

ENCLOSURE 1

PROPOSED TECHNICAL SPECIFICATION REVISION

BROWNS FERRY NUCLEAR PLANT

UNITS 1, 2, AND 3

(TVA BFN TS 255)

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LIMITING CONDITIONS FOR OPERATION

3.6.H. Snubbers

During all modes of operation, all snubbers shall be OPERABLE except as noted in 3.6.H.1. All safety-related snubbers are listed in Surveillance Instructions BF SI 4.6.H-1 and BF SI 4.6.H-2.

1. With one or more snubber(s) INOPERABLE on a system that is required to be OPERABLE in the current plant condition, 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.

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

Each safety-related snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 3.6.H/4.6.H. These snubbers are listed in Surveillance Instructions BF SI 4.6.H-1 and BF SI 4.6.H-2.

1. 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 groups based on design, environment, or other features which may be expected to affect the operability of the snubbers within the group. Each group may be inspected independently in accordance with 4.6.H.2 through 4.6.H.9.

2. Visual Inspection, Schedule, and Lot Size

The first inservice visual inspection of snubbers not previously included in these technical specifications and whose visual inspection has

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.2. (Cont'd)

not been performed and documented previously, shall be performed within six months for accessible snubbers and before resuming power after the first refueling outage for inaccessible snubbers subsequent to being included in these specifications. The results of these inspections shall be used in the schedule table below to determine the subsequent visual inspection period. Snubbers previously included in these technical specifications shall continue on their previously earned inspection schedule without affect from adding snubbers not within their group.

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

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



4.6.H. Snubbers

3. 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 4.6.H.5.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H Snubbers

4.6.H.3 (Cont'd)

Also, snubbers which have been made INOPERABLE as the result of unexpected transients, isolated damage, or other such random events, when the provisions of 4.6.H.7 and 4.6.H.8 have been met and any other appropriate corrective action implemented, shall not be counted in determining the next visual inspection interval.

4. Functional Test Schedule, Lot Size, and Composition

During each refueling outage, a representative sample of 10% of the total of each group of safety-related snubbers in use in the plant shall be functionally tested either in place or in a bench test.

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. The representative sample should be weighed to include more snubbers from severe service areas such as near heavy equipment.

The stroke setting and 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.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

5. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

- a. Activation (restraining action) is achieved in both tension and compression within the specified range, except that inertia dependent, acceleration limiting mechanical snubbers may be tested to verify only that activation takes place in both directions of travel.
- b. Snubber bleed, or release where required, is present in both compression and tension within the specified range.
- c. For mechanical snubbers, 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.
- d. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.5 (Cont'd)

- e. 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.

6. 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 10 percent of the remainder of that group of snubbers shall be functionally tested. Testing shall continue until no additional inoperable snubbers are found within subsequent 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.



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.6 (Cont'd)

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency, all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

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.

7. Functional Test Failure - Attached Component Analysis

For the 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

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.7. (Cont'd)

snubber(s) were adversely affected by the inoperability of the snubber(s), and in order to ensure that the restrained component remains capable of meeting the designed service.

8. 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 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.

9. 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

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.9 (Cont'd)

completion of their fabrication or at a subsequent date. Snubbers so exempted shall continue to be listed in the plant instructions with footnotes indicating the extent of the exemptions.

10. Snubber Service Life Program

The service life of snubbers may be extended based on an evaluation of the records of functional tests, maintenance history, and environmental conditions to which the snubbers have been exposed.



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3.6.H/4.6.H 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 protection is required only during relatively low probability events, a period of 72 hours is allowed to replace or restore the inoperable snubber 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.

To verify snubber operability functional tests shall be performed during the refueling outages, at approximately 18-month intervals.

These tests will include stroking of the snubbers to verify proper movement, activation, and bleed or release. Ten percent represents an adequate sample for such tests. Observed failures on these samples will require an engineering analysis and testing of additional units. If the engineering analysis results in the determination that the failure of a snubber to activate or to stroke (i.e., seized components) is the result of manufacture or design deficiency, all snubbers subject to the same defect shall be functionally tested. 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. The stroke setting of the snubbers selected for functional testing also will be verified.

All safety-related snubbers are also 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 visual 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.

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 is 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.



