

ATTACHMENT 1

Dresden Unit 2, DPR-19
Proposed Technical Specification Changes

Revised Pages: 91b
91c*
99a
99b*

New Pages: 91c-1*
91e-2*; Table 3.6.1b

* Indicates a change in this page from that submitted on April 16, 1981.

Note: Pages 91d-1, 91d-2 and 91e-1 are not included here. They remain the same as submitted on April 16, 1981.

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3.6 LIMITING CONDITION FOR OPERATION

I. Snubbers (Shock Suppressors)

1. During all modes of operation except cold shutdown and refuel, all safety related snubbers listed in Table 3.6.1a and 3.6.1b shall be operable except as noted in Specification 3.6.I.2 through 3.6.I.4.
2. From and after the time a snubber is determined to be inoperable, continued reactor operation is permissible only during the succeeding 72 hours unless the snubber is sooner made operable or replaced.
3. If the requirements of 3.6.I.1 and 3.6.I.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown or refuel condition within 36 hours.
4. If a snubber is determined to be inoperable while the reactor is in the cold shutdown or refuel mode, the snubber shall be made operable or replaced prior to reactor startup.
5. Snubbers may be added to safety related systems without prior license amendment to Tables 3.6.1a and/or 3.6.1b provided that a revision to Tables 3.6.1a and/or 3.6.1b is included with the next license amendment request.

4.6 SURVEILLANCE REQUIREMENT

I. Snubbers (Shock Suppressors)

The following surveillance requirements apply to all safety related snubbers listed in Tables 3.6.1a and 3.6.1b.

1. Visual Inspection

An independent visual inspection shall be performed on the safety related hydraulic and mechanical snubbers contained in Tables 3.6.1a and 3.6.1b in accordance with the below schedule.

- a. All hydraulic snubbers whose seal material has been demonstrated by operating experience, lab testing or analysis to be compatible with the operating environment shall be visually inspected. This inspection shall include, but not necessarily be limited to, inspection of the hydraulic fluid reservoir, fluid connections, and linkage connection to the piping and anchor to verify snubber operability.
- b. All mechanical snubbers shall be visually inspected. This inspection shall consist of, but not necessarily be limited to, inspection of the snubber and attachments to the piping and anchor for indications of damage or impaired operability.

No. of Snubbers Found
Inoperable During
Inspection Interval

Next Required
Inspection Interval

0	18 months + 25%
1	12 months + 25%
2	6 months + 25%
3, 4	124 days + 25%
5, 6, 7	62 days + 25%
≥8	31 days + 25%

3.6 LIMITING CONDITION FOR OPERATION

4.6 SURVEILLANCE REQUIREMENT

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

Snubbers may be categorized in two groups, "accessible" or "inaccessible," based on their accessibility for inspection during reactor operation. These two groups may be inspected independently according to the above schedule.

2. Functional Testing

- a. Once each refueling cycle, a representative sample of approximately 10% of the hydraulic snubbers contained in Table 3.6.1a shall be functionally tested for operability, including verification of proper piston movement, lock-up and bleed. For each unit and subsequent unit found inoperable, an additional 10% of the hydraulic snubbers shall be tested until no more failures are found or all units have been tested.
- b. Once each refueling cycle, a representative sample of approximately 10% of the mechanical snubbers contained in Table 3.6.1b shall be functionally tested for operability. The test shall consist of two parts:
 - (i) Verification that the force that initiates free movement of the snubber in either tension or compression is less than the specified maximum breakaway friction force.
 - (ii) Verify that the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression.

The above test cannot be performed until competitive marketable test fixtures are manufactured. Until such test fixtures are available, the functional test for mechanical snubbers will be limited to only part (i).

3.6 LIMITING CONDITION FOR OPERATION

4.6 SURVEILLANCE REQUIREMENT

For each unit and subsequent unit found inoperable, an additional 10% of the mechanical snubbers shall be so tested until no more failures are found or all units have been tested.

