3 Page 1 of 5	03/13/01
16.7-3 Page 2 of 5	03/13/01
16.7-3 Page 3 of 5	03/13/01
16.7-3 Page 4 of 5	03/13/01
16.7-3 Page 5 of 5	03/13/01
16.7-4 Page 1 of 2	09/20/99
16.7-4 Page 2 of 2	09/20/99
16.7-5 Page 1 of 2	06/10/99
16.7-5 Page 2 of 2	05/04/98
16.7-6 Page 1 of 2	01/16/99
16.7-6 Page 2 of 2	01/16/99
16.7-7 Page 1 of 2	05/05/99
16.7-7 Page 2 of 2	01/16/99
16.7-8 Page 1 of 2	01/16/99
16.7-8 Page 2 of 2	05/05/99
16.7-9 Page 1 of 4	09/20/99
16.7-9 Page 2 of 4	09/20/99
16.7-9 Page 3 of 4	09/20/99
16.7-9 Page 4 of 4	09/20/99
16.7-10 Page 1 of 7	11/30/00
16.7-10 Page 2 of 7	11/30/00
16.7-10 Page 3 of 7	11/30/00
16.7-10 Page 4 of 7	11/30/00
16.7-10 Page 5 of 7	11/30/00
16.7-10 Page 6 of 7	11/30/00
16.7-10 Page 7 of 7	11/30/00
16.7-11 Page 1 of 2	02/24/01
16.7-11 Page 2 of 2	02/24/01
16.7-12 Page 1 of 2	01/16/99
16.7-12 Page 2 of 2	01/16/99

**CATAWBA NUCLEAR STATION  
SELECTED LICENSEE COMMITMENTS MANUAL**

**List of Effective Pages**

Tab 16.9 (continued)

16.9-6 Page 2 of 11	03/11/99
16.9-6 Page 3 of 11	07/26/99
16.9-6 Page 4 of 11	07/26/99
16.9-6 Page 5 of 11	03/11/99
16.9-6 Page 6 of 11	07/26/99
16.9-6 Page 7 of 11	11/30/00
16.9-6 Page 8 of 11	03/11/99
16.9-6 Page 9 of 11	03/11/99
16.9-6 Page 10 of 11	05/05/99
16.9-6 Page 11 of 11	03/11/99
16.9-7 Page 1 of 2	03/09/00
16.9-7 Page 2 of 2	03/09/00
16.9-8 Page 1 of 2	10/16/00
16.9-8 Page 2 of 2	10/16/00
16.9-9 Page 1 of 2	03/09/00
16.9-9 Page 2 of 2	03/09/00
16.9-10 Page 1 of 2	10/16/00
16.9-10 Page 2 of 2	10/16/00
16.9-11 Page 1 of 3	01/16/99
16.9-11 Page 2 of 3	01/16/99
16.9-11 Page 3 of 3	01/16/99
16.9-12 Page 1 of 3	01/16/99
16.9-12 Page 2 of 3	01/16/99
16.9-12 Page 3 of 3	05/05/99
16.9-13 Page 1 of 12	04/30/01
16.9-13 Page 2 of 12	04/30/01
16.9-13 Page 3 of 12	04/30/01
16.9-13 Page 4 of 12	04/30/01
16.9-13 Page 5 of 12	04/30/01
16.9-13 Page 6 of 12	04/30/01
16.9-13 Page 7 of 12	04/30/01
16.9-13 Page 8 of 12	04/30/01
16.9-13 Page 9 of 12	04/30/01
16.9-13 Page 10 of 12	04/30/01
16.9-13 Page 11 of 12	04/30/01
16.9-13 Page 12 of 12	04/30/01
16.9-14 Page 1 of 2	01/16/99
16.9-14 Page 2 of 2	01/16/99
16.9-15 Page 1 of 1	01/16/99
16.9-16 Page 1 of 1	01/16/99
16.9-17 Page 1 of 1	01/16/99
16.9-18 Page 1 of 1	01/16/99
16.9-19 Page 1 of 2	01/16/99
16.9-19 Page 2 of 2	01/16/99
16.9-20 Page 1 of 1	01/16/99

