

**PREFERRED SAFE SHUTDOWN PATHS
FOR MILLSTONE UNIT 2**

IN RESPONSE TO:

NRC GENERIC LETTER 87-02/USI A-46

VERIFICATION OF SEISMIC ADEQUACY OF MECHANICAL AND ELECTRICAL
EQUIPMENT IN OPERATING REACTORS

PREPARED FOR:

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PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

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(* Designates attachments that are not included in the NRC Submittal

1.0 INTRODUCTION

The SQUG Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment, Reference 5.5, provides guidance for identifying the various alternate methods, or paths, to be used in accomplishing the following safe shutdown functions subsequent to a safe shutdown earthquake (SSE):

- Reactor Reactivity Control
- Reactor Coolant Pressure Control
- Reactor Coolant Inventory Control
- Decay Heat Removal

The purpose of this report is to document and describe those methods that were used to identify those safe shutdown paths and components that are needed to accomplish the four safe shutdown functions at the Millstone Unit 2 Nuclear Power Plant. This Report satisfies the SQUG commitment to provide a SSEL Report. The report documents the composite, Seismic Review and Relay Review SSELs as well as the overall approach used to develop them.

The methodology used to identify the safe shutdown paths and components is specified in the Project Instruction 0240-099-001(Reference 5.2) and the above mentioned SQUG "Generic Implementation Procedure (GIP)".

Northeast Utilities' design review process of the Safe Shutdown Path Report and the SSEL (in accordance with NUS NGP 5.05) has been completed and the results are documented and summarized in NUS memo ES-SD-95-002, dated January 4, 1995 (Reference 5.12). This includes the Operations review and concurrence with the Safe Shutdown methodology summarized in Attachment C.

2.0 SCOPE/METHOD

Using the guidelines provided in the GIP, Millstone Point Unit 2 (MP2) operating procedures and P&IDs, VECTRA has identified those systems and safe shutdown paths which can be used to accomplish the four safe shutdown functions identified in Section 1.0. An overview of the basic approach taken to accomplish each of these basic shutdown functions is shown on Figures 1, 2, 3 and 4. In addition to the systems needed to directly perform the above functions, those support systems that will be needed to conduct a safe shutdown have also been identified herein.

In selecting the paths that could be used to conduct a safe shutdown, VECTRA reviewed the Appendix R safe shutdown methodology (Reference 5.10) and Emergency/Abnormal Operating Procedures for Millstone Unit 2 (Reference 5.9). As a result, the paths selected are similar to those used to shutdown the plant in the event of a fire, and should result in little, or no, procedural changes for the plant. Operator actions which may need to be taken to compensate for equipment or system failure and are considered out of the normal routine, are addressed in Section 4.1 of this Report.

Attachment C to this report identifies the procedures, along with the main steps of each, that will support the shutdown paths. Although not all of the procedures identified in Attachment C may be covered by the SSEL, a review of the emergency (EOP) and abnormal (AOP) operating procedures was performed to ensure that the shutdown components and paths identified within the SSEL are in agreement to the methodologies described by those procedures. The SQUG GIP methodology does not require the plant operators to be directed to use the USI A-46 shutdown path as his first priority, but requires a check that trained operators using approval procedures will eventually be directed to use the path(s) provided in the SSEL. Attachment C indicates the procedural sequence that would be used to arrive at the shutdown path provided for in the SSEL.

The basic principle used to select safe shutdown paths and SSEL components is a safety classification approach with the application of the SQUG GIP criteria such that the components selected are only those required to maintain the integrity of the Reactor Coolant System (RCS) pressure boundary, shutdown the reactor, and maintain it in a safe shutdown condition. As allowed for in the GIP, components selected for use in performing a safe shutdown may include non-safety grade equipment. Other "nice to have" components have not been included in the shutdown path or on the SSEL.

3.0 ASSUMPTIONS/LIMITATIONS

Assumptions used in identifying the safe shutdown paths described in Section 4.0, and to generate the composite SSEL are described below. They have been broken down into groups based on which functional path the assumption pertains to.

3.1 GENERAL

- 3.1.1 Offsite power may not be available for 72 hours.
- 3.1.2 No other extraordinary events are postulated (i.e., LOCA, fire, HELB, SBO, etc.).
- 3.1.3 Technical Specifications exist, or administrative procedures will be developed, to notify operators of equipment which may be out of service in the shutdown paths selected for this study (Ref. 5.5, Part I Section 2.4.1).
- 3.1.4 Procedures will be developed or modified to identify required operator actions.
- 3.1.5 All electrically operated components for which relays have not been seismically evaluated are assumed to malfunction or spuriously operate during the seismic event.
- 3.1.6 Only that instrumentation which is absolutely necessary to control and monitor safe shutdown functions or equipment needs to be included on the SSEL.

Required Instruments:

- Pressurizer Level
- Pressurizer Pressure
- RCS Hot and Cold Leg Temperatures
- S/G Pressure
- S/G Level

Optional (nice-to-have) instruments

- CST Level
- BAT Level

Since no LOCAs or HELB inside containment are postulated, no containment pressure or temperature instrumentation has been included on the SSEL.

- 3.1.7 If achieving and maintaining a safe shutdown condition or function is dependent on a single item of equipment whose failure, either due to seismic loads or random active failure, would prevent accomplishment of any of the four essential safe shutdown functions, an alternate path to safe shutdown by use of a different train or a different item of equipment is included on the SSEL. In addition to the failure of active mechanical components, the failure of passive electrical components (i.e., MCCs, switchgear, etc.) was also postulated in the development of the safe shutdown paths, although the mechanism for these failures (short circuits, opens or ground) was not considered.

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- 3.1.8 The safe shutdown paths are chosen based on no more than one postulated active component failure. A component out of service is considered to be the single active failure for a path or function (Ref. GIP, Sect. 3.2.6).
- 3.1.9 Operator action is allowable as a means of providing redundancy for a component provided there is sufficient manpower and time to perform the action (Ref. GIP, Sect. 3.2.7).
- 3.1.10 Self actuated check valves, screens and filters do not need a seismic evaluation (Ref. GIP, Sect. 3.1.2). However, they are included on the SSEL if credited as an active boundary for one of the functional paths.
- 3.1.11 Heat exchangers and tanks are considered passive components for the purposes of this project (Ref. GIP, Sect. 3.3.10). Therefore, no alternate path around them is required to be identified as an active failure is not postulated.
- 3.1.12 The effects of spurious actuation of equipment as a result of safety signals (i.e., SIAS, CSAS, etc) has been considered for negative impact (i.e., boundaries, water sources, etc) on the operation of safe shutdown paths and/or equipment. That is, if a spurious safety signal could cause an inadvertent component actuation which would violate a boundary or adversely impact a water source, the component was included on the SSEL.
- 3.1.13 A valve indicated as locked open or closed in a MP2 procedure or on a F&ID is assumed to be physically impeded from changing state (i.e., prevented from opening or closing due to being wired in position, breaker racked out, etc.).
- 3.1.14 The normal position assumed for power operated valves is as shown on the P&ID with the exception of the those valves indicated in an operating procedure as having a position which is dependent upon the system operating mode. For valves with a system operating mode dependence, the initial position is assumed to be other than that required to support the safe shutdown path. These valves are considered active.
- 3.1.15 Those relief valves which are credited for providing over-pressure protection of a safe shutdown path are considered to be passive and are not included on the SSEL. These relief valves are assumed to be seismically rugged and considered either as an in line component (such as a manual valve) or would be included with the parent component by the "rule of the box".
- 3.1.16 No operator action is anticipated to be performed at any panel remote from the Main Control Room. If normal operation of the subject component is performed from the Main Control Room this methodology assumes that is where the action will be performed. Local operator action (manual MOV operation) may still be considered for compensation of circuit or power failure.
- 3.1.17 The motor operated Charging Header Containment Isolation Valve (2-CH-429) is normally open and is thus considered a passive valve. Therefore, no alternate path has been identified.

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3.1.18 A relay review will be performed on the three HPSI pumps (P-41A/B/C) to ensure that the pumps remain off during the SSE and do not present an inventory control problem. This will eliminate the need to perform a relay review on eight containment isolation valves and several other HPSI pump suction/discharge valves.

3.1.19 Manual valves are assumed to be in the position as shown on the P&IDs.

3.2 REACTIVITY CONTROL

3.2.1 The failure of one control rod to fully insert does not prevent the plant from achieving the required shutdown margin for hot shutdown pressure/temperature limits as discussed in Section 7.4.2.3 of the FSAR (Ref. 5.7).

3.2.2 The means exist and are accessible to the operators to verify reactivity control without indication of individual control rod position.

3.2.3 Because the plant is to be maintained within the pressure/temperature limits as specified in Section 3.4.9.1 of the Technical Specifications for the duration of the SSE, and the RCS makeup water sources will be borated (Ref. 5.7, Section 6.2.2.1) such that the boron concentration in the RCS will not be reduced, no additional sources or means of reactivity control are required.

3.2.4 As no means of boron dilution in the RCS are postulated, no provisions are made on the SSEL for boron concentration monitoring in the RCS.

3.2.5 One (1) BAT maintained at its minimum technical specification level will provide sufficient inventory to borate the RCS for cold shutdown conditions.

3.2.6 The Volume Control Tank (VCT) is assumed unavailable. Makeup will be provided from the Boric Acid Tanks (BATs) and the RWST.

3.2.7 It is assumed that the necessary reactivity control can be maintained without the need for letdown; i.e., plant cooldown initiation will establish sufficient RCS volume.

3.3 REACTOR COOLANT PRESSURE CONTROL

3.3.1 The process variables required to establish and maintain pressure control of the RCS are Pressurizer level, and Pressurizer pressure. Pressurizer level is required to ensure the maintenance of a steam bubble in the Pressurizer.

3.3.2 The Pressurizer proportional heater control groups (P-1 and P-2) have been included on the SSEL to assist in maintaining Pressurizer pressure since they receive emergency power.