- c. In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the resampling.
3. When a snubber is deemed inoperable, a review of all pertinent facts shall be conducted to determine the snubber mode of failure and to decide if an engineering evaluation should be performed on the supported system or components. If said evaluation is deemed necessary, it will determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.
4. 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 determined to be a generic deficiency, all snubbers of the same design subject to the same defect shall be functionally tested.
5. Snubber service life monitoring shall be followed by existing station record systems, including the central filing system, maintenance files, safety related work packages, and snubber inspection records. The above record retention methods shall be used to prevent the hydraulic snubbers from exceeding a service life of 10 years and the mechanical snubbers from exceeding a service life of 40 years (lifetime of the plant).

H. Recirculation Pump Flow Mismatch

The LPCI loop selection logic has been described in the Dresden Nuclear Power Station Units 2 and 3 FSAR, Amendments 7 and 8. For some limited low probability accidents with the recirculation loop operating with large speed differences, it is possible for the logic to select the wrong loop for injection. For these limited conditions, the core spray itself is adequate to prevent fuel temperatures from exceeding allowable limits. However, to limit the probability even further, a procedural limitation has been placed on the allowable variation in speed between the recirculation pumps.

The licensee's analyses indicate that above 80% power the loop select logic could not be expected to function at a speed differential of 15%. Below 80% power, the loop select logic would not be expected to function at a speed differential of 20%. This specification provides a margin of 5% in pump speed differential before a problem could arise. If the reactor is operating on one pump, the loop select logic trips that pump before making the loop selection.

In addition, during the start-up of Dresden Unit 2, it was found that a flow mismatch between the two sets of jet pumps caused by a difference in recirculation loops could set up a vibration until a mismatch in speed of 27% occurred. The 10% and 15% speed mismatch restrictions provide additional margin before a pump vibration problem will occur.

ECCS performance during reactor operation with one recirculation loop out of service has not been analyzed. Therefore, sustained reactor operation under such conditions is not permitted.

I. Snubbers (Shock Suppressors)

Snubbers are designed to prevent unrestrained pipe 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 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 low probability events, a period of 72 hours is allowed for repairs or replacements. In case a shutdown is required, the allowance of 36 hours to reach a cold shutdown condition will permit an orderly shutdown consistent with standard operating procedures. Since plant startup should not commence with knowingly defective safety related equipment, Specification 3.6.1.4 prohibits startup with inoperable snubbers.

When a snubber is found inoperable, a review shall be performed to determine the snubber mode of failure. Results of the review shall be used to determine if an engineering evaluation of the safety-related system or component is necessary. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the support component or system.

All safety related hydraulic snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level and proper attachment of snubber to piping and structures.

All safety related mechanical snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation and attachments to the piping and anchor for indications of damage or impaired operability.

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 require 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.

To further increase the assurance of snubber reliability, functional tests will be performed once each refueling cycle. A representative sample of 10% of the safety-related snubbers will be functionally tested. Observed failures on these samples will require testing of additional units.

Hydraulic snubbers and mechanical snubbers may each be treated as different entities for the above surveillance programs.

Hydraulic snubber testing will include stroking of the snubbers to verify piston movement, lock-up, and bleed. Functional testing of the mechanical snubbers will consist of verification that the force that initiates free movement of the snubber in either tension or compression is less than the maximum breakaway friction force. The remaining portion of the functional test consisting of verification that the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression will not be done. This is due to the lack of competitive marketable test fixtures available for station use. Therefore, until such time as test fixtures become available, only part (i) of the test will be performed; part (ii) will not be done.