**CATAWBA NUCLEAR STATION  
FINAL SAFETY ANALYSIS REPORT  
SELECTED LICENSEE COMMITMENTS**

**Table of Contents**

16.0	Selected Licensee Commitments
16.1	Introduction
16.2	Applicability
16.3	Definitions
16.4	Commitments Related to Reactor Components
16.5	Commitments Related to Reactor Coolant System
16.5-1	Reduced Inventory and Mid-Loop Operation with Irradiated Fuel in the Core
16.5-2	Safety Valves - Shutdown
16.5-3	Chemistry
16.5-4	Pressurizer
16.5-5	Structural Integrity
16.5-6	Reactor Coolant System Vents
16.5-7	Steam Generator Pressure/Temperature Limitation
16.6	Commitments Related to Engineered Safety Features
16.6-1	Containment Sump
16.6-2	Deleted
16.6-3	Inlet Door Position Monitoring System
16.6-4	Chlorine Detection Systems
16.6-5	Residual Heat Removal/Containment Spray Sump Pump Interlock
16.7	Commitments Related to Instrumentation
16.7-1	ATWS Mitigation System Actuation Circuitry (AMSAC)
16.7-2	Seismic Instrumentation
16.7-3	Meteorological Instrumentation
16.7-4	Loose-Part Detection System
16.7-5	Turbine Overspeed Protection
16.7-6	RN Discharge Instrumentation

**16.6      ENGINEERED SAFETY FEATURES**

**16.6-2      DELETED**

---

**16.9            AUXILIARY SYSTEMS**

**16.9-13        SNUBBERS**

---

**COMMITMENT:**

All snubbers shall be OPERABLE. The only snubbers excluded from the requirements are those installed on non safety-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.

**APPLICABILITY:**

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

**REMEDIAL ACTION:**

- a. With one or more snubbers discovered to be inoperable by walk down or observation, immediately enter the applicable ACTIONS for any affected system(s) and component(s) and perform an engineering evaluation per TESTING REQUIREMENT 16.9-13g.
- b. For snubbers that are to be rendered inoperable for testing or maintenance activities and a prior system operability evaluation has not been performed, immediately enter the system ACTIONS for any affected system(s) and component(s). If one or more snubbers fail to meet the test acceptance criteria, within 72 hours (and prior to restoring the affected system to operation) perform an engineering evaluation per TESTING REQUIREMENT 16.9-13g.
- c. For snubbers that are to be rendered inoperable for testing or maintenance activities and a prior system operability evaluation has been performed, entering the system ACTIONS is not required. If one or more of the tested snubbers fail to meet the test acceptance criteria, immediately perform an engineering evaluation per TESTING REQUIREMENT 16.9-13g to determine impact on the prior system operability evaluation. Should it be determined that the prior system evaluation is invalidated, the appropriate system ACTIONS shall be entered immediately.

**TESTING REQUIREMENTS:**

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



## **TESTING REQUIREMENTS (con't)**

### a. Inspection Types

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

### b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently according to the schedule determined by Table 16.9-13A. The visual inspection interval for each category of snubber shall be determined based upon the criteria provided in Table 16.9-13A and the first inspection interval determined using this criteria 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).

### c. Visual Inspection Acceptance Criteria

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 per Testing Requirement 16.9-13f. 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.

### d. 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

## **TESTING REQUIREMENTS (con't)**

feedwater pump turbine, and the letdown and charging portion of the CVCS System shall be inspected to determine if there has been a severe dynamic event. In the 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; 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 16.9-13b are independent of the requirements of this Testing Requirement.

### **e. Functional Tests**

During the first refueling shutdown and at least once per 18 months thereafter 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 of Testing Requirement 16.9-13f, 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 16.9-13A. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Testing Requirement 16.9-13f. 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 16.9-13A. 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

## **TESTING REQUIREMENTS (con't)**

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 "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.

### **f. 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;

## **TESTING REQUIREMENTS (con't)**

- 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.

### **g. 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 16.9-13e for snubbers not meeting the functional test acceptance criteria.

### **h. Functional Testing of Repaired and Replaced Snubbers**

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

## **TESTING REQUIREMENTS (con't)**

their most recent service, and the freedom-of-motion test must have been performed within 12 months before being installed in the unit.

### **i. Snubber Service Life Program**

The service performance of all snubbers shall be monitored. 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.
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.

## **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

## **BASES (cont'd)**

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

When one or more installed snubbers are discovered to be inoperable by means of routine walk down or observation, the applicable ACTIONS for any affected system(s) and component(s) must be entered immediately and an engineering evaluation per TESTING REQUIREMENT 16.9-13g 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 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 16.9-13g, "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, the system ACTION is not applicable since the failed snubber component has no current required function; however, the engineering evaluation per 16.9-13g 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 ACTIONS are to be entered immediately.

All snubbers that fail to meet the functional test criteria provided in 16.9-13f 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 16.9-13f. In this case, the only action

## **BASES (cont'd)**

required is that the snubber be completely restored and the cause of the disconnection determined and evaluated for generic implications.

