ENCLOSURE 1

SEQUOYAH NUCLEAR PLANT

PROPOSED TECHNICAL SPECIFICATION

3/4.7.9 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.9 All safety-related snubbers shall be OPERABLE. The snubbers are listed in Surveillance Instruction SNP SI-162.

APPLICABILITY: Modes 1, 2, 3, and 4. (Modes 5 and 6 for snubbers located on systems or partial systems required OPERABLE in these Modes.)

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 on the attached component or declare the attached system inoperable and follow the appropriate LIMITING CONDITION statement for that system.

If a snubber is determined to be inoperable while the reactor is in Mode 5 or 6, that snubber shall be made operable or replaced before entering the mode in which that system is required to be operable. If the inoperable snubber is attached to a system that is required OPERABLE during Mode 5 or Mode 6, the appropriate LIMITING CONDITION statement for that system shall be followed.

SURVEILLANCE REQUIREMENTS

4.7.9 Each safety-related snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5. These snubbers are listed in Surveillance Instruction SNP SI-162. The Commission shall be notified in writing of any changes in the listing of snubbers in SNP SI-162.

a. Inspection Groups

The snubbers may be categorized into two major groups based on whether the snubbers are accessible or inaccessible during reactor operation. These major groups may be further subdivided into subgroups based on design, environment, or other features which may be expected to affect the operability of the snubbers within the subgroup. Each subgroup or group may be inspected independently in accordance with 4.7.9.b through 4.7.9.i.

b. Visual Inspection Schedule and Lot Size

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 on safety-related systems. These snubbers are listed in plant Surveillance Instructions. If less than two (2) snubbers are found inoperable

b. Visual Inspection Schedule and Lot Size (Cont'd)

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:

Number of 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%

Snubber inspection groups or subgroups which are at the maximum inspection interval for two successive periods may have their visual inspection lot size reduced. The next required examination may be limited to a representative sample of 50% of the snubbers within the eligible groups or subgroups. For subsequent required examinations following examinations in which all snubbers examined were acceptable, the sample size may be further reduced in steps to 25%, 15%, and 10% of each eligible group or subgroup, provided that the total of all snubbers subject to examination must at all times equal at least 10% of the total number of snubbers or 35, whichever is less. If a snubber within the inspection group or subgroup is determined to be inoperable, the sample size shall revert to 100% for the current inspection and the subsequent interval shall be in accordance with the schedule table, unless the failure was either application induced or an isolated failure as covered by 4.7.9.d. The sample size shall remain at 100% until the provisions of this paragraph 4.7.9.b are again met.

c. Visual Inspection Inservice Sample Lot Composition

The initial selection of snubbers for examination in reduced sample lots shall be on a representative basis of the snubber installation in the group. Snubber selection for examination shall be alternated as practical such that all snubbers may be examined in turn. However, snubber installations subject to increased wear, deterioration, or damage may be examined more frequently and those installations in hazardous locations and

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

c. Visual Inspection Inservice Sample Lot Composition (Cont'd)

less subject to damage and wear may be examined less frequently than the average. Any sampling frequency other than normal shall be noted for the snubber in its listing in SNP SI-162.

d. Visual Inspection Performance and Evaluation

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, (2) bolts attaching the snubber to the foundation or supporting structure are secure, and (3) snubbers attached to sections of safety-related systems that have experienced unexpected potentially damaging transients since the last inspection period shall be evaluated for the possibility of concealed damage and functionally tested, if applicable, to confirm operability.

Snubbers which appear inoperable as a result of 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, if applicable, in the as-found condition and determined OPERABLE per Specification 4.7.9.f.

Also, snubbers which have been made inoperable as the result of unexpected transients, isolated damage or other such random events, when the provisions of 4.7.9.h and 4.7.9.i have been met and any other appropriate corrective action implemented, shall not be counted in determining the next visual inspection interval.

Snubbers shall not be subjected to prior maintenance specifically for the purpose of meeting examination requirements.