When the cause of rejection of the snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, 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 by visual inspection or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

Monitoring of snubber service life shall consist of the existing station record systems, including the central filing system, maintenance files, safety-related work packages, and snubber inspection records. The record retention programs employed at the station shall allow station personnel to maintain snubber integrity. The service life for hydraulic snubbers is 10 years. The hydraulic snubbers existing locations do not impose undue safety implications on the piping and components because they are not exposed to excesses in environmental conditions. The service life for mechanical snubbers is 40 years, lifetime of the plant. The mechanical snubbers are installed in areas of harsh environmental conditions because of their dependability over hydraulic snubbers in these areas. All snubber installations have been thoroughly engineered providing the necessary safety requirements. Evaluations of all snubber locations and environmental conditions justify the above conservative snubber service lives.

TABLE 3.6.1b (Continued)

SAFETY RELATED MECHANICAL SNUBBERS

SNUBBER NO.	LOCATION	ELEVATION	AZIMUTH	SNUBBER IN HIGH RADIATION AREA DURING SHUTDOWN	SNUBBERS INACCESSIBLE DURING NORMAL OPERATION	SNUBBERS ACCESSIBLE DURING NORMAL OPERATION
37	Drywell Recirc. Line 201A-28"	518'	90°	X	X	
38	Drywell Shutdown Cooling Line 1001A-16"	523'	0°	X	X	
39	Drywell Rx Water Cleanup Line 1201-8"	533'	316°	X	X	
40	Drywell Rx Water Cleanup Line 1201-8"	533'	301°	X	X	
41	Drywell Main Steam Line 3001B-20"	534'	28°	X	X	
42	Drywell Main Steam Line 3001A-20"	536'	14°	X	X	
43	Drywell Main Steam Line 3001D-20"	536'	346°	X	X	
44	Drywell Main Steam Line 3001C-20"	536'	332°	X	X	
45	Drywell Main Steam Line 3001B-20"	545'	105°	X	X	
46	Drywell Main Steam Line 3001B-20"	543'	105°	X	X	
47	Drywell Main Steam Line 3001A-20"	542'	73°	X	X	
48	Drywell Main Steam Line 3001A-20"	543'6"	73°	X	X	
49	Drywell Main Steam Line 3001A-20"	539'	20°	X	X	
50	Drywell Main Steam Line 3001C-20"	543'6"	195°	X	X	
51	Drywell Main Steam Line 3001C-20"	542'	195°	X	X	
52	Drywell Main Steam Line 3001D-20"	543'	343°	X	X	
53	Drywell Main Steam Line 3001D-20"	544'	343°	X	X	

Modifications to this table due to changes in high radiation should be submitted to the NRC as part of the next license amendment request.

ATTACHMENT-2

Dresden Unit 3, DPR-25

Proposed Technical Specification Changes

Revised Pages: 91b
91c*
99a
99b*

New Page: 91c-1*

* Indicates a change in this page from that submitted on April 16, 1981.

Note: Pages 91d-1, 91d-2, 91e-1 and 91e-2 are not included here. They remain the same as submitted on April 16, 1981.

3.6 LIMITING CONDITION FOR OPERATION**I. Snubbers (Shock Suppressors)**

1. During all modes of operation except cold shutdown and refuel, all safety related snubbers listed in Table 3.6.1a and 3.6.1b shall be operable except as noted in Specification 3.6.I.2 through 3.6.I.4.
2. From and after the time a snubber is determined to be inoperable, continued reactor operation is permissible only during the succeeding 72 hours unless the snubber is sooner made operable or replaced.
3. If the requirements of 3.6.I.1 and 3.6.I.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown or refuel condition within 36 hours.
4. If a snubber is determined to be inoperable while the reactor is in the cold shutdown or refuel mode, the snubber shall be made operable or replaced prior to reactor startup.
5. Snubbers may be added to safety related systems without prior license amendment to Tables 3.6.1a and/or 3.6.1b provided that a revision to Tables 3.6.1a and/or 3.6.1b is included with the next license amendment request.

4.6 SURVEILLANCE REQUIREMENT**I. Snubbers (Shock Suppressors)**

The following surveillance requirements apply to all safety related snubbers listed in Tables 3.6.1a and 3.6.1b.

