3.13 Hydraulic Shock Suppressors

Applicability

Applies to all hydraulic shock suppressors listed in Table 3.13-1.

Objective

To assure adequate shock suppression protection for primary coolant system piping and any other safety related system or component under dynamic loads as might occur during an earthquake or severe transient, while allowing normal thermal motion during startup and shutdown. This is done by assuring the operability of those hydraulic shock suppressors installed for that purpose.

Specification

3.13.1 The reactor shall not be heated above 200°F if a hydraulic shock suppressor listed in Table 3.13-1 is known to be inoperable.

3.13.2 If a hydraulic shock suppressor listed in Table 3.13-1 is determined to be inoperable during power operation, that hydraulic shock suppressor shall be made operable within 72 hours or the reactor shall be placed in the cold shutdown condition within an additional 36 hours.

Bases

Shock suppressors 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 shock suppressor 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 hydraulic shock suppressors required to protect the primary coolant system or any other safety system or component be operable during reactor operation.

Because the shock suppressor protection is required only during relatively 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 3.13.1 prohibits startup with inoperable shock suppressors.

TABLE 3.13-1

SNUBBER NO.	LOCATION	ELEVATION
HS-10	Pressurizer Relief Line A	409' - 2 3/4"
HS-11	Pressurizer Relief Line A	410' - 2/3/4"
HS-12	Pressurizer Relief Line A	410' - 2 3/4"
HS-13	Pressurizer Relief Line A	400' - 0"
HS-14	Pressurizer Relief Line A	400" - 0"
HS-66	Pressurizer Relief Line C	410' - 2 3/4"
HS-67	Pressurizer Relief Line C	410' - 2 3/4"
HS-68	Pressurizer Relief Line C	410' - 2 3/4"
HS-69	Pressurizer Relief Line B	410' - 2 3/4"
HS-70	Pressurizer Relief Line B	391' - 0"
HS-71	Pressurizer Relief Line A	367' - 6"
HS-72	Pressurizer Relief Line A	357' - 0"
H-A-1	Pressurizer Relief Line A	400' - 0"
H-A-2	Pressurizer Relief Line A	399' - 0"
H-B-1	Pressurizer Relief Line B	400' - 0"
H-B-2	Pressurizer Relief Line B	391' - 0"
H-C-1	Pressurizer Relief Line C	410' - 2 3/4"
H-C-2	Pressurizer Relief Line C	394' - 0"
HS-3	Main Steam Line A	425' - 0"
HS-4	Main Steam Line A	408' - 6"
HS-5	Main Steam Line A	428' - 0"
HS-6	Main Steam Line B	346' - 0"
HS-7	Main Steam Line B	420' - 0"
HS-15	Main Steam Line A	408' - 6"
HS-16	Main Steam Line B	423' - 2"
HS-17	Main Steam Line B	423' - 2"
HS-18	Main Steam Line B	408' - 6"
HS-19	Main Steam Line B	396' - 0"
HS-20	Main Steam Line B	408' - 6"
HS-22	Main Feedwater Header B	376' - 4 11/16"
HS-23	Main Feedwater Header B	376' - 4 11/16"
HS-24	Main Feedwater Header B	376' - 4 11/16"
HS-25	Main Feedwater Header B	376' - 4 11/16"
HS-26	Main Feedwater Header B	376' - 4 11/16"
HS-27	Main Feedwater Header B	376' - 4 11/16"
HS-28	Main Feedwater Header B	376' - 4 11/16"
HS-29	Main Feedwater Header B	376' - 4 11/16"
HS-30	Main Feedwater Line A	361' - 0"
HS-31	Main Feedwater Header A	376' - 4 11/16"
HS-32	Main Feedwater Header A	376' - 4 11/16"
HS-33	Main Feedwater Header A	376' - 4 11/16"
HS-34	Main Feedwater Header A	376' - 4 11/16"
HS-35	Main Feedwater Header A	376' - 4 11/16"
HS-36	Main Feedwater Header A	376' - 4 11/16"
HS-37	Main Feedwater Header A	376' - 4 11/16"
HS-38	Main Feedwater Header A	376' - 4 11/16"
HS-21	Emergency Feedwater Line B	394' - 0"
1A	Reactor Coolant Pump A	390' - 10"
2A	Reactor Coolant Pump A	390' - 10"
1B	Reactor Coolant Pump B	390' - 10"
2B	Reactor Coolant Pump B	390' - 10"
1C	Reactor Coolant Pump C	390' - 10"
2C	Reactor Coolant Pump C	390' - 10"
1D	Reactor Coolant Pump D	390' - 10"
2D	Reactor Coolant Pump D	390' - 10"

4.16 SPECIAL SURVEILLANCE

Applicability

Applies to miscellaneous surveillance items not covered by other specifications.

Objective

To provide special surveillance for items not covered by other specifications.

Specification

4.16 The following surveillance requirements apply to all hydraulic shock suppressors listed in Table 3.13-1.

4.16.1.1 Hydraulic shock suppressors shall be visually inspected to verify their operability in accordance with the following minimum frequency schedule:

Number of Shock Suppressors Found Inoperable During Inspection or During Inspection Interval	Next Required Inspection Interval
0	Each Refueling Period
1	12 months
2	6 months
3,4	124 days
5,6,7	62 days
≥8	31 days

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

Shock suppressors 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.

4.16.1.2 Once each refueling period at least two representative snubbers from a relatively severe environment shall be completely disassembled and examined for damage and abnormal seal degradation.

4.16.1.3 The first inspection required by 4.16.1.1 shall be done during the first refueling shutdown following issuance of this specification. The schedule of 4.16.1.1 shall be entered at the "Each Refueling Period" interval point.

Bases

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

The inspection frequency is based upon maintaining a constant level of shock suppressor protection. Thus the required inspection interval varies inversely with the observed shock suppressor failures. The number of inoperable shock suppressors found during a required inspection determines the time interval for the next required inspection. Inspections performed before that interval has elapsed (nominal time less 25%) may be used as a new reference point to determine the next inspection. However, the results of such early inspections may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule. Since no hydraulic shock suppressor have previously been found to be inoperable the schedule of 4.16.1.1 will be entered at the 18 month interval point.

If the categorization option of 4.16.1.1 is used all hydraulic shock suppressors in the reactor building shall be considered inaccessible and all others shall be categorized based on radiation levels, ambient conditions and other occupational hazards.

To complement the visual external inspections, disassembly and internal examination for component damage and abnormal seal degradation should be performed. The examination of two units, each refueling cycle, selected from relatively severe environments should adequately serve this purpose. Any observed wear, breakdown or deterioration will provide a basis for additional inspections.