C.	Coolant Leakage . . . . .	3.6/4.6-9
D.	Relief Valves . . . . .	3.6/4.6-10
E.	Jet Pumps . . . . .	3.6/4.6-11
F.	Recirculation Pump Operation . . . . .	3.6/4.6-12
G.	Structural Integrity . . . . .	3.6/4.6-13
H.	Snubbers . . . . .	3.6/4.6-15
3.7/4.7	Containment Systems . . . . .	3.7/4.7-1
A.	Primary Containment . . . . .	3.7/4.7-1
B.	Standby Gas Treatment System . . . . .	3.7/4.7-13
C.	Secondary Containment . . . . .	3.7/4.7-17
D.	Primary Containment Isolation Valves . . . . .	3.7/4.7-18
E.	Control Room Emergency Ventilation . . . . .	3.7/4.7-19
F.	Primary Containment Purge System . . . . .	3.7/4.7-21
G.	Containment Atmosphere Dilution System (CAD) . . . . .	3.7/4.7-22
H.	Containment Atmosphere Monitoring (CAM) System H <sub>2</sub> Analyzer . . . . .	3.7/4.7-24
3.8/4.8	Radioactive Materials . . . . .	3.8/4.8-1
A.	Liquid Effluents . . . . .	3.8/4.8-1
B.	Airborne Effluents . . . . .	3.8/4.8-3
C.	Radioactive Effluents - Dose . . . . .	3.8/4.8-6
D.	Mechanical Vacuum Pump . . . . .	3.8/4.8-6
E.	Miscellaneous Radioactive Materials Sources . . . . .	3.8/4.8-7
F.	Solid Radwaste . . . . .	3.8/4.8-9
3.9/4.9	Auxiliary Electrical System . . . . .	3.9/4.9-1
A.	Auxiliary Electrical Equipment . . . . .	3.9/4.9-1
B.	Operation with Inoperable Equipment . . . . .	3.9/4.9-10
C.	Operation in Cold Shutdown . . . . .	3.9/4.9-17
3.10/4.10	Core Alterations . . . . .	3.10/4.10-1
A.	Refueling Interlocks . . . . .	3.10/4.10-1

LIMITING CONDITIONS FOR OPERATION

3.6.H. Snubbers

During all modes of operation, all snubbers shall be OPERABLE except as noted in 3.6.H.1. All safety-related snubbers are listed in Surveillance Instructions BF SI 4.6.H-1 and BF SI 4.6.H-2.

1. With one or more snubber(s) INOPERABLE on a system that is required to be OPERABLE in the current plant condition, 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.

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

Each safety-related snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 3.6.H/4.6.H. These snubbers are listed in Surveillance Instructions BF SI 4.6.H-1 and BF SI 4.6.H-2.

1. 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 groups based on design, environment, or other features which may be expected to affect the operability of the snubbers within the group. Each group may be inspected independently in accordance with 4.6.H.2 through 4.6.H.9.

2. Visual Inspection, Schedule, and Lot Size

The first inservice visual inspection of snubbers not previously included in these technical specifications and whose visual inspection has

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.2. (Cont'd)

not been performed and documented previously, shall be performed within six months for accessible snubbers and before resuming power after the first refueling outage for inaccessible snubbers subsequent to being included in these specifications. The results of these inspections shall be used in the schedule table below to determine the subsequent visual inspection period. Snubbers previously included in these technical specifications shall continue on their previously earned inspection schedule without affect from adding snubbers not within their group.

<u>No. Inoperable Snubbers per Inspection Period</u>	<u>*Subsequent Visual Inspection Period</u>
0	18 months $\pm$ 25%
1	12 months $\pm$ 25%
2	6 months $\pm$ 25%
3,4	124 days $\pm$ 25%
5,6,7	62 days $\pm$ 25%
8 or more	31 days $\pm$ 25%

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

4.6.H. Snubbers

3. 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 4.6.H.5.



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LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H Snubbers

4.6.H.3 (Cont'd)

Also, snubbers which have been made INOPERABLE as the result of unexpected transients, isolated damage, or other such random events, when the provisions of 4.6.H.7 and 4.6.H.8 have been met and any other appropriate corrective action implemented, shall not be counted in determining the next visual inspection interval.

4. Functional Test Schedule, Lot Size, and Composition

During each refueling outage, a representative sample of 10% of the total of each group of safety-related snubbers in use in the plant shall be functionally tested either in place or in a bench test.