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- 3.3.3 Auxiliary Pressurizer Spray valve, 2-CH-517, is to remain closed until a reduction in RCS pressure is required. This valve will provide auxiliary spray for operator control of the RCS during shutdown.
- 3.3.4 Pressurizer spray control valves 2-RC-100E and 2-RC-100F has been included on the SSEL for IPEEE purposes only. Should one, or both, of these valves open as a result of relay chatter, the plant operator could stop the spray-down by securing the running Reactor Coolant Pump(s).

3.4 REACTOR COOLANT INVENTORY CONTROL

- 3.4.1 It is assumed that RCS leakage is within Technical Specification limits, and that the Boric Acid Tanks and the RWST are capable of providing all necessary coolant makeup needs.
- 3.4.2 Only borated sources of RCS makeup water from the BATs and the RWST will be utilized for reactivity and inventory control.
- 3.4.3 The CVCS system only requires one charging pump to control RCS inventory for Technical Specification allowable leakage and ensure that this safe shutdown function can be performed. However, in order to ensure adequate margin in makeup capacity, and not limit the cooldown rate, two charging pumps will be required. Both back-up pumps are included on the SSEL to provide reliability.
- 3.4.4 RCS temperature and pressure will be maintained within the limits established in Technical Specification 3.4.9.1, Fig. 3.4.2.
- 3.4.5 Flow diversion through the following valves is not considered to be significant, and therefore, the valves have not been included on the SSEL:
 - 2-RC-001 and -002, RCS sample line isolation valves

3.5 DECAY HEAT REMOVAL

- 3.5.1 It is assumed that one of the two steam generators is available for decay heat removal and that it will provide sufficient decay heat removal capacity.
- 3.5.2 Each of the motor driven AFW pumps is capable of providing the required amount of water to a single steam generator in order to cool down the RCS (Ref. 5.7, Section 10.4.5.1.2). The turbine-driven pump is designed to provide flow to both steam generators, thus it is assumed to be the primary flow path.
- 3.5.3 The Condensate Storage Tank (CST) with the minimum water volume (150,000 gal.) will provide sufficient water to cool down the Reactor Coolant System to less than 300°F and place the Shutdown Cooling System into service. (Reference Technical Specifications, 3/4.7.1.3 and MNPS-2 FSAR, Section 10.4.5.3.)

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- 3.5.4 Only one of the eight safety valves on each of the steam generators is required to remove reactor core decay heat immediately following the reactor shutdown. All eight safety valves on each steam line have been included on the SSEL for additional reliability.
- 3.5.5 The process variables required to establish and maintain RCS decay heat removal are RCS hot and cold leg temperatures (T_H , T_C), Steam Generator Level and Steam Generator Pressure (P_{SG}). In addition to these instruments it will be necessary to have level indication for the CST.
- 3.5.6 In order to transition to Cold Shutdown, it will be necessary to open one of the Atmospheric Dump Valves (2-MS-190A or 2-MS-190B) to vent steam to the atmosphere. These valves fail closed on a loss of air and will require local manual operation since no auxiliary air supply is available.
- 3.5.7 The Shutdown Cooling (SDC) System is also required to bring the plant to a cold shutdown condition. SDC is established by cross connecting a single LPSI (shutdown cooling) Pump to both SDC Heat Exchangers. Water is circulated from the RCS Hot Leg by the LPSI pump and through the SDC Heat Exchangers and back into the RCS cold legs via the four safety injection lines.
- 3.5.8 SDC flow control valves (2-SI-306 and -657) are air-operated valves with handwheels to facilitate opening/closing upon a loss of air.

3.6 AUXILIARY SYSTEMS

3.6.1 EMERGENCY DIESEL GENERATORS

- 3.6.1.1 It is assumed that the EDG auxiliaries are maintained in accordance with the appropriate Technical Specifications and that both diesels will be available prior to the SSE.
- 3.6.1.2 Also, "the combined capacity of the diesel oil supply tanks is sufficient for one diesel generator to operate for approximately seven days plus the other diesel generator to operate for one hour following a LOCA" (Ref. 5.7, Section 8.3.2.2). Based on these facts, there is enough diesel fuel in the respective oil supply tank (T-48A and 48B) to allow operation of both EDGs for the 72-hour period following the seismic event.
- 3.6.1.3 Identification and review of the components (i.e., under-voltage relays, etc.) that initiate the start sequence and causes the EDGs to start is not within the scope of this project. It is assumed that the plant conditions as a result of the SSE will cause the operator to manually start the EDG(s) if they haven't started automatically, and at least one diesel will be ready to accept loads within a reasonable length of time that will not effect safe shutdown.

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3.6.2 ELECTRICAL DISTRIBUTION SYSTEM

3.6.2.1 The station batteries will be relied on to provide essential 120V AC inverter loads and 125V DC loads necessary for the short period of time following the SSE until the EDG(s) have reenergized the battery charges. In addition, a spare battery charger assures the continuing support of either battery should either station battery charger fail or be out of service.

3.6.3 SERVICE WATER SYSTEM

3.6.3.1 Only one Service Water pump (Reference 5.6) is required to provide adequate flow for the short term need of cooling both Diesel Generators provided service water cross-tie valves 2-SW-97A and B are open. In the event a single service water pump is lost (active failure), both service water headers can be returned to service utilizing abnormal operating procedure AOP 2565 (Loss of Service Water).

3.6.3.2 Two Service Water pumps and both headers will be required to provide adequate flow for shutdown cooling.

3.6.3.3 No instrumentation will be provided on the SSEL to monitor SW system operation. System operation can be determined based on equipment observation (i.e., feeling flow through the piping, flow out of a vent, etc.).

3.6.3.4 Service water valves 2-SW-102 and/or 2-SW-104 may need to be closed following a LOOP to prevent flow diversion from the DC Switchgear Room water chillers.

3.6.4 REACTOR BUILDING CLOSED COOLING WATER SYSTEM (RBCCW)

3.6.4.1 The RBCCW system is necessary only to transfer decay heat from the SDC Heat Exchangers to the SW System once cold shutdown has begun.

3.6.4.2 The RBCCW system is designed such that two independent headers supply the necessary cooling water. Redundant safety feature components, cooled by the RBCCW system, are split between the two independent headers. The other systems and components cooled by the RBCCW system are divided between the headers to equalize header heat loads.

3.6.4.3 The source of makeup water to the RBCCW surge tank is the Primary Water System which is not included on the SSEL or identified as a support system. It is assumed that the RBCCW system leak rate is sufficiently low as to not require refilling the RBCCW surge tank for the duration of the SSE.

3.6.4.4 No instrumentation will be provided on the SSEL to monitor RBCCW system operation. System operation can be determined based on equipment observation (i.e., feeling flow through the piping, flow out of a vent, etc.).

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3.6.4.5 The RBCCW system operation during a SSE uses two RBCCW Pumps, two RBCCW Heat Exchangers and two headers for cooling. However, if one RBCCW header is lost, one pump, heat exchanger and header can provide adequate cooling. (Ref. 5.7, Section 9.4.3.2). All three pumps and heat exchangers are included on the SSEL to provide added reliability and redundancy for the safe shutdown function. It also eliminates the need of an operator to determine if the pump is operating at the time of the SSE.

3.6.5 HVAC

3.6.5.1 In order to ensure an air supply path to the Control Room Air Supply Fans (F-21A and B), it is necessary to include the Exhaust Fans (F-31A and B) and their discharge dampers on the SSEL. This is because the remainder of the ventilation system dampers will fail in the recirculation mode and shutoff outside air on a loss of control air.

3.6.5.2 Air flow through dampers 2-HV-137A/B and 2-HV-138A/B is insignificant and closure of these dampers will not effect the cooling of either the DC Switchgear Rooms or the adjacent Battery Rooms. (Reference 5.11). Therefore, they have not been included on the SSEL.

3.6.6 CONTROL AIR SYSTEM

3.6.6.1 The Control Air system is not required for a safe plant shutdown. Control Air system components, other than control valve accumulators and solenoid operators for certain valves, will not be included on the SSEL.

3.6.6.2 The Control Air system is assumed to fail following the SSE, since offsite power will not be available. The failure position of air operated valves within the various systems have been considered for this report and are reflected in the "Required State" field on the SSEL.

4.0 RESULTS

4.1 SYSTEM PATHS

Specific references to primary and backup paths or components are avoided where possible. However, where required, more than one component or path is identified in order to accomplish the safe shutdown function.

4.1.1 REACTIVITY CONTROL

The required shutdown margin will be established and maintained by the use of the control rods and using only borated water from the BATs to provide makeup to the Reactor Coolant System as it cools down. It is assumed that the boron concentration of the BATs will be sufficient to provide the necessary shutdown margin for hot shutdown conditions. The initial control of reactivity using the control rods and the control rod drive system is considered single failure proof and no detailed review was performed. The actual cause of the control rod insertion (i.e., manual or automatic scram) was not considered in this project. The components which comprise the control rod drive and reactor protection system are not included on the composite SSEL.

Charging Pump #1 (P-18A), injecting borated water into the RCS via the Loop 1A Charger Header Valve, 2-CH-519, is considered the primary means of ensuring reactivity control as the RCS temperature decreases.

4.1.2 REACTOR COOLANT PRESSURE CONTROL

The primary method to be used in controlling a Reactor pressure increase will be to use Pressurizer auxiliary spray via the Auxiliary Spray Charging Header Supply Valve (2-CH-517). The backup method for reducing Reactor coolant pressure will be through the use of the Pressurizer PORVs (2-RC-402, 2-RC-404).

The proportional pressurizer heaters and CVCS charging pumps will be used in the event the RCS pressure needs to be increased.

Required Operator Actions

- In the event either or both pressurizer spray control valves (2-RC-100E and 2-RC-100F) spurious open, the valves can be manually closed or the Reactor Coolant pumps need to be tripped to stop the spray.
- When the RCS temperature and pressure have decreased to 275°F and 400 psia, the LTOP setpoint selector switches 2-RC-402 and 2-RC-404 can be placed in the "LOW" position.