1. Visual Inspection

An independent visual inspection shall be performed on the safety related hydraulic and mechanical snubbers contained in Tables 3.6.1a and 3.6.1b in accordance with the below schedule.

- a. All hydraulic snubbers whose seal material has been demonstrated by operating experience, lab testing or analysis to be compatible with the operating environment shall be visually inspected. This inspection shall include, but not necessarily be limited to, inspection of the hydraulic fluid reservoir, fluid connections, and linkage connection to the piping and anchor to verify snubber operability.
- b. All mechanical snubbers shall be visually inspected. This inspection shall consist of, but not necessarily be limited to, inspection of the snubber and attachments to the piping and anchor for indications of damage or impaired operability.

**No. of Snubbers Found
Inoperable During
Inspection Interval**

**Next Required
Inspection Interval**

0	18 months + 25%
1	12 months + 25%
2	6 months + 25%
3, 4	124 days + 25%
5, 6, 7	62 days + 25%
≥8	31 days + 25%

3.6 LIMITING CONDITION FOR OPERATION

4.6 SURVEILLANCE REQUIREMENT

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

Snubbers may be categorized in two groups, "accessible" or "inaccessible," based on their accessibility for inspection during reactor operation. These two groups may be inspected independently according to the above schedule.

2. Functional Testing

- a. Once each refueling cycle, a representative sample of approximately 10% of the hydraulic snubbers contained in Table 3.6.1a shall be functionally tested for operability, including verification of proper piston movement, lock-up and bleed. For each unit and subsequent unit found inoperable, an additional 10% of the hydraulic snubbers shall be tested until no more failures are found or all units have been tested.
- b. Once each refueling cycle, a representative sample of approximately 10% of the mechanical snubbers contained in Table 3.6.1b shall be functionally tested for operability. The test shall consist of two parts:
 - (i) Verification that the force that initiates free movement of the snubber in either tension or compression is less than the specified maximum breakaway friction force.
 - (ii) Verify that the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression.

The above test cannot be performed until competitive marketable test fixtures are manufactured. Until such test fixtures are available, the functional test for mechanical snubbers will be limited to only part (i).

3.6 LIMITING CONDITION FOR OPERATION

4.6 SURVEILLANCE REQUIREMENT

For each unit and subsequent unit found inoperable, an additional 10% of the mechanical snubbers shall be so tested until no more failures are found or all units have been tested.

- c. In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the resampling.
3. When a snubber is deemed inoperable, a review of all pertinent facts shall be conducted to determine the snubber mode of failure and to decide if an engineering evaluation should be performed on the supported system or components. If said evaluation is deemed necessary, it will determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.
4. 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 determined to be a generic deficiency, all snubbers of the same design subject to the same defect shall be functionally tested.
5. Snubber service life monitoring shall be followed by existing station record systems, including the central filing system, maintenance files, safety related work packages, and snubber inspection records. The above record retention methods shall be used to prevent the hydraulic snubbers from exceeding a service life of 10 years and the mechanical snubbers from exceeding a service life of 40 years (lifetime of the plant).

H. Recirculation Pump Flow Mismatch

The LPCI loop selection logic has been described in the Dresden Nuclear Power Station Units 2 and 3 FSAR, Amendments 7 and 8. For some limited low probability accidents with the recirculation loop operating with large speed differences, it is possible for the logic to select the wrong loop for injection. For these limited conditions, the core spray itself is adequate to prevent fuel temperatures from exceeding allowable limits. However, to limit the probability even further, a procedural limitation has been placed on the allowable variation in speed between the recirculation pumps.

The licensee's analyses indicate that above 80% power the loop select logic could not be expected to function at a speed differential of 15%. Below 80% power, the loop select logic would not be expected to function at a speed differential of 20%. This specification provides a margin of 5% in pump speed differential before a problem could arise. If the reactor is operating on one pump, the loop select logic trips that pump before making the loop selection.