There may be conditions present which are undesirable but do not render the installed snubber inoperable. These, as well as any unacceptable snubbers, are subject to corrective action.

e. Functional Test Schedule, Lot Size, and Composition

At least once per 18 months during shutdown, a representative sample of 10% of the total or 35, whichever is less, of snubbers in use in the plant shall be functionally tested either in place or in a bench test.

e. Functional Test Schedule, Lot Size, and Composition (Cont'd)

The representative sample selected for functional testing shall include the various configurations, operating environments, and the range of size and capacity of snubbers within the groups or subgroups. The representative sample should be weighted to include more snubbers from severe service areas such as near heavy equipment. Unless a failure analysis as required by 4.7.9.g indicates otherwise, the sample shall be a composite based on the ratio of each group to the total number of snubbers installed in the plant. In groups or subgroups which are on a reduced visual inspection lot size snubbers selected for functional tests shall as far as practical not be the same ones subjected to the most recent visual inspection.

The security of fasteners for attachment of the snubbers to the component and to the snubber anchorage shall be verified on snubbers selected for functional tests.

f. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

1. Activation (restraining action) is achieved in both tension and compression.

2. Snubber bleed, or release where required, is present in both tension and compression.

3. The force required to initiate or maintain motion of the snubber is not great enough to overstress the attached piping or component during thermal movement, or to indicate impending failure of the snubber.

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

5. 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.

SURVEILLANCE REQUIREMENTS (Continued)

g. Functional Test Failure Analysis and Additional Test Lots

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The result of this analysis shall be used, if applicable, in selecting snubbers to be tested in the subsequent lot in an effort to determine the operability of other snubbers which may be subject to the same failure mode. Selection of snubbers for future testing may also be based on the failure analysis. For each snubber that does not meet the functional test acceptance criteria, an additional lot equal to one-half the original lot size shall be functionally tested. Testing shall continue until no additional inoperable snubbers are found within subsequent required lots or all snubbers of the original inspection group have been tested, or all suspect snubbers identified by the failure analysis have been tested, as applicable.

The discovery of loose or missing attachment fasteners will be evaluated to determine whether the cause may be localized or generic. The result of the evaluation will be used to select other suspect snubbers for verifying the attachment fasteners, as applicable.

Snubbers shall not be subjected to prior maintenance specifically for the purpose of meeting functional test requirements.

h. Functional Test Failure - Attached Component Analysis

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

i. Functional Testing of Repaired and Spare 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. These snubbers shall have met the acceptance criteria subsequent to their most recent service, and the functional test must have been performed within 12 months before being installed in the unit.

SURVEILLANCE REQUIREMENTS (Continued)

j. Exemption From Visual Inspection or Functional Tests

Permanent or other exemptions from visual inspections and/or functional testing for individual snubbers may be granted by the Commission if a justifiable basis for exemption is presented and if applicable snubber life destructive testing was performed to qualify snubber operability for the applicable design conditions at either the completion of their fabrication or at a subsequent date. Snubbers so exempted shall continue to be listed in the plant instruction SNP SI-162 with footnotes indicating the extent of the exemptions.

Pages 3/4 7-28 through 3/4 7-36a deleted.

3/4.7.8 AUXILIARY BUILDING GAS TREATMENT SYSTEM

The OPERABILITY of the auxiliary building gas treatment system ensures that radioactive materials leaking from the ECCS equipment following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the accident analyses. Cumulative operation of the system with the heaters on for 10 hours over a 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. ANSI N510-1975 will be used as a procedural guide for surveillance testing.

3/4.7.9 SNUBBERS

Snubbers are designed to prevent unrestrained pipe or component motion under dynamic loads as might occur during an earthquake or severe transient, while allowing normal thermal motion during startup and shutdown. The consequence of an inoperable snubber is an increase in the probability of structural damage to piping or components as a result of a seismic or other event initiating dynamic loads. It is therefore required that all snubbers required to protect the primary coolant system or any other safety system or component be operable during reactor operation.