4.1.3 REACTOR COOLANT INVENTORY CONTROL

Reactor Coolant inventory will be maintained by use of the CVCS. The "A" Charging Pump will be considered the primary method to increase the

Pressurizer level with the two other pumps providing backup capability. The source of borated water will be from the Boric Acid Tanks with a backup supply available via the RWST. The make up water will be injected directly into the RCS via one of the RCS loops charging headers. No letdown path has been considered for the USI A-46 shutdown method since control air has been assumed to be lost. Pressurizer level reductions will be accomplished by the cooldown of the RCS. In addition to providing a method to add water to compensate for system losses and shrinkage, potential discharges paths and isolation valves have been identified to ensure that they can be isolated.

The Reactor Coolant Pump (RCP) leakoff lines must be isolated to control the bleedoff from the RCP seals. The RCP leakoff line relief valve 2-CH-199 will need to be isolated by closing 2-CH-507 using the backup nitrogen supply. This valve is not single failure proof and should it fail to close, it will result in an uncontrolled leakage path.

Required Operator Actions

- Indication of CVCS System operation (i.e. charging pump running) and position of the loop charging valves is not provided on the SSEL. The operator can be assured of positive inventory control based on the redundant Pressurizer level indication.

4.1.4 DECAY HEAT REMOVAL

The removal of reactor decay heat will be accomplished by secondary heat removal. The initial removal of decay heat will be accomplished by automatic operation of the Main Steam Safety Valves until which time the decay heat rate decreases to the point where the Atmospheric Dump Valves (2-MS-190A, 2-MS-190B) can be used. Cooldown of the RCS will be accomplished using one of the Atmospheric Dump Valves. The steam driven Auxiliary Feedwater Pump(s) (P-9A, P-9B) will be used to supply water to the Steam Generators.

Steam dump valves to the condenser have not been considered for this project for two reasons. The first is that all four air operated valves will most likely fail closed on a loss of off site power. Secondly, the Condensate and Circulating water pumps would be required to remove water and heat from the condenser and would not be available if off-site power is lost.

After the RCS temperature has been reduced to 300°F or less, by venting the steam generators using the atmospheric dumps, the removal of decay heat will continue by use of the SDC System.

Required Operator Actions

- The SDC system also includes manual valves which must be repositioned in order to align the flow through the SDC Heat Exchangers and back into the RCS cold legs via the four Safety Injection lines. Briefly, this lineup includes opening RCS suction manual valves 2-SI-709,

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2-SI-440, 2-SI-441, and opening SDC Heat Exchanger discharge manual valves, 2-SI-456, 2-SI-457. For total system alignment, refer to station procedure OP 2310.

- Since SDC system valves 2-SI-306 and -657 are not single failure proof, it may be necessary to take manual control of the valves to control the shutdown rate.
- SDC suction header isolation valves (2-SI-651 and 2-SI-652) are not single failure proof. It may be necessary to enter the Containment to manually open the valve in order to enter shutdown cooling.
- In the event control of auxiliary feedwater regulating valves 2-FW-43A and/or 43B is lost, the valves can be manually operated by local handwheels (OP 2322) or their bypass valves can be used.

4.1.5 SUPPORT SYSTEMS

In selecting frontline systems and equipment to be used to accomplish the four safe shutdown functions, additional systems and components are identified and classified as Support Systems. The following systems have been identified as being required to support one or more of the frontline systems, and their relationships are shown on Table 4.1:

- Emergency Diesel Generators and their auxiliaries to provide electrical power in the event off site power is lost.
- Electrical distribution for selected AC and DC loads
- Service Water
- Reactor Building Closed Cooling Water (RBCCW)
- Control Room Ventilation HVAC
- DC Switchgear Rooms HVAC
- Containment Air Recirculation
- Upper and Lower 4160V Switchgear Rooms HVAC
- East and West 480V AC Loadcenter Rooms HVAC
- Diesel Generator Rooms Vent Fans
- ESF Room Fans

Required Operator Actions

- RBCCW System Operations: Since no-direct means of ensuring RBCCW system operation has been provided on the SSEL, the operator will be relied on to determine system operation based on:
 - Visual indication of one or more RBCCW pumps (P-11A,B,C) operating.
 - Cooling of the SDC Heat Exchangers appears to be working properly.

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- In addition to the above, if the instrument air system is lost, operator action will be required to manually CLOSE shutdown cooling heat exchanger outlet valves (2-RB-13.1A and 13.1B) to prevent RBCCW pump runout. (Ref. AOP 2563).
- Service Water System Operation: Since there is no direct means of indication in the flow paths of the Service Water system, the operator will be relied on to determine system operation based on:
 - Flow is being provided to the diesel generators.
 - The confirmation of flow out of the Service Water side of one or two of the operating RBCCW heat exchangers.
 - The confirmation of flow by feeling the Service Water piping at the RBCCW heat exchangers.
- Service Water Operation: In the event one of the flow control valves (2-SW-178A, B or C) to the vital AC Switchgear Room cooling coils fail closed or partially closed, the respective manual bypass valves (2-SW-180A, B or C) can be opened to establish flow to coolers.
- HVAC System Operation:
 - The DC Switchgear Rooms are normally cooled by a non-vital chilled water system that requires the TBCCW System for the chiller's evaporator. However, the vital chilled water system will be used to cool these areas following a SSE. This will require the operator to manually shift to the vital chilled water system if the non-vital system is unavailable.
 - The vital chilled water system for the DC Switchgear Rooms will need to be operated in a split configuration (i.e., one chiller and pump for each ventilation system). Potentially, the operator will be required to open the doors to the DC Switchgear Rooms due to some limitations on the ventilation chilled water system.

4.2 PATH BOUNDARIES

4.2.0 REACTIVITY, COOLANT PRESSURE AND COOLANT INVENTORY CONTROL

- 4.2.0.1 LI-206, 206A, 208 and 208A and BAT level indicators are included to provide information on the remaining inventory in the BATs. If the Technical Specification limits are maintained, the requirement to maintain these devices in the USI A-46 program may not be necessary.
- 4.2.0.2 2-CH-508 has been provided as an optional BAT supply path to the charging pumps in the event 2-CH-509 fails closed as the result of a single failure. Operator action may be required following the SSE to align 2-CH-508.

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- 4.2.0.3 Several Volume Control Tank (VCT) isolation valves (2-CH-512 and 2-CH-501) are also included on the SSEL to ensure that the VCT is not overfilled. Isolation of one valve in each line is necessary to ensure adequate isolation.

4.2.1 REACTIVITY CONTROL

- 4.2.1.1 The paths that can be utilized to ensure reactivity control in the event makeup water is required for the RCS are shown on the following P&IDs contained in Attachment A:

25203 - 26015 (SH 1):	LPSI System
25203 - 26015 (SH 2):	HPSI System
25203 - 26017 (SH 1):	Charging System
25203 - 26017 (SH 3):	Boric Acid System

- 4.2.1.2 The RWST and its level indication is included on the SSEL. The RWST will also be utilized to provide borated water once the required BAT volume has been charged into the RCS. Should this action be necessary, operator action may be required to align the RWST to the charging pump suction and to properly divert flow away from containment.

- 4.2.1.3 The reactivity control function, as discussed previously, will utilize a path from the BATs to the RCS utilizing one of the three charging pumps. The normal charging path is assumed to be via the Loop 1A Charging Header (2-CH-519) since this valve is controllable from the Fire Shutdown Panel. 2-CH-518 is included on the SSEL as an alternate supply path to the RCS.

- 4.2.1.4 Several diversion paths from the BATs to the charging pumps have also been included on the SSEL as being necessary for review. However, should any of these alternate paths inadvertently open as a result of the SSE, the only consequence would be an additional amount of borated water being added to the RCS.

4.2.2 REACTOR COOLANT PRESSURE CONTROL

- 4.2.2.1 The paths utilized for control of the Reactor Coolant System pressure are shown on the following P&IDs contained in Attachment A:

25203 - 26014 (SH 2):	Reactor Coolant System
25203 - 26015 (SH 1):	LPSI System
25203 - 26015 (SH 2):	HPSI System
25203 - 26017 (SH 1):	Charging System
25203 - 26017 (SH 3):	Boric Acid System

- 4.2.2.2 The primary method to reduce RCS pressure will utilize the Pressurizer auxiliary spray line and valve 2-CH-517 which can be unlocked from the Control Room. The operating charging pump will provide the necessary water supply to quench the Pressurizer steam bubble and reduce the RCS pressure.

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

- 4.2.2.3 The backup method for reducing RCS pressure when the systems pressure is greater than 325 psig will require the operation of one set of Pressurizer PORV's. When the RCS conditions drop below design pressure, the SDC system is initiated.
- 4.2.2.4 In the event it is necessary to increase Reactor coolant pressure, the CVCS system, utilizing one charging pump as discussed in Section 4.2.1, will be required.
- 4.2.2.5 RCS and Pressurizer pressure can be monitored by a number of pressure transmitters and associated pressure indicators on the SSEL. Although only a primary and backup transmitter on the Pressurizer would be required to satisfy USI A-46, the same devices that were included for Appendix R have also been included on the SSEL to provide for redundancy.
- 4.2.2.6 No evaluation of an inadvertent start of either HPSI pump or opening of the associated injection valves has been made for this project. It is anticipated that operator action can be taken to secure the pump and prevent any unnecessary inventory or pressure increase.