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 Commitment 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 deletions of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

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.

To provide assurance of snubber functional reliability, one of three functional testing methods are used with the stated acceptance criteria:

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 using Figure 16.9-13A, or
3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.

## **BASES (cont'd)**

Figure 16.9-13A 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 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.



**TABLE 16.9-13A**

**SNUBBER VISUAL INSPECTION INTERVAL**

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
1000 or greater	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.

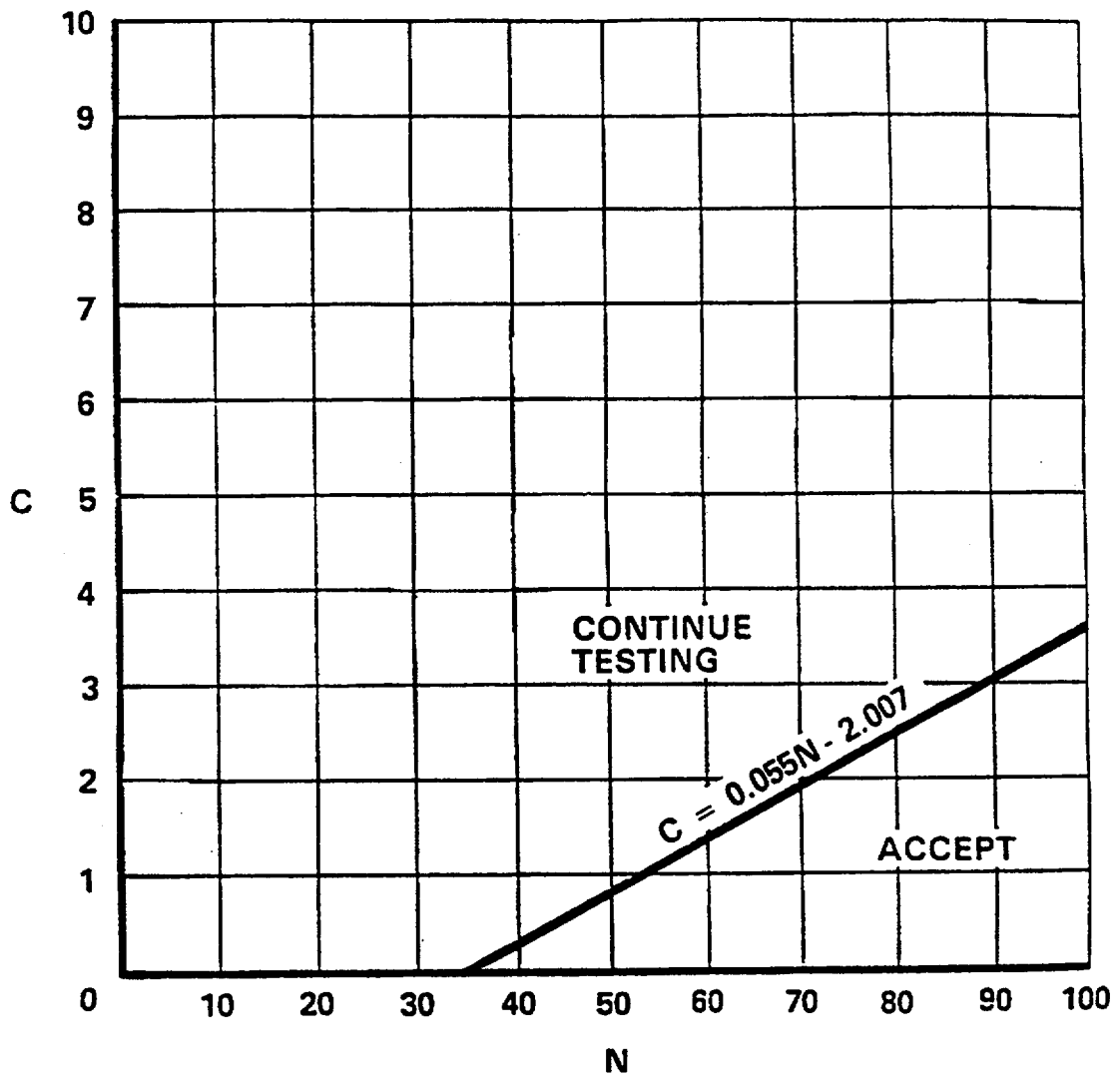
Note 2: Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

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.

**TABLE 16.9-13A (Continued)**

**SNUBBER VISUAL INSPECTION INTERVAL**

- 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 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 16.9-13A**  
**SAMPLE PLAN 2) FOR SNUBBER FUNCTIONAL TEST**