Because the snubber protection is required only during relatively low probability events, a period of 72 hours is allowed to replace or restore the inoperable snubber(s) to operable status and perform an engineering evaluation on the supported component or declare the supported system inoperable and follow the appropriate limiting condition for operation statement for that system. The engineering evaluation is performed to determine whether the mode of failure of the snubber has adversely affected any safety-related component or system.

All safety-related snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate fluid level if applicable, and proper attachment of the snubber to piping and structures. The removal of insulation or the verification of torque values for threaded fasteners is not required for visual inspections.

The inspection frequency is based upon maintaining a constant level of snubber protection. Thus, the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during a required inspection determines the time interval for the next required inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25 percent) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

3/4.7.9 SNUBBERS (Cont'd)

When the cause of the rejection of a snubber in a visual inspection is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible and operability verified by inservice functional testing, if applicable, that snubber may be exempted from being counted as inoperable. Generically, susceptible snubbers are those which are of a specific make or model and have the same design features directly related to rejection of the snubber, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration. Inspection groups may be established based on design features, and installed conditions which may be expected to be generic. Each of these inspection groups are inspected and tested separately unless an engineering analysis indicates the inspection group is improperly constituted. All suspect snubbers are subject to inspection and testing regardless of inspection groupings.

To further increase the assurance of snubber reliability, functional tests shall be performed at least once each 18 months during shutdown, usually during the refueling outage. These tests will include stroking of the snubbers to verify proper movement, activation, and bleed or release. Ten percent or 35, whichever is less, represents an adequate sample for such tests. Observed failures on these samples will require an engineering analysis and testing of additional units. A thorough inspection of the snubber threaded attachments to the pipe or components and the anchorage will be made in conjunction with all required functional tests.

3/4.7.10 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, based on 10 CRF 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

ENCLOSURE 2

SEQUOYAH NUCLEAR PLANT

JUSTIFICATION FOR

PROPOSED TECHNICAL SPECIFICATION

TVA has maintained at Browns Ferry since 1974, in addition to the Technical Specification-required surveillance program for hydraulic snubbers, a surveillance program for mechanical snubbers. Plant instructions have also been adopted at Sequoyah for inservice inspection of mechanical snubbers. The program for mechanical snubbers includes both visual inspections and functional tests intended to verify operability in a manner similar to inspections and tests of hydraulic snubbers. These instructions contain the itemized listing of snubbers to be inspected. The maintenance instruction for mechanical snubbers will be combined into the surveillance instruction for hydraulic snubbers and the listing maintained in that instruction for all snubbers. The provisions of the technical specifications will apply to all safety related snubbers, but duplicating the listing of approximately 700 snubbers in the technical specifications will clutter the tech specs and not enhance the safe operation or safe shutdown of the plant.

Recognizing that there are differences in design within the broad family of hydraulic snubbers and within the broad family of mechanical snubbers, the technical specifications will permit the establishment of inspection groups based on design differences which may be expected to affect the operability of the snubbers within that group. IE Bulletin No. 81-01 also apparently recognizes these differences in that different inspection criteria and inspection schedules are specified based on the manufacturer (i.e., design) of the mechanical snubbers covered by that bulletin.

The draft Technical Specification also permits the establishment of inspection groups based on the application, considering such factors as environment or duty cycle imposed on the snubbers. This approach meets

the intent of the Standard Technical Specifications provisions for selecting 25% of the functional test representative sample from three specific categories relative to the application of the snubbers within the plant.

Provisions are also made to reduce the visual inspection lot size for snubber inspection groups which have had no inoperable snubbers for two successive inspections, with the stipulations that inspection lots be rotated so that all snubbers are inspected regularly, and that when a snubber within the group is determined to be inoperable, the lot size immediately reverts to 10% and the inspection interval changes in accordance with the inspection schedule table. This provision, while affording relief from inspecting snubbers which, by their performance, have indicated such frequent inspections are not necessary, is expected to detect deterioration in the performance of snubbers whose operability has previously been established.