4.2.3 REACTOR COOLANT INVENTORY CONTROL

- 4.2.3.1 The paths that can be utilized to ensure Reactor Coolant System inventory control are shown on following P&IDs contained in Attachment A:

25203 - 26014 (SH1):	Reactor Coolant System
25203 - 26014 (SH2):	Reactor Coolant System
25203 - 26014 (SH3):	Reactor Coolant Pumps
25203 - 26015 (SH1):	LPSI System
25203 - 26015 (SH2):	HPSI System
25203 - 26017 (SH1):	Charging System
25203 - 26017 (SH2):	Deborating & Purification System
25203 - 26017 (SH3):	Boric Acid System

- 4.2.3.2 The paths identified for control of the RCS have been broken down into two (2) categories: makeup and isolation. The RCS inventory makeup path is the same as that which was identified for reactivity and RCS pressure control. However, to establish inventory control, three additional actions must be accomplished. First, the RCP leakoff lines must be isolated to control the bleedoff from the RCP seals. Second, the RCS letdown line must be isolated and finally, all possible loop discharge paths which, if opened, could result in a RCS loss of coolant inventory, must be isolated. These steps will ensure that all makeup water to the RCS will be injected directly into the RCS loops and further inventory losses will be minimized.
- 4.2.3.3 Valves 2-RC-232, 2-RC-233, 2-RC-234, 2-RC-235, 2-RC-215 and 2-RC-406 are the primary means of isolating the Reactor Coolant System primary drain header. With the exception of 2-RC-406, all of these valves are normally closed manual

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

valves, and therefore neither a seismic or a relay review is required. Both reviews are required for 2-RC-406.

- 4.2.3.4 Shutdown cooling suction header isolation valves 2-SI-651 and 2-SI-652 must remain closed to maintain the RCS pressure boundary (at 2-SI-652) and to prevent inventory loss either through relief valve 2-SI-469 or by rupture of low pressure piping downstream of 2-SI-651.

4.2.4 DECAY HEAT REMOVAL

- 4.2.4.1 The paths that can be utilized to remove Reactor Decay heat are shown on the following P&IDs contained in Attachment A:

25203 - 26002 (SH1):	Main Steam from Generators
25203 - 26002 (SH2):	Main Steam Generator Blowdown System
25203 - 26005 (SH2):	Feed System
25203 - 26005 (SH3):	Condensate Storage & Aux Feed System
25203 - 26014 (SH1):	Reactor Coolant System
25203 - 26015 (SH1):	LPSI System
25203 - 26015 (SH2):	HPSI System
25203 - 26015 (SH3):	Safety Injection Tanks

- 4.2.4.2 The paths identified for Decay Heat Removal are categorized to provide the following functions:

- Decay Heat Removal at high Reactor pressure
- Decay Heat Removal at low Reactor pressure
- Auxiliary Feedwater to Steam Generators
- Feedwater Sources

- 4.2.4.3 Immediately following the Reactor shutdown, the Main Steam and Auxiliary Feedwater Systems must be relied upon to remove Reactor decay heat. One or more of the main steam safety valves on each of the operable Steam Generators will open to provide the initial heat removal capability. While the safety valves are providing decay heat removal, the Operator will be isolating the Steam Generators by closing the MSIVs to ensure that control of the RCS cooldown is maintained. The Auxiliary Feedwater System will also be started so that Steam Generator inventory can be replaced.

- 4.2.4.4 The auxiliary feedwater regulating valves (2-FW-43A and B) will fail open upon loss of instrument air. The backup air supply (pressure accumulators) provided for these valves will allow for remote operation of the valves for a limited period of time. After the air backup is exhausted, manual control of the valves can provide for control of feedwater flow. (Ref. AOP 2563)

- 4.2.4.5 The Atmospheric Dump Valves (2-MS-190A, 2-MS-190B) will be utilized to remove Reactor decay heat after the initial decay heat rate has reduced to a level where the dump valves alone can handle the heat load. If instrument air is lost to

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

either valve, or if the bottle-up switch for 2-MS-190A has been thrown, the valves will be manually opened.

- 4.2.4.6 Isolation of the Steam Generator blowdown lines is provided as an additional means of controlling the RCS cooldown rate.
- 4.2.4.7 Each of the Steam Generators is provided with four (4) level transmitters to monitor S/G inventory. The third and fourth transmitter is provided only for completeness and redundancy.
- 4.2.4.8 Once the plant is cooled to below 300°F, the SDC System can be used to cool the plant to cold shutdown. This alignment includes repositioning the following manual valves: 2-SI-709, 2-SI-440, 2-SI-441, 2-SI-452, and 2-SI-453, all of which are normally closed and need to be unlocked and opened. 2-SI-456 and 2-SI-457 are normally closed and need to be opened, and 2-CS-3A and 2-CS-3B are normally opened and need to be unlocked and closed.
- 4.2.4.9 Shutdown cooling suction line valves 2-SI-651 and 2-SI-652 are normally closed and need to be opened to place the RCS on shutdown cooling. Failure of either valve will prevent the capability to enter shutdown cooling since this is the only line that connects to the RCS.
- 4.2.4.10 P&ID 25203 - 26014 (SH1) identifies instrumentation that will be needed to monitor RCS loop temperatures and verify that adequate subcooling exists for decay heat removal.

4.2.5 DIESEL GENERATOR SYSTEM

- 4.2.5.1 The paths needed to ensure that operability of the diesel generators are shown on P&IDs 25203 - 26010 (SH1) and 25203 - 26018 (SH4, SH5) contained in Attachment A.
- 4.2.5.2 The EDG air start solenoid valves have been included on the Composite SSEL for completeness only.
- 4.2.5.3 With the exception of certain EDG fuel oil supply and air start components, other EDG auxiliary components, such as cooling water and lube oil, are not included on the SSEL. These auxiliary components are mounted on the EDG skid and are evaluated with the diesel generator (H-7A and H-7B) under the "rule-of-the-box".

4.2.6 SERVICE WATER (SW) SYSTEM

- 4.2.6.1 The paths needed to ensure the operability of the Service Water System to supply necessary heat loads are shown on the following P&IDs contained in Attachment A:

25203 - 26008 (SH1):	Circulating Water
25203 - 26008 (SH2):	Service Water
25203 - 26008 (SH3):	Service Water

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

4.2.6.2 The SW system provides the ultimate heat sink for which heat must be rejected by plant equipment other than the Main Condenser. The source of SW is sea water from the Long Island Sound. In the short term, the only need for SW is for Emergency Diesel Generator cooling, however, as part of the transition to cold shutdown, SW is also used to transfer heat from the RBCCW system.

4.2.6.3 Provisions to close 2-SW-3.2A and -3.2B have been included in this shutdown analysis and SSEL. The valves' accumulators, and power supplies for the actuators solenoid valve, are included on the SSEL.

4.2.7 REACTOR BUILDING CLOSED COOLING WATER (RBCCW) SYSTEM

4.2.7.1 The paths needed to ensure the operability of the RBCCW System to supply necessary heat loads shown on the following P&IDs contained in Attachment A:

25203 - 26022 (SH1):	RBCCW System
25203 - 26022 (SH2):	RBCCW System
25203 - 26022 (SH3):	RBCCW System
25203 - 26022 (SH4):	RBCCW System
25203 - 26022 (SH5):	RBCCW System
25203 - 26022 (SH6):	RBCCW System

4.2.7.2 The RBCCW System is required for continuous operation during the SDC process beginning 3.5 hours after the start of shutdown (Ref. 5.7, Section 9.4.3.3). The system's only safe shutdown function is to transfer decay heat from the SDC Heat Exchangers to the SW system once cold shutdown has begun.

4.2.7.3 A number of the RBCCW System components identified on the SSEL are only required for maintenance of the system's fluid/pressure boundary.

4.3 METHODOLOGY

The 25 fields contained in the SSEL database are indicated in Appendix B of Reference 5.2. Data for the individual fields was collected from reviews of plant drawings, the NUSCo PMMS database, plant operating procedures and preliminary walkdowns. Any specific methodology used to perform the various information collection efforts are discussed in the following sections.

4.3.1 The preferred safe shutdown paths were identified based on the assumptions and criteria presented in Section 3.0 as well as the Project Instruction (Ref. 5.2), ABB Impell proposal (Ref. 5.3) and the SQUG GIP (Ref. 5.5).

4.3.2 Based on the identified paths, the MP2 P&IDs were reviewed to identify those active and passive components in the paths which are required to support the safe shutdown function.

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

- 4.3.3 The following fields of information for each active and passive component were collected from the P&ID or electrical one-line diagrams for input into the SSEL database:
- Equipment ID Number.
 - SQUG Equipment Class - Based on GIP (Ref. 5.5, Sect. 3.3.1).
 - Equipment Function - Active or passive to support the safe shutdown function.
 - Diagram and Support System Drawing Numbers - The numbers are entered in the database without the 25203 - prefix that is assigned to MP2 drawings.
 - Line Size - collected for components connected to piping to assist in the walkdown effort. Entries in the SSEL are in inches. If not shown, the field entry is UNK (unknown). If multiple sizes indicated, the field entry is VAR (various).
 - Equipment Description - Based on function of the component as indicated on the drawing.
- 4.3.4 The P&IDs were marked up and highlighted in accordance with Reference 5.2. The marked up P&IDs are included as attachments to this Report.