In addition, during the start-up of Dresden Unit 2, it was found that a flow mismatch between the two sets of jet pumps caused by a difference in recirculation loops could set up a vibration until a mismatch in speed of 27% occurred. The 10% and 15% speed mismatch restrictions provide additional margin before a pump vibration problem will occur.

ECCS performance during reactor operation with one recirculation loop out of service has not been analyzed. Therefore, sustained reactor operation under such conditions is not permitted.

I. Snubbers (Shock Suppressors)

Snubbers are designed to prevent unrestrained pipe 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 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 low probability events, a period of 72 hours is allowed for repairs or replacements. In case a shutdown is required, the allowance of 36 hours to reach a cold shutdown condition will permit an orderly shutdown consistent with standard operating procedures. Since plant startup should not commence with knowingly defective safety related equipment, Specification 3.6.F.4 prohibits startup with inoperable snubbers.

When a snubber is found inoperable, a review shall be performed to determine the snubber mode of failure. Results of the review shall be used to determine if an engineering evaluation of the safety-related system or component is necessary. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the support component or system.

All safety related hydraulic snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level and proper attachment of snubber to piping and structures.

All safety related mechanical snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation and attachments to the piping and anchor for indications of damage or impaired operability.

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 require 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.

To further increase the assurance of snubber reliability, functional tests will be performed once each refueling cycle. A representative sample of 10% of the safety-related snubbers will be functionally tested. Observed failures on these samples will require testing of additional units.

Hydraulic snubbers and mechanical snubbers may each be treated as different entities for the above surveillance programs.

Hydraulic snubber testing will include stroking of the snubbers to verify piston movement, lock-up, and bleed. Functional testing of the mechanical snubbers will consist of verification that the force that initiates free movement of the snubber in either tension or compression is less than the maximum breakaway friction force. The remaining portion of the functional test consisting of verification that the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression will not be done. This is due to the lack of competitive marketable test fixtures available for station use. Therefore, until such time as test fixtures become available, only part (i) of the test will be performed; part (ii) will not be done.

When the cause of rejection of the snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, 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 by visual inspection or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

Monitoring of snubber service life shall consist of the existing station record systems, including the central filing system, maintenance files, safety-related work packages, and snubber inspection records. The record retention programs employed at the station shall allow station personnel to maintain snubber integrity. The service life for hydraulic snubbers is 10 years. The hydraulic snubbers existing locations do not impose undue safety implications on the piping and components because they are not exposed to excesses in environmental conditions. The service life for mechanical snubbers is 40 years, lifetime of the plant. The mechanical snubbers are installed in areas of harsh environmental conditions because of their dependability over hydraulic snubbers in these areas. All snubber installations have been thoroughly engineered providing the necessary safety requirements. Evaluations of all snubber locations and environmental conditions justify the above conservative snubber service lives.

ATTACHMENT 3

Quad Cities Unit 1, DPR-29
Proposed Technical Specification Changes

Revised Pages: 3.6/4.6-5a
3.6/4.6-6*
3.6/4.6-7*
3.6/4.6-14*

New Page: 3.6/4.6-14a*

* Indicates a change in this page from that submitted on April 16, 1981.

Note: Pages 3.6/4.6-15 through 3.6/4.6-15f are not included here. They remain the same as submitted on April 16, 1981.

within 24 hours unless the loop is sooner returned to service.

1. Shock Suppressors (Snubbers)

1. During all modes of operation except Shutdown and Refuel, all snubbers listed in Table 3.6-1 shall be operable except as noted in 3.6.1.2 following.
2. From and after the time that a snubber is determined to be inoperable, continued reactor operation is permissible during the succeeding 72 hours only if the snubber is sooner made operable.
3. If the requirements of 3.6.1.1 and 3.6.1.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 36 hours.
4. If a snubber is determined to be inoperable while the reactor is in the Shutdown or Refuel mode, the snubber shall be made operable prior to reactor start-up.
5. Snubbers may be added to safety-related systems without prior license Amendment to Table 3.6-1 provided that a revision to Table 3.6-1 is included with the next license amendment request.