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. The representative sample should be weighed to include more snubbers from severe service areas such as near heavy equipment.

The stroke setting and 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.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

5. Functional Test Acceptance  
Criteria

The snubber functional  
test shall verify that:

- a. Activation (restraining action) is achieved in both tension and compression within the specified range, except that inertia dependent, acceleration limiting mechanical snubbers may be tested to verify only that activation takes place in both directions of travel.
- b. Snubber bleed, or release where required, is present in both compression and tension within the specified range.
- c. For mechanical snubbers, 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.
- d. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.5 (Cont'd)

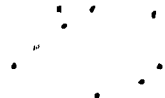
- e. Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

6. 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 10 percent of the remainder of that group of snubbers shall be functionally tested. Testing shall continue until no additional inoperable snubbers are found within subsequent 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.





LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.6 (Cont'd)

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency, all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

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.

7. Functional Test Failure - Attached Component Analysis

For the 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



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.7. (Cont'd)

snubber(s) were adversely affected by the inoperability of the snubber(s), and in order to ensure that the restrained component remains capable of meeting the designed service.

8. 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 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.

9. 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

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.9 (Cont'd)

completion of their fabrication or at a subsequent date. Snubbers so exempted shall continue to be listed in the plant instructions with footnotes indicating the extent of the exemptions.

10. Snubber Service Life Program

The service life of snubbers may be extended based on an evaluation of the records of functional tests, maintenance history, and environmental conditions to which the snubbers have been exposed.

3.6.H/4.6.H 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 protection is required only during relatively low probability events, a period of 72 hours is allowed to replace or restore the inoperable snubber 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.

To verify snubber operability functional tests shall be performed during the refueling outages, at approximately 18-month intervals.

These tests will include stroking of the snubbers to verify proper movement, activation, and bleed or release. Ten percent represents an adequate sample for such tests. Observed failures on these samples will require an engineering analysis and testing of additional units. If the engineering analysis results in the determination that the failure of a snubber to activate or to stroke (i.e.; seized components) is the result of manufacture or design deficiency, all snubbers subject to the same defect shall be functionally tested. 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. The stroke setting of the snubbers selected for functional testing also will be verified.

All safety-related snubbers are also 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 visual 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.

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 is 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.



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LIMITING CONDITIONS FOR OPERATION

3.6.H. Snubbers

During all modes of operation, all snubbers shall be OPERABLE except as noted in 3.6.H.1. All safety-related snubbers are listed in Surveillance Instructions BF SI 4.6.H-1 and BF SI 4.6.H-2.

1. With one or more snubber(s) INOPERABLE on a system that is required to be OPERABLE in the current plant condition, 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.

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

Each safety-related snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 3.6.H/4.6.H. These snubbers are listed in Surveillance Instructions BF SI 4.6.H-1 and BF SI 4.6.H-2.

1. 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 groups based on design, environment, or other features which may be expected to affect the operability of the snubbers within the group. Each group may be inspected independently in accordance with 4.6.H.2 through 4.6.H.9.

2. Visual Inspection, Schedule, and Lot Size

The first inservice visual inspection of snubbers not previously included in these technical specifications and whose visual inspection has

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LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.2. (Cont'd)

not been performed and documented previously, shall be performed within six months for accessible snubbers and before resuming power after the first refueling outage for inaccessible snubbers subsequent to being included in these specifications. The results of these inspections shall be used in the schedule table below to determine the subsequent visual inspection period. Snubbers previously included in these technical specifications shall continue on their previously earned inspection schedule without affect from adding snubbers not within their group.

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

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

4.6.H. Snubbers

3. 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 4.6.H.5.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H Snubbers

4.6.H.3 (Cont'd)

Also, snubbers which have been made INOPERABLE as the result of unexpected transients, isolated damage, or other such random events, when the provisions of 4.6.H.7 and 4.6.H.8 have been met and any other appropriate corrective action implemented, shall not be counted in determining the next visual inspection interval.

4. Functional Test Schedule, Lot Size, and Composition

During each refueling outage, a representative sample of 10% of the total of each group of safety-related snubbers in use in the plant shall be functionally tested either in place or in a bench test.