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

Support System and Safe Shutdown Function Dependencies												
FRONTLINE SYSTEMS						SUPPORT SYSTEMS						
	CHARGING	SAFETY INJECTION	RCS	AUX FEEDWATER	SHUTDOWN COOLING	MAIN STEAM	RBCCW	SERVICE WATER	EMERG DIESEL GEN	HVAC	AC POWER	DC POWER
SAFE SHUTDOWN FUNCTION												
REACTIVITY CONTROL	*	*										
PRESSURE CONTROL	*	*	*	*								
INVENTORY CONTROL	*	*	*	*								
DECAY HEAT REMOVAL		*	*	*	*	*						
FRONTLINE SYSTEMS						SUPPORT SYSTEM RELATIONSHIPS						
CHARGING		1									*	*
SAFETY INJECTION											*	*
REACTOR COOLANT SYSTEM											*	*
AUX FEEDWATER											*	*
SHUTDOWN COOLING							*		6		*	*
MAIN STEAM											*	*
RBCCW							*				*	*
SERVICE WATER											*	*
EMERG DIESEL GEN								*	*		*	*
HVAC							4	*			*	*
AC POWER								*	*	3		
DC POWER								5	*	2		
1. RWST provides backup source of water for RCS reactivity control and makeup. 2. DC switchgear rooms will be cooled by the vital chilled water system following an SSE. 3. Required for AC switchgear cooling coils and chillers. 4. Required for CAR units and ESF room cooling coils. 5. Required for DC switchgear room units. 6. Required for. HPSI/LPSI pump rooms which contain the shutdown cooling pumps												

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

5.0 REFERENCES

- 5.1 NUSCo Memorandum, GMB-90-314, dated 12/14/90, C.A. Warner to E.A. Oswald
- 5.2 ABB Impell Project Instruction 0240-099-001, "Identification of USI A-46 Safe Shutdown Paths and Equipment", Rev. 0
- 5.3 ABB Impell Proposal (B/P 24-165) to Northeast Utilities Service Company, dated December 19, 1990.
- 5.4 NRC Generic Letter 87-02, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issues (USI) A-46", February 19, 1987.
- 5.5 "Generic Implementation Procedure (GIP) for Seismic Qualification of Nuclear Plant Equipment", Revision 2, June 1991.
- 5.6 Fault Tree Analysis of the Service Water System at MP2, Calc. No. W2-517-864-RE, Rev. 0.
- 5.7 Millstone Unit 2 FSAR.
- 5.8 NUSCo (Millstone 2) P&IDs:
 - 26002 Sh. 1,2 Main Steam System
 - 26005 Sh. 2,3 Condensate & Auxiliary Feedwater System
 - 26008 Sh. 1,2,3 Service Water
 - 26010 Sh. 1 Fuel Oil System
 - 26014 Sh. 1,2,3 RCS
 - 26015 Sh. 1,2,3 Safety Injection
 - 26017 Sh. 1,2,3 CVCS
 - 26018 Sh. 1 Diesel Generator Starting Air
 - 26022 Sh. 1,2,3,4,5,6 RBCCW
 - 26027 Sh. 1,2,3 HVAC
 - 26028 Sh. 1,4 HVAC
 - 26029 Sh. 1 HVAC
- 5.9 Millstone Unit 2 Procedures
 - AOP 2553 Plant Cooldown Using Natural Circulation
 - AOP 2563 Loss of Instrument Air
 - AOP 2564 Loss of RBCCW
 - AOP 2565 Loss of Service Water
 - EOP 2525 Standard Post Trip Actions
 - EOP 2526 Electrical Emergency
 - EOP 2540 Functional Recovery
 - EOP 2540A Functional Recovery of Reactivity Control

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

EOP 2540B	Functional Recovery of Vital Auxiliaries (AC and DC Power)
EOP 2540C	Functional Recovery of RCS Inventory and Pressure
EOP 2540D	Functional Recovery of Heat Removal
OP 2205	Plant Shutdown
OP 2206	Reactor Shutdown
OP 2304A	Volume Control Portion of the CVCS
OP 2304C	Make-up (Boration and Dilution) Portion of the CVCS
OP 2304E	Charging Pumps
CP 2310	Shutdown Cooling System
OP 2316A	Main Steam
OP 2322	Auxiliary Feedwater System
OP2346A	Emergency Diesel Generators

- 5.10 Millstone Unit 2 Appendix R Sections 1, 1.1, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.3, 6.4 and 10CFR50 App. R Ventilation Systems Review for MP2.
- 5.11 NUSCO Memorandum, ES-ME-94-145, dated 4/13/94, A.G. Lassonde to R. Wells.
- 5.12 NUS Memo ES-SD-95-002, dated 1/4/94, S. Pornprasert to Distribution.

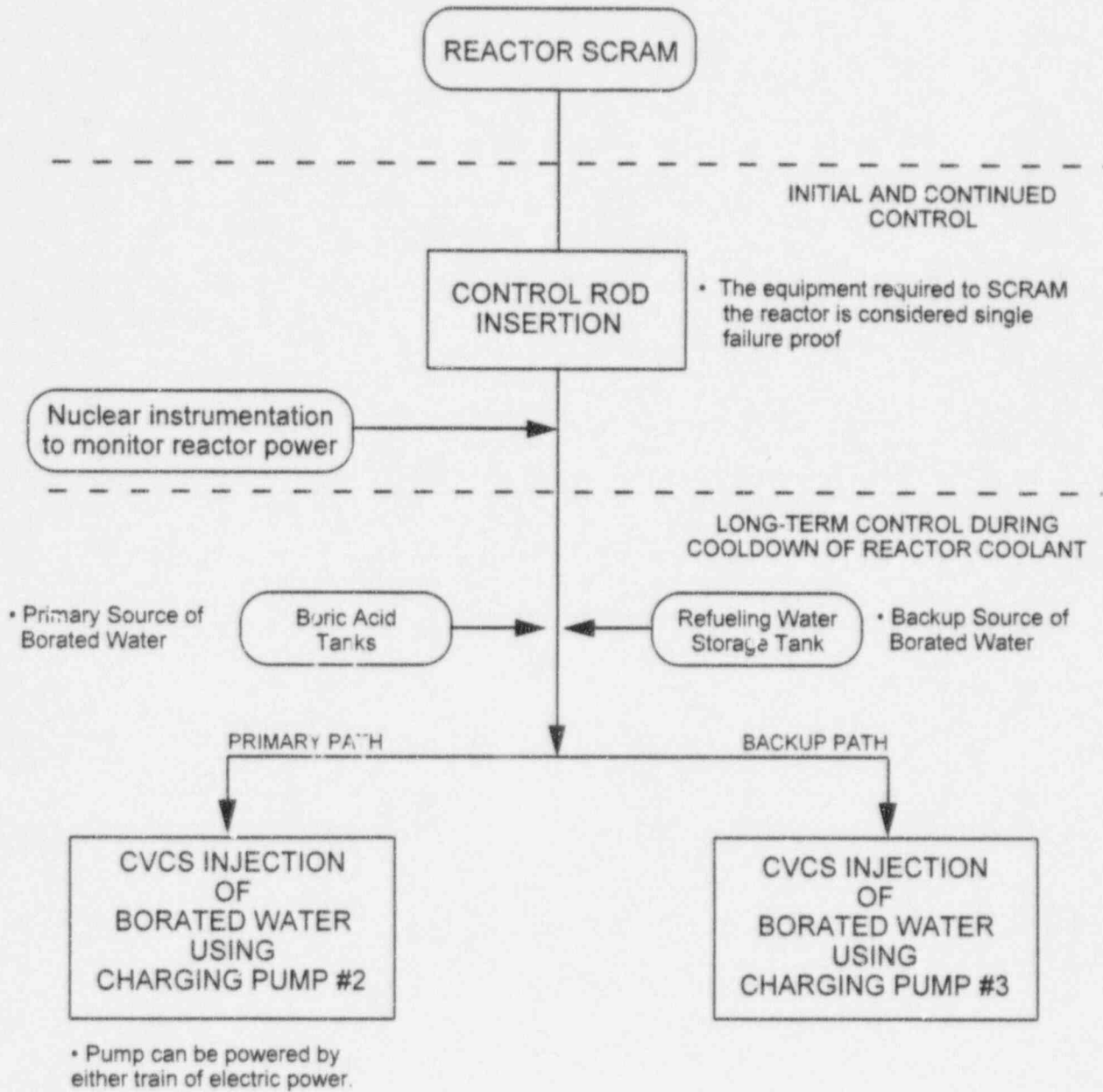
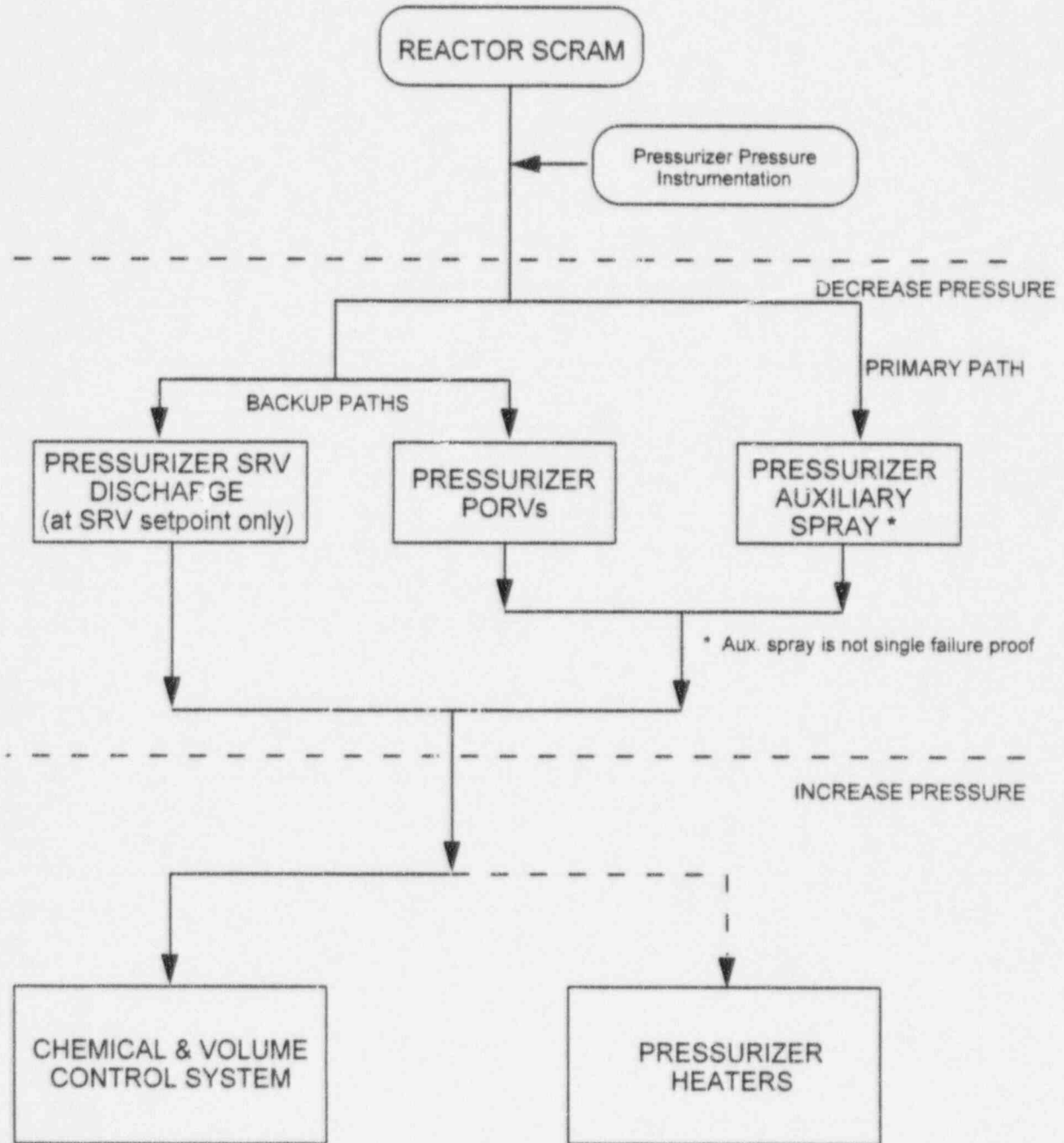