1. Shock Suppressors (Snubbers)

The following surveillance requirements apply to all snubbers listed in Table 3.6-1.

1. Visual inspections shall be performed in accordance with the following schedule utilizing the acceptance criteria given by Specification 4.6.1.2.

Number of Snubbers Found Inoperable During Inspection or During Inspection Interval	Next Required Inspection Interval
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3,4	124 days ± 25%
5,6,7	62 days ± 25%
≥ 8	31 days ± 25%

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

Snubbers may be categorized in two groups, 'accessible' or 'inaccessible' based on their accessibility for inspection during reactor operation. These two groups may be inspected independently according to the above schedule.

Snubber service life monitoring shall be followed by the snubber surveillance inspection records and maintenance history records. The above record retention method shall be used to prevent the snubbers from exceeding a service life.

2. Visual Inspections shall verify:
 - a. There are no visible indications of damage or impaired operability, and
 - b. Attachments to the foundation or supporting structure are secure.
 - c. For hydraulic snubbers, the hydraulic fluid reservoir and fluid connections shall be inspected for operability.
3. Once each refueling cycle a representative sample of 10% of the total of each type of snubber in use in the plant shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test criteria, an additional 10% of that type of snubber shall be functionally tested.
4. The hydraulic snubber shall be functionally tested for operability, including verification of proper piston movement, lockup, and bleed.
5. The mechanical snubber functional tests shall verify:
 - a. That the breakaway force that initiates free movement of the snubber rod

in either tension or compression is less than the specified maximum force.

- b. That the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression. This test cannot be performed until competitive marketable test fixtures are manufactured and on site. Until such test fixtures are available, the functional test for mechanical snubbers will be limited to 4.6.1.5.a.
6. When a snubber is deemed inoperable, a review shall be conducted to determine the mode of failure and to decide if an engineering evaluation should be performed. If the engineering evaluation is deemed necessary, it will determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.
7. 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 determined to be generically deficient all snubbers of the same design, subject to the same defect shall be functionally tested.
8. In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the resampling

I. SNUBBERS

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. Snubbers excluded from this inspection program 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.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. 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. 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.

Snubber service life monitoring will be followed by the existing snubber surveillance inspection records and maintenance history records. The above record retention method should be used to prevent the hydraulic snubber from exceeding a service life of 10 years and the mechanical snubbers from exceeding a service life of 40 years.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, 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 by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at refueling cycle intervals. Hydraulic snubber functional testing will include stroking of the snubbers to verify piston movement, lockup and bleed. Functional testing of the mechanical snubber will consist of verification that the force that initiates free movement of the snubber in either tension or compression is less than the maximum breakaway friction force. The remaining portions of the functional test consisting of verification that the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression will not be done. This is due to the lack of competitive marketable test equipment available for Station use.

QUAD-CITIES
DPR-29

When a snubber is found inoperable, a review shall be performed to determine the snubber mode of failure. Results of the review shall be used to determine if an engineering evaluation of the safety-related system or component is necessary. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the support component or system.

Observed failures of these sample snubbers shall require functional testing of additional units.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above surveillance programs.

ATTACHMENT 4

Quad Cities Unit 2, DPR-30
Proposed Technical Specification Changes

Revised Pages: 3.6/4.6-5a
3.6/4.6-6*
3.6/4.6-7*
3.6/4.6-14*

New Page: 3.6/4.6-14a*

* Indicates a change in this page from that submitted on April 16, 1981.

Note: Pages 3.6/4.6-15 through 3.6/4.6-15f are not included here. They remain the same as submitted on April 16, 1981.

within 24 hours unless the loop is sooner returned to service.