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. The representative sample should be weighed to include more snubbers from severe service areas such as near heavy equipment.

The stroke setting and 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.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

5. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

- a. Activation (restraining action) is achieved in both tension and compression within the specified range, except that inertia dependent, acceleration limiting mechanical snubbers may be tested to verify only that activation takes place in both directions of travel.
- b. Snubber bleed, or release where required, is present in both compression and tension within the specified range.
- c. For mechanical snubbers, 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.
- d. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.5 (Cont'd)

e. 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.

6. 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 10 percent of the remainder of that group of snubbers shall be functionally tested. Testing shall continue until no additional inoperable snubbers are found within subsequent 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.



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.6 (Cont'd)

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency, all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

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.

7. Functional Test Failure - Attached Component Analysis

For the 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



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.7. (Cont'd)

snubber(s) were adversely affected by the inoperability of the snubber(s), and in order to ensure that the restrained component remains capable of meeting the designed service.

8. 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 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.

9. 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

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.6.H. Snubbers

4.6.H.9 (Cont'd)

completion of their fabrication or at a subsequent date. Snubbers so exempted shall continue to be listed in the plant instructions with footnotes indicating the extent of the exemptions.

10. Snubber Service Life Program

The service life of snubbers may be extended based on an evaluation of the records of functional tests, maintenance history, and environmental conditions to which the snubbers have been exposed.

3.6.H/4.6.H 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 protection is required only during relatively low probability events, a period of 72 hours is allowed to replace or restore the inoperable snubber 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.

To verify snubber operability functional tests shall be performed during the refueling outages, at approximately 18-month intervals.

These tests will include stroking of the snubbers to verify proper movement, activation, and bleed or release. Ten percent represents an adequate sample for such tests. Observed failures on these samples will require an engineering analysis and testing of additional units. If the engineering analysis results in the determination that the failure of a snubber to activate or to stroke (i.e., seized components) is the result of manufacture or design deficiency, all snubbers subject to the same defect shall be functionally tested. 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. The stroke setting of the snubbers selected for functional testing also will be verified.

All safety-related snubbers are also 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 visual 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.

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 is 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.

## ENCLOSURE 2

### DESCRIPTION AND JUSTIFICATION BROWNS FERRY NUCLEAR PLANT (BFN) UNITS 1, 2 and 3

#### DESCRIPTION OF CHANGE

TVA proposes to delete the reference to seismic restraints and supports from sections 3.6.H and 4.6.H of the Units 1, 2 and 3 BFN Technical Specifications and appropriately revising the bases for these two sections.

#### REASON FOR THE CHANGE

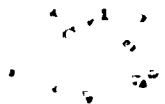
The current section 3.6.H is not consistent with industry practice or the GE Standard Technical Specification (NUREG 0123). The 72 hours currently allowed to replace and/or restore seismic restraints and supports or declare the attached system inoperable is unique to the BFN Technical Specifications. It is unnecessarily restrictive in that it precludes performance of an engineering evaluation to determine system operability. In addition, the surveillance requirements of section 4.6.H are applicable to snubbers only.

#### JUSTIFICATION FOR CHANGE

The deletion of seismic restraints and supports from section 3.6.H and 4.6.H will totally dedicate these sections to snubbers which is consistent with industry practice and GE Standard Technical Specification.

Pipe supports will not be specifically addressed in the technical specifications. This is consistent with GE Standard Technical Specifications. The technical specifications do define operability for systems. Technical specification definition 1.0.E states, "Implicit in the definition of operability shall be the assumptions that all necessary attendant instrumentation ... or other auxiliary equipment that are required for the system ... to perform its function(s) are also capable of performing their related support functions(s)." Pipe supports, through not explicitly mentioned, must be capable of performing their function, or the associated system operability requirements are not met.

If a support is found to be damaged, an engineering evaluation would have to be made to determine if the support is capable of performing its function. If the support is judged to be inoperable, the limiting condition for operation (LCO) requirements apply and generally include an allowed outage time for the system or subsystem. If the support/restraint cannot be repaired in the allowable LCO timeframe, then the prescribed action statement(s) must be complied with. A further engineering evaluation may also be performed during the LCO timeframe to justify operability of the affected system. If the engineering evaluation concludes the support has no affect on operability, the system would be operable and the LCO requirements would no longer apply. If an engineering evaluation is used to justify that a damaged or inoperable support does not render the associated system inoperable, the evaluation would have to be completed within the allowable outage time for that system. The allowable outage time for the associated system would be applicable from the point in time that it is recognized that the support is damaged.