FIGURE 1 - REACTIVITY CONTROL



- Charging Pump #2 (Primary Method)
- Charging Pump #3 (Backup Method)

FIGURE 2 - COOLANT PRESSURE CONTROL

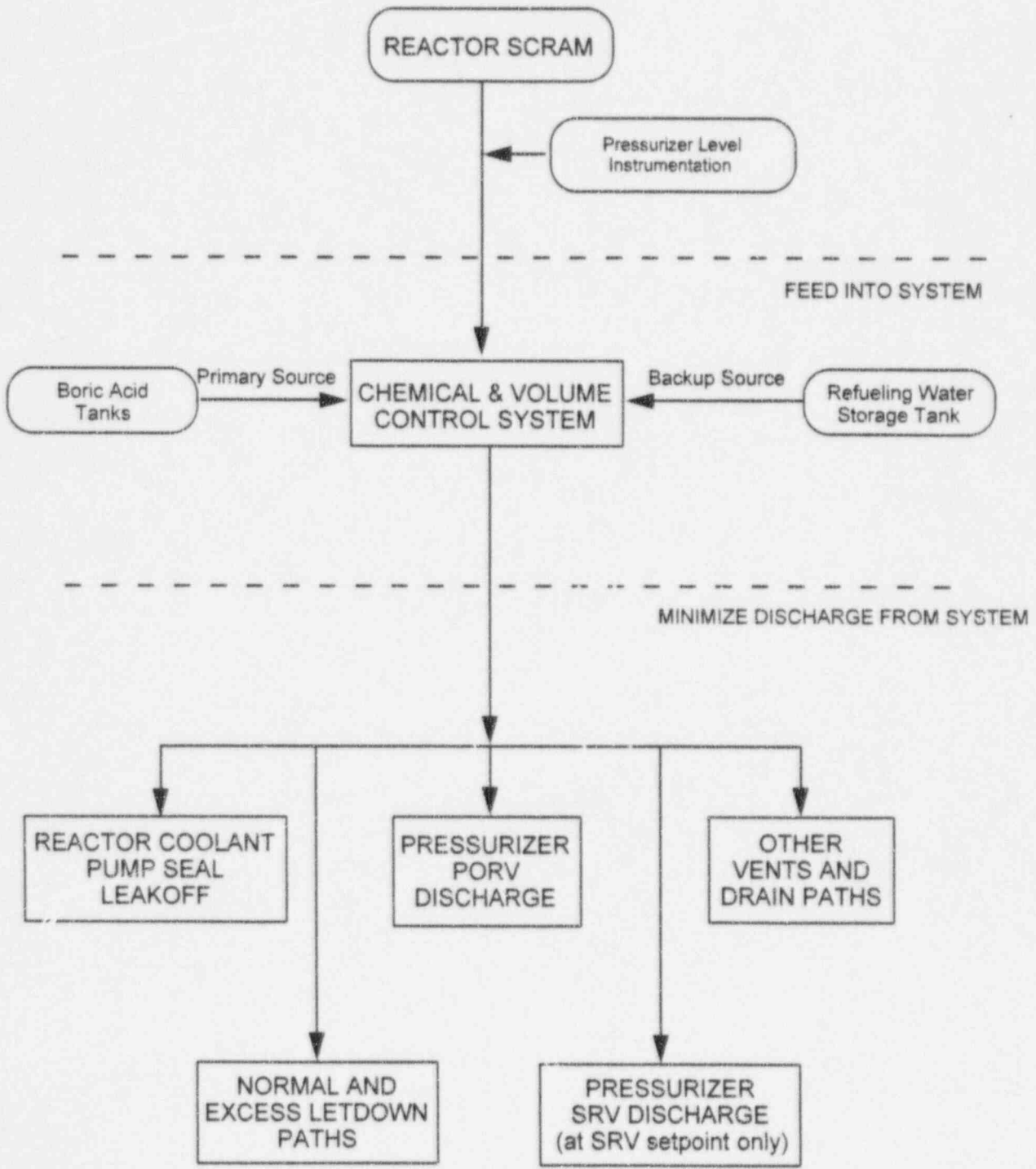


FIGURE 3 - COOLANT INVENTORY CONTROL

PREFERRED SAFE SHUTDOWN PATHS FOR MILLSTONE UNIT 2

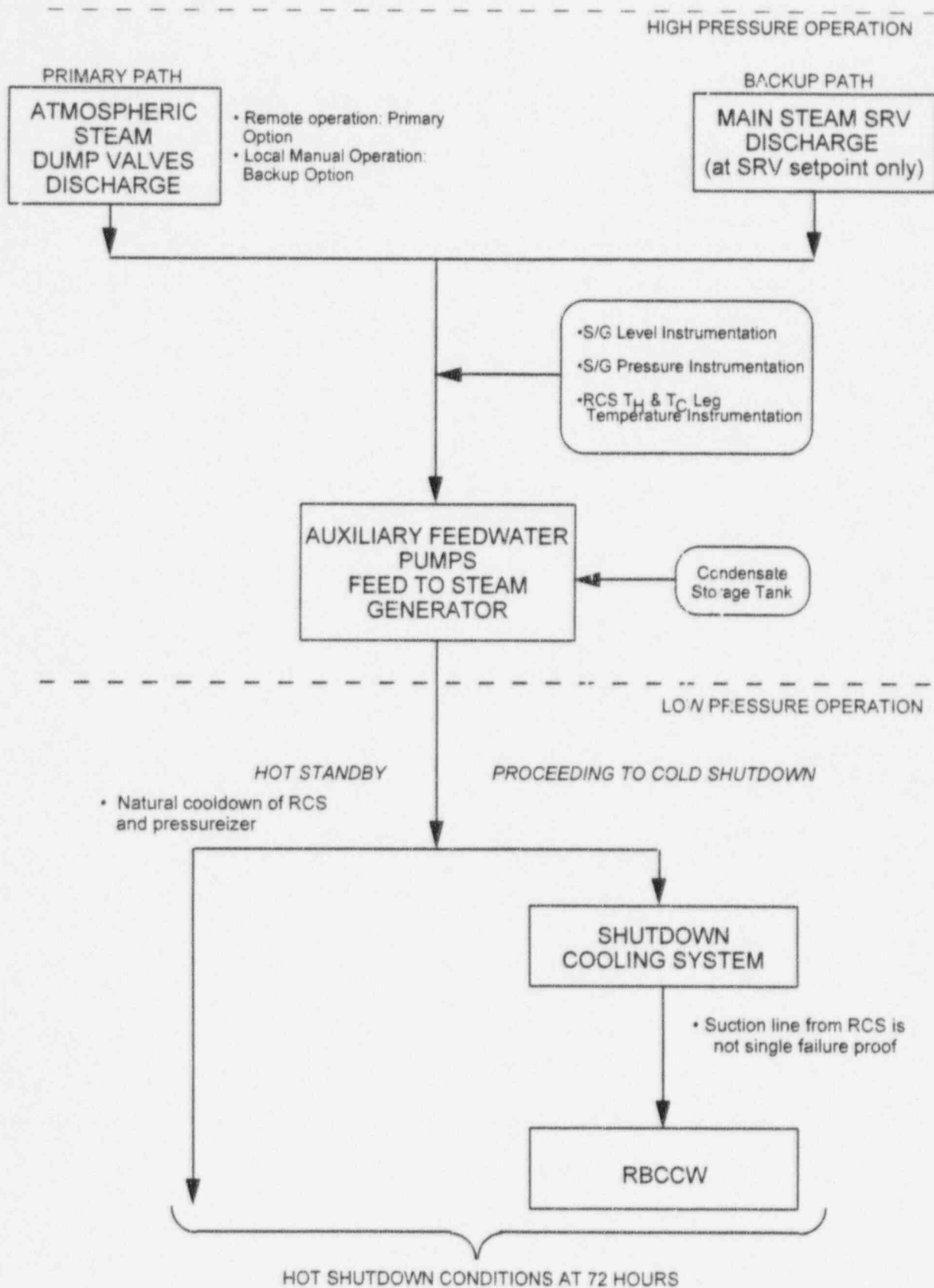


FIGURE 4 - DECAY HEAT REMOVAL

ATTACHMENT A
To VECTRA Report 03-0240-1367

COLOR CODED P&IDs
(35 Sheets)

25203-26002, Sh. 1	25203-26017, Sh. 3
25203-26002, Sh. 2	25203-26018, Sh. 4
25203-26005, Sh. 2	25203-26018, Sh. 5
25203-26005, Sh. 3	25203-26022, Sh. 1
25203-26008, Sh. 1	25203-26022, Sh. 2
25203-26008, Sh. 2	25203-26022, Sh. 3
25203-26008, Sh. 3	25203-26022, Sh. 4
25203-26010, Sh. 1	25203-26022, Sh. 5
25203-26014, Sh. 1	25203-26022, Sh. 6
25203-26014, Sh. 2*	25203-26027, Sh. 1
25203-26014, Sh. 3	25203-26027, Sh. 2
25203-26015, Sh. 1*	25203-26027, Sh. 3
25203-26015, Sh. 2*	25203-26028, Sh. 1
25203-26015, Sh. 3	25203-26028, Sh. 4
25203-26017, Sh. 1*	25203-26029, Sh. 1
25203-26017, Sh. 2	

* Two versions of this P&ID are included with this Attachment since different shutdown function flow paths are shown.