Establishing snubber inspection groups based on design characteristic and upon application in the plant, and providing for reduced visual inspection lot size based on successful plant experience, we believe meets the intent of the Standard Technical Specification and incorporates the central provisions of the consensus standard being developed under the auspices of the American Society of Mechanical Engineer's Committee on Operations and Maintenance. The consensus standard on inservice inspection of snubbers has been accepted by the Subcommittee on Performance Testing and is scheduled for presentation to the Operations and Maintenance Committee in February 1981. It is designated currently as O & M-4.

The visual inspection criteria of the Standard Technical Specifications have generally been adopted. The requirement to functionally test all snubbers to verify their operability from a possible inoperable status has been modified to specify "if applicable." Loose attachment bolts or missing clevis pins should not, for this reason only, require the functional testing of the snubbers. Likewise, the successful completion of an as-found functional test, regardless of the apparent fluid level at the snubber, should be sufficient to establish the operability of the hydraulic snubber. Some common reservoirs for hydraulic snubbers have long hose or piping runs which may contain more than enough fluid to permit all connected snubbers to perform their required function even when the reservoir is empty. The option for as-found functional testing should always be available to verify snubber operability.

The functional testing lot size has been selected in accordance with the proposed consensus standard (O & M-4) to be 10% or 35, whichever is less. Any required resampling will be at one-half of the original lot size. This sample size will apply to a population of approximately 62 hydraulic snubbers and 594 mechanical snubbers for a total of snubbers 656 in unit 2 at Sequoyah. The sample composition within each inspection group which does not contain failed snubbers may be more heavily weighed for snubbers from severe duty locations, and the composition of sample lots resulting from failed snubbers will be based on an evaluation of the snubber failure mode.

Functional testing criteria have been consolidated for both hydraulic and mechanical snubbers. Verification of drag force to establish that it is not excessive relative to loads imposed on the attached components, or

that there is no indication of impending failure of the snubber is also included. The requirement to verify the attachment fasteners, both to the component and to the anchorage, is included for snubbers selected for functional testing. The discovery of missing or loose fasteners requires an evaluation and verification of additional fasteners, rather than additional functional tests be performed. This detailed inspection of the fasteners in conjunction with the functional tests is intended to supplement the visual inspections.

Functional testing is required of repaired or spare snubbers before their installation in the unit. This requirement in conjunction with the application of the failure analysis to the composition of lots required for additional testing from failed snubbers and to future testing lots, as applicable, meets the concern of the Standard Technical Specification requirement to repeat functional tests on both repaired and spare snubbers installed in locations where failed snubbers have been discovered. The selection of snubbers for additional testing based on an analysis of failed snubbers will require the testing of snubbers with a suspected common defect and will serve the same purpose as requiring additional exclusive testing based on two specific failure modes.

An engineering evaluation is to be performed relative to the effect on the attached component of any snubber which fails the functional test acceptance criteria.

Either temporary, permanent, partial, or complete exemptions from visual inspections or functional testing are to be justified to NRC. All safety-related snubbers are to remain on the listing in the Surveillance

Instruction regardless of the degree of exemption granted. The degree of exemption is to be indicated for each snubber.

The service life monitoring intent is covered by preventive maintenance programs and through the provisions of the surveillance program itself. The consequences of the visual inspection and functional test failures are significant enough to encourage action to ensure that the snubbers remain operable within the operating interval between inspections and tests. The specified periodic review of individual snubber maintenance and installation records requires unnecessary time that could be better spent on productive tasks. In addition to duplication of some existing programs, a large quantity of additional paperwork would be generated with a life-of-plant retention requirement. Records of major maintenance activities currently are to be retained for a five year minimum. In addition to the current seal replacement program for hydraulic snubbers, the monitoring of drag force on Pacific Scientific snubbers is expected to provide information in advance of a Pacific Scientific snubber wearing to the point of being inoperable.

The Bases as contained in the Standard Technical Specification have been incorporated into the draft Technical Specification as is consistent with the provisions of the draft Technical Specifications.