JUSTIFICATION FOR THE CHANGE (cont'd)

It should be noted that the LCO for snubbers requires restoration and performance of an engineering evaluation on the components to which the inoperable snubbers are attached. The purpose of the engineering evaluation is to determine if the components to which the snubbers are attached were adversely affected by the failed snubber. The technical specification requires that the restoration and engineering evaluation be completed in 72 hours. These requirements do not apply to other supports. Snubbers are active components and can fail by locking up and imposing loads on the piping or attached components not considered in the design of the system. Supports are passive. Damage to structural components should only generally occur because of unusual events while failure of snubbers is recognized as a probable occurrence. Snubbers have surveillance requirements which confirm their operability:

Supports and restraints that are American Society of Mechanical Engineers (ASME) code Class 1, 2 or 3 components are inspected in accordance with Section XI of the ASME Boiler and Pressure Vessel Code as required by 10 CFR 50, Section 50.55a(g) in accordance with BFN Technical Specification 3.6.G. This proposed change does not modify the surveillance requirements under this section in any manner.

The deletion of the outage time (72 hours) granted in the technical specifications before entering into the affected system LCO is a conservative change. The use of an engineering evaluation to support system operability is consistent with industry practice.

ENCLOSURE 3

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 1, 2 and 3

DISCRIPTION OF AMENDMENT REQUEST

The proposed amendment would change the Technical Specifications, Sections 3.6.H and 4.6.H, of Browns Ferry Nuclear Plant (BFN) Units 1, 2, and 3, to pertain specifically to snubbers and to delete references to seismic restraints and supports from these sections.

NRC has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92(c). A proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequence of an accident previously evaluated, or (2) create the possibility of a new or different kind of accident from an accident previously evaluated, or (3) involve a significant reduction in a margin of safety.

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Deleting the seismic restraints and supports from these sections of the technical specifications does not invalidate nor change the calculations or design basis in which BFN was built and licensed. The current BFN technical specification 3.6.H does not provide any surveillance requirements in order to declare seismic restraints and supports operable. If a restraint or support is found to be damaged or there is a question about its ability to perform its function, the operations department will be informed and the operability of the affected system will be determined. If it is determined that the restraint or support will render a technical specification system inoperable, the appropriate system limiting conditions for operation (LCO) will apply.

2. This change does not create the possibility of a new or different kind of accident from an accident previously evaluated.

This proposed change does not add, eliminate, or modify any equipment or operational conditions. These changes still support and are bounded by the design calculations and the Final Safety Analysis Report by which BFN is currently licensed.

DESCRIPTION OF AMENDMENT REQUEST (cont'd)

3. This change does not involve a significant reduction in a margin of safety.

Although the proposed changes remove the explicit technical specification requirements for seismic restraints and supports, the overall plant margin of safety will be maintained in that restraints and supports will be considered for system operability. As stated above, any restraint or support found to be damaged or otherwise incapable of performing its intended function will be evaluated for operability. If a technical specification system or component is found to be adversely affected, thus rendering it inoperable, the appropriate LCO will be followed until the restraint or support is repaired or an engineering evaluation establishes operability without the need for the damaged support or restraint. If the restraint or support cannot be repaired or operability established via an engineering evaluation, the appropriate action identified in the technical specification LCO for the associated system will be followed.

Deletion of the restraints and supports from the technical specification also eliminates the requirements to repair them within 72 hours as currently stated. This does not reduce the margin of safety since an evaluation will be performed to determine operability of the system or the system LCO and action statements will be followed. The times allowed by the technical specification for a system to be inoperable have been evaluated by NRC, vendors, and the utility and found to be acceptable as issued and utilized throughout the industry. The definition of operability would require the operator to evaluate and determine system operability if a problem arose with a restraint or support since it would be considered a subsystem to the technical specification related piece of equipment.

Determination of Basis for Proposed No Significant Hazards

Since the application for amendment involves a proposed change that is encompassed by the criteria for which no significant hazards consideration exists, TVA has made a proposed determination that the application involves no significant hazards consideration.