ATTACHMENT B
To VECTRA Report 03-0240-1367

MILLSTONE UNIT 2 SSEL
(67 Pages)

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1		()	RCS	PRESSURIZER HEATERS (PROPORT. CONT. GROUP P-1)	26014, SH 2		19	OFF ON ACTIVE	BUS 22E		Breaker B0504
		()		CONTAINMENT SUMP PUMP				IPEEE			
2		()	RCS	PRESSURIZER HEATERS (PROPORT. CONT. GROUP P-2)	26014, SH 2		19	OFF ON ACTIVE	BUS 22F		Breaker B0609
3	R	()	RBCCW	REACTOR VESSEL SUPPORT CONCRETE COOLING COILS (TYP 3)	26022, SH 6		N/A 20	PASSIVE			
2	7	2-CH-192 ()	CVCS	RWST HEADER OUTLET CONTROL VALVE	26017, SH 3	AB -25'6" CH PMP AREA	SR	CLOSED CL/OP ACTIVE	DV10-BKR 13		FY-192, 2-CH-192-TK
2	0	2-CH-192-TK ()	CVCS	AIR ACCUMULATOR FOR 2-CH-192	26017, SH 3	AB -25'6" CH PMP AREA	S	OPERABLE OPERABLE PASSIVE			
2	7	2-CH-198 ()	RCS	RCP BLEEDOFF CONTROL VALV	26017, SH 2	EB -5'6" WPP PEN	SR	OPEN CLOSED ACTIVE	DV10-BKR 13		
1	7	2-CH-210X ()	CVCS	DILUTION CONTROL VALVE	26017, SH 3	AB -5'6" BAST AREA	SR 15,27	CLOSED CLOSED ACTIVE	NR		
3	8	2-CH-429 ()	CVCS	CHARGING HEADER CTMT ISOLATION VALVE	26017, SH 1	EB -5'6" WPP PEN	R	OPEN OPEN PASSIVE	B61		
3	8	2-CH-501 ()	CVCS	VCT TO CHARGING SYSTEM OUTLET VALVE	26017, SH 1	AB -25'6" DEGASIFIER	SR	OPEN CLOSED ACTIVE	B51		
2	8	2-CH-504 ()	CVCS	RWST TO CHARGING SUCTION	26017, SH 3	AB	R	OPEN OPEN PASSIVE	NR		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

Stephen P. Reichle  12/12/95
Print or Type Name/Title Signature Date

For OPS review, see NGP 5.05 review, documented in NU memo ES-SD-95-002.
Print or Type Name/Title Signature Date

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	7	2-CH-505 ()	RCS	RCP BLEEDOFF OUTSIDE CTMT CONTROL VALVE	26017, SH 2	EB -5'6" WPP PEN	R	CLOSED CLOSED PASSIVE	DV1-BKR 13		
1	7	2-CH-506 ()	RCS	RCP BLEEDOFF INSIDE CTMT CONTROL VALVE	26017, SH 2	RB -3'6" SW CORNER	SR	OPEN CLOSED ACTIVE	DV20-BKR 12		
3	7	2-CH-507 ()	RCS	ISOLATION TO RCP LEAKOFF RV (2-CH-199)	26017, SH 2	RB	SR	OPEN CLOSED ACTIVE	D21		HY-507
1	8	2-CH-508 ()	CVCS	"B" BAT OUTLET GRAVITY FEED	26017, SH 3	AB -5'6" BAST AREA	SR	CLOSED OP/CL ACTIVE	B51		
1	8	2-CH-509 ()	CVCS	"A" BAT OUTLET GRAVITY FEED	26017, SH 3	AB -5'6" BAST AREA	SR	CLOSED OPEN ACTIVE	B51		
2	7	2-CH-510 ()	CVCS	BORIC ACID PUMP RECIRCULATION VALVE	26017, SH 3	AB -5'6" BAST AREA	SR	OPEN CLOSED ACTIVE	NR		
2	7	2-CH-511 ()	CVCS	BORIC ACID PUMP RECIRCULATION VALVE	26017, SH 3	AB -5'6" BAST AREA	SR	OPEN CLOSED ACTIVE	NR		
1	7	2-CH-512 ()	CVCS	VCT MAKEUP CONTROL VALVE	26017, SH 3	AB -5'6" BAT AREA	SR	OP/CL CLOSED ACTIVE	NR		
	8	2-CH-514 ()	CVCS	BORIC ACID PUMP DISCHARGE TO CHARGING PUMP SUCTION	26017, SH 3	AB -5'6" BAT AREA	IPEEE	CLOSED OPEN ACTIVE	B61		
2	8	2-CH-514 ()	CVCS	BORIC ACID PUMP DISCHARGE TO CHARGING PUMP SUCTION	26017, SH 3	AB -5'6" BAT AREA	SR	CLOSED OPEN ACTIVE	B61		
1	7	2-CH-515 ()	RCS	LETDOWN HEADER SIAS ISOLATION	26017, SH 2	RB -3'6" SW CORNER	SR	OPEN CLOSED ACTIVE	DV1-BKR 13		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

Stephen P. Reichle  12/12/95
Print or Type Name/Title Signature Date

For OPS review, see NGP 5.05 review, documented in NU memo ES-SD-95-002.

Print or Type Name/Title Signature Date

PAGE No. 3
DATE 12/12/95

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

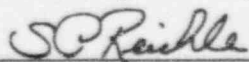
REPORT No. 03-0240-1367
REVISION 2

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	7	2-CH-516 ()	RCS	LETDOWN HEADER CIAS CTMT ISOLATION	26017, SH 2	RB -36" SW CORNER	SR	OPEN CLOSED ACTIVE	DV20-BKR 12		
1	7	2-CH-517 ()	CVCS	AUX SPRAY CHARGING HEADER SUPPLY VALVE	26017, SH 1	RB -36" SW CORNER	S	CLOSED OPEN ACTIVE			HY-517
3	7	2-CH-517 ()	CVCS	AUX SPRAY CHARGING HEADER SUPPLY VALVE	26017, SH 1	RB -36" SW CORNER	R 13	CLOSED CLOSED PASSIVE	NR		
1	0	2-CH-517-TK ()	CVCS	ACCUMULATOR FOR AUX SPRAY SUPPLY VALVE 2-CH-517	26017, SH 1		S	N/A N/A PASSIVE			
2	7	2-CH-518 ()	CVCS	LOOP 2A CHARGING HEADER	26017, SH 1	RB -36" SW CORNER	SR	OPEN OP/CL ACTIVE	DV10		
1	7	2-CH-519 ()	CVCS	LOOP 1A CHARGING HEADER	26017, SH 1	RB -36" SW CORNER	SR	OPEN OP/CL ACTIVE	DV20		
1	8	2-CH-910 ()	CVCS	CHEMICAL METERING PUMP OUTLET SOLENOID VALVE	26017, SH 3	AB -25'6" C CH PMP	R 14.27	CLOSED CLOSED PASSIVE	NR		
		2-CHW-001 ()		'A' CHILL WATER PUMP DISCHARGE VALVE	26027 SH 2	TB 14' 6" CHILLER AREA		IPEEE			
		2-CHW-031 ()		'B' CHILL WATER PUMP DISCHARGE VALVE	26027 SH 2	TB 14' 6" CHILLER AREA		IPEEE			
		2-CHW-032 ()						IPEEE			
1	7	2-CHW-11 ()	HVAC	CHILLED WATER SUPPLY HDR XTIE CONTROL VALVE	26027, SH 2	TB 14' 6" TBCCW PP&HX	SR	OPEN CLOSED ACTIVE	DV10-BKR 6		