1. Shock Suppressors (Snubbers)

1. During all modes of operation except Shutdown and Refuel, all snubbers listed in Table 3.6-1 shall be operable except as noted in 3.6.1.2 following.
2. From and after the time that a snubber is determined to be inoperable, continued reactor operation is permissible during the succeeding 72 hours only if the snubber is sooner made operable.
3. If the requirements of 3.6.1.1 and 3.6.1.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 36 hours.
4. If a snubber is determined to be inoperable while the reactor is in the Shutdown or Refuel mode, the snubber shall be made operable prior to reactor start-up.
5. Snubbers may be added to safety-related systems without prior license Amendment to Table 3.6-1 provided that a revision to Table 3.6-1 is included with the next license amendment request.

1. Shock Suppressors (Snubbers)

The following surveillance requirements apply to all snubbers listed in Table 3.6-1.

1. Visual inspections shall be performed in accordance with the following schedule utilizing the acceptance criteria given by Specification 4.6.1.2.

Number of Snubbers Found Inoperable During Inspection or During Inspection Interval	Next Required Inspection Interval
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3,4	124 days ± 25%
5,6,7	62 days ± 25%
≥ 8	31 days ± 25%

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

Snubbers may be categorized in two groups, 'accessible' or 'inaccessible' based on their accessibility for inspection during reactor operation. These two groups may be inspected independently according to the above schedule.

Snubber service life monitoring shall be followed by the snubber surveillance inspection records and maintenance history records. The above record retention method shall be used to prevent the snubbers from exceeding a service life.

2. Visual Inspections shall verify:
 - a. There are no visible indications of damage or impaired operability, and
 - b. Attachments to the foundation or supporting structure are secure.
 - c. For hydraulic snubbers, the hydraulic fluid reservoir and fluid connections shall be inspected for operability.
3. Once each refueling cycle a representative sample of 10% of the total of each type of snubber in use in the plant shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test criteria, an additional 10% of that type of snubber shall be functionally tested.
4. The hydraulic snubber shall be functionally tested for operability, including verification of proper piston movement, lockup, and bleed.
5. The mechanical snubber functional tests shall verify:
 - a. That the breakaway force that initiates free movement of the snubber rod

in either tension or compression is less than the specified maximum force.

- b. That the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression. This test cannot be performed until competitive marketable test fixtures are manufactured and on site. Until such test fixtures are available, the functional test for mechanical snubbers will be limited to 4.6.1.5.a.
6. When a snubber is deemed inoperable, a review shall be conducted to determine the mode of failure and to decide if an engineering evaluation should be performed. If the engineering evaluation is deemed necessary, it will determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.
7. 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 determined to be generically deficient all snubbers of the same design, subject to the same defect shall be functionally tested.
8. In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the resampling

I. SNUBBERS

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. Snubbers excluded from this inspection program 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.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. 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. 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.

Snubber service life monitoring will be followed by the existing snubber surveillance inspection records and maintenance history records. The above record retention method should be used to prevent the hydraulic snubber from exceeding a service life of 10 years and the mechanical snubbers from exceeding a service life of 40 years.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, 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 by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at refueling cycle intervals. Hydraulic snubber functional testing will include stroking of the snubbers to verify piston movement, lockup and bleed. Functional testing of the mechanical snubber will consist of verification that the force that initiates free movement of the snubber in either tension or compression is less than the maximum breakaway friction force. The remaining portions of the functional test consisting of verification that the activation (restraining action) is achieved within the specified range of acceleration in both tension and compression will not be done. This is due to the lack of competitive marketable test equipment available for Station use.

When a snubber is found inoperable, a review shall be performed to determine the snubber mode of failure. Results of the review shall be used to determine if an engineering evaluation of the safety-related system or component is necessary. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the support component or system.

Observed failures of these sample snubbers shall require functional testing of additional units.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above surveillance programs.