10A.6 SHUTDOWN COOLING

The SDC System is used to cool the Reactor Coolant System from 300°F to ≤ 140°F. The maximum temperature and pressure at which SDC can be initiated is 300 psig and 300°F.

The SDC mode is a manually-initiated operation and is under strict administrative control during the entire cooldown period of approximately 36 hours. It is further noted that the SDC System conditions are above 200°F and 275 psig for less than 2% of the total operating time.

Based on the level of quality control, periodic ISI, the low usage factor, the short time this system exceeds 200°F and 275 psig, and the strict administrative control of the SDC System, a break in this system is not considered credible.

10A.6.1 PIPE WHIP

Since no pipe breaks or critical cracks are considered credible due to short duration, no pipe whip is considered.

10A.6.2 PIPE BREAK LOCATION

Not applicable (Section 10A.6.1).

10A.6.3 PIPE BREAK ORIENTATION

Not applicable (Section 10A.6.1).

10A.6.4 DYNAMIC ANALYSIS

Not applicable (Section 10A.6.1).

10A.6.5 PIPE WHIP, JET IMPINGEMENT, AND REACTIVE FORCES PROTECTION

No protective measures are required.

10A.6.6 SEISMIC CATEGORY I STRUCTURE EVALUATION

Since a break in this system is not considered credible, there will be no additional loading to affect the adequacy of Category I structures. Category I structure are designed in accordance with the design bases shown in Appendix 5A of the UFSAR.

10A.6.7 STRUCTURAL DESIGN LOADS

There will be no additional loads on the Category I structures or structural components because a break in this line is not considered to be credible. All Category I structures are designed using loads combinations listed in Appendix 5A of the UFSAR.

10A.6.8 ANALYSIS OF REVERSAL OF LOADS

Not applicable (Section 10A.6.1).

10A.6.9 STRUCTURAL EFFECT OF OPENINGS ADDED TO THE STRUCTURES

No new openings are required.

10A.6.10 VERIFICATION THAT ANY STRUCTURAL FAILURE WILL NOT AFFECT OTHER STRUCTURES REQUIRED FOR SAFETY

No structures will fail (Section 10A.1.10).

10A.6.11 VERIFICATION THAT PIPE RUPTURE WILL NOT AFFECT SAFETY

Not applicable (Section 10A.6.1).

10A.6.12 EFFECT ON CONTROL ROOM

Since there are no postulated ruptures in the system piping, therefore, there will be no effect on the Control Room.

10A.6.13 ENVIRONMENTAL QUALIFICATION OF AFFECTED REQUIRED EQUIPMENT

Not applicable (Section 10A.6.1).

10A.6.14 DESIGN DIAGRAMS AND DRAWINGS

Since no changes are required in this system, no design diagrams or drawings are included.

10A.6.15 FLOODING

Not applicable (Section 10A.6.1).

10A.6.16 QUALITY CONTROL AND INSPECTION PROGRAM

The quality control and inspection programs are presented in Section 10A.1.16.

10A.6.17 LEAK DETECTION

Not applicable (Section 10A.6.1).

10A.6.18 EMERGENCY PROCEDURES

Not applicable (Section 10A.6.1).

10A.6.19 SEISMIC AND QUALITY CLASSIFICATION

The SDC System is designed and constructed to meet ANSI B31.7, Class I requirements. The system is also designed to withstand an SSE in combination with normal design loads.

10A.6.20 DESCRIPTION OF ASSUMPTIONS, METHODS, AND RESULTS OF ANALYSIS FOR PRESSURE AND TEMPERATURE TRANSIENTS IN COMPARTMENTS

Not applicable (Section 10A.6.1).

10A.6.21 DESCRIPTION OF ASSUMPTIONS, METHODS, AND RESULTS OF ANALYSIS FOR EFFECT ON PRIMARY OR SECONDARY CONTAINMENT STRUCTURE DUE TO PIPE RUPTURE

Not applicable (Section 10A.6.1).