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Stephen P. Reichle



12/12/95

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Print or Type Name/Title

Signature

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	7	2-CHW-12 ()	HVAC	CHILLED WATER SUPPLY HDR XTIE CONTROL VALVE	26027, SH 2	TB 14' 6" TBCCW PP&HX	SR 12	OPEN CLOSED ACTIVE	DV20-BKR 6		
1	7	2-CHW-13 ()	HVAC	CHILLED WATER RETURN HDR XTIE CONTROL VALVE	26027, SH 2	TB 14' 6" TBCCW PP&HX	SR	OPEN CLOSED ACTIVE	DV10-BKR 6		
2	7	2-CHW-14 ()	HVAC	CHILLED WATER RETURN HDR XTIE CONTROL VALVE	26027, SH 2	TB 14' 6" TBCCW PP&HX	SR 12	OPEN CLOSED ACTIVE	DV20-BKR 6		
1	7	2-CHW-3 ()	HVAC	CHILLED WATER SUPPLY CONTROL VALVE	26027, SH 2	TB 14' 6" TBCCW PP&HX	SR	CLOSED OPEN ACTIVE	DV10-BKR 6		
2	7	2-CHW-33 ()	HVAC	CHILLED WATER SUPPLY CONTROL VALVE	26027, SH 2	TB 14' 6" TBCCW PP&HX	SR 12	CLOSED OPEN ACTIVE	DV20-BKR 6		
2	7	2-CHW-34 ()	HVAC	CHILLED WATER TEMP CONTROL VALVE	26027, SH 2	AB 14' 6" HALLWAY AREA	-- 29	NO BYPASS NO BYPASS PASSIVE			
1	7	2-CHW-4 ()	HVAC	CHILLED WATER TEMP CONTROL VALVE	26027, SH 2	AB 14' 6" HALLWAY AREA	-- 29	NO BYPASS NO BYPASS PASSIVE			
1	R	2-CN-100 ()	COND	CONDENSATE STORAGE TANK TO HOTWELL LEVEL	26005, SH 3	TB 14'6" NE CORNER	N/A 13	OPEN CLOSED ACTIVE			
1	8	2-CN-241 ()	COND	CONDENSATE STORAGE TANK TO HOTWELL LEVEL CONTROL VALVE	26005, SH 3	TB 14'6" NE CORNER	SR 13	CL/OP CLOSED ACTIVE	D21-BKR 4		
2	8	2-CS-13.1A ()	HPSI	RWST OUTLET HEADER A ISOLATION VALVE	26015, SH 2	YD 4'6" RWST PP CHASE	R	OPEN OPEN PASSIVE	B51		
2	8	2-CS-13.1B ()	HPSI	RWST OUTLET HEADER B ISOLATION VALVE	26015, SH 2	YD 4'6" RWST PP CHASE	R	OPEN OPEN PASSIVE	B61		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR FI ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	R	2-CS-15A ()	CS	CONTAINMENT SUMP HEADER CHECK VALVE	26015, SH 2	EB -25' 6" WPP PEN	N/A 13	PASSIVE			
3	R	2-CS-15B ()	CS	CONTAINMENT SUMP HEADER CHECK VALVE	26015, SH 2	EB -25' 6" WPP PEN	N/A 13	PASSIVE			
		2-CS-16.1A ()		'A' SAFETY INJECTION SUCTION HEADER	26015 SH 2	EB -25' 6" WPP PEN	IPEEE	CLOSED OPEN ACTIVE			
		2-CS-16.1B ()		'B' SAFETY INJECTION SUCTION HEADER	26015 SH 2	EB -25' 6" WPP PEN	IPEEE	CLOSED OPEN ACTIVE			
3	R	2-CS-2A ()	CS	CONTAINMENT SPRAY PUMP P-43A DISCHARGE CHECK VALVE	26015, SH 1	AB -45' 6" 'A' SAFEGUARDS	N/A 13	CLOSED CLOSED PASSIVE			
3	R	2-CS-2B ()	CS	CONTAINMENT SPRAY PUMP P-43B DISCHARGE CHECK VALVE	26015, SH 1	AB -45' 6" 'B' SAFEGUARDS	N/A 13	CLOSED CLOSED PASSIVE			
	8	2-CS-4.1A ()	CS	"A" CTMT SPRAY HDR ISO VALVE	26015, SH 1	EB -5' 5" WPP PEN	IPEEE	CLOSED OPEN ACTIVE	B51		
1	8	2-CS-4.1A ()	CS	"A" CONTAINMENT SPRAY HEADER ISOLATION VALVE ASSEMBLY	26015, SH 1	EB -5' 6" WPP PEN	R	CLOSED CLOSED PASSIVE	B51		
1	8	2-CS-4.1B ()	CS	"B" CTMT SPRAY HDR ISO VALVE	26015, SH 1	EB -5' 6" E PP PEN	R	CLOSED CLOSED PASSIVE	B61		
	8	2-CS-4.1B ()	CS	"B" CONTAINMENT SPRAY HEADER ISOLATION VALVE ASSEMBLY	26015, SH 1	EB -5' 6" E PP PEN	IPEEE	CLOSED OPEN ACTIVE	B61		
1	8	2-DG-27A ()	DG	"A" DIESEL ENGINE STARTING AIR SOV	26018, SH 1	WH 14' 6" DG ROOMS	BR	CLOSED OPEN ACTIVE	DV10-BKR 20		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	8	2-DG-27B ()	DG	"B" DIESEL ENGINE STARTING SOV	AIR26018, SH 1	WH 14'6" DG ROOMS	BR	CLOSED OPEN ACTIVE	DV20-BKR 20		
1	7	2-DG-91A ()	DG	"A" DIESEL ENGINE STARTING AOV	26018, SH 1	WH 14'6" DG ROOMS	B 1	CLOSED OPEN ACTIVE			2-DG-95A
2	7	2-DG-91B ()	DG	"B" DIESEL ENGINE STARTING AOV	26018, SH 1	WH 14'6" DG ROOMS	B 1	CLOSED OPEN ACTIVE			2-DG-95B
1	7	2-DG-92A ()	DG	"A" DIESEL ENGINE STARTING AOV	26018, SH 1	WH 14'6" DG ROOMS	B 1	CLOSED OPEN ACTIVE			2-DG-96A
2	7	2-DG-92B ()	DG	"B" DIESEL ENGINE STARTING AOV	26018, SH 1	WH 14'6" DG ROOMS	B 1	CLOSED OPEN ACTIVE			2-DG-96B
1	R	2-DG-93A ()	DG	CONTROL AIR 2-DG-91A SUPPLY VALVE	26018, SH 1	WH 14'6" DG ROOMS	-	CLOSED OPEN ACTIVE			
2	R	2-DG-93B ()	DG	CONTROL AIR 2-DG-91B SUPPLY VALVE	26018, SH 1	WH 14'6" DG ROOMS	-	CLOSED OPEN ACTIVE			
1	R	2-DG-94A ()	DG	CONTROL AIR 2-DG-92A SUPPLY VALVE	26018, SH 1	WH 14'6" DG ROOMS	-	CLOSED OPEN ACTIVE			
2	R	2-DG-94B ()	DG	CONTROL AIR 2-DG-92B SUPPLY VALVE	26018, SH 1	WH 14'6" DG ROOMS	-	CLOSED OPEN ACTIVE			
1	8	2-DG-95A (HY-8170)	DG	CONTROL AIR 2-DG-91A SUPPLY SOV	26018, SH 1	WH 14'6" DG ROOMS	BR	CLOSED OPEN ACTIVE	DV10-BKR 20		
2	7	2-DG-95B (HY-8172)	DG	CONTROL AIR 2-DG-91B SUPPLY SOV	26018, SH 1	WH 14'6" DG ROOMS	BR	CLOSED OPEN ACTIVE	DV20-BKR 20		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	8	2-DG-96A (HY-8171)	DG	CONTROL AIR 2-DG-92A SUPPLY SOV	26018, SH 1	WH 14"6" DG ROOMS	BR	CLOSED OPEN ACTIVE	DV10-BKR 20		
2	8	2-DG-96B (HY-8173)	DG	CONTROL AIR 2-DG-92B SUPPLY SOV	26018, SH 1	WH 14"6" DG ROOMS	BR	CLOSED OPEN ACTIVE	DV20-BKR 20		
ZOP	R	2-FIRE-94A ()	COND	EMERGENCY SUPPLY TO AUXILIARY FEEDWATER PUMP "A" VALVE	26005, SH 3	TB 16" ELEC AUX FD PP	-	CLOSED OPEN ACTIVE			
ZOP	R	2-FIRE-94B ()	AFW	EMERGENCY SUPPLY TO AUXILIARY FEEDWATER PUMP "B" VALVE	26005, SH 3	TB 16" ELEC AUX FD PP	-	CLOSED OPEN ACTIVE			
1OP	R	2-FIRE-94C ()	AFW	EMERGENCY SUPPLY TO TURBINE AUX FEED PUMP	26005, SH 3	TB 16" TERRY AUX FD PMP	-	CLOSED OPEN ACTIVE			
3	7	2-FW-12A ()	AFW	#1 S/G AUXILIARY FEED SUPPLY AIR ASSIST CHECK VALVE	26005, SH 2	EB 38"6" E PP PEN	SR	CLOSED OPEN ACTIVE	DV10-BKR 18		
3	7	2-FW-12B ()	AFW	#2 S/G AUX FEED SUPPLY AIR ASSIST CHECK VALVE	26005, SH 2	EB 38"6" W PP PEN	SR	CLOSED OPEN ACTIVE	DV20-BKR 18		
3	7	2-FW-43A ()	AFW	#1 STEAM GENERATOR AUX FEEDWATER REGULATING VALVE	26005, SH 3	TB 14"6" AUX FD VLV STA	SR 21.28	CLOSED OPEN ACTIVE	DV10-BKR 18		2-FW-43A-TK
3	0	2-FW-43A-TK ()	AFW	BACKUP AIR CYLINDER FOR AFW (LATER) VALVE 2-FW-43A			S	OPERABLE OPERABLE PASSIVE			
3	7	2-FW-43B ()	AFW	#2 STEAM GENERATOR AUX FDWTR REGULATING VALVE	26005, SH 3	TB 14"6" AUX FD VLV STA	SR 21.28	CLOSED OPEN ACTIVE	DV20-BKR 8, 18		2-FW-43B-TK
3	0	2-FW-43B-TK ()	AFW	BACKUP AIR CYLINDER FOR AFW (LATER) VALVE 2-FW-43B			S	OPERABLE OPERABLE PASSIVE			

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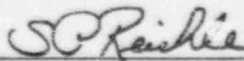
MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	8	2-FW-44	AFW	AUX FEEDWATER PUMP DISCHARGE HEADER XTIE VALVE	26005, SH 3	TB 14"6" AUX FD VLV STA	R	OPEN OPEN PASSIVE	B62		
		()									
3	8	2-FW-44	AFW	AUX FEEDWATER PUMP DISCHARGE HEADER XTIE VALVE	26005, SH 3	TB 14"6" AUX FD VLV STA	IPEEE	OPEN OP/CL ACTIVE	B62		
		()									
3OP	R	2-FW-56A	AFW	AUX FEED REGULATOR BYPASS VALVE	26005, SH 3	TB 14"6" EAST SIDE CONDENSER	-	CLOSED OPEN ACTIVE			
		()									
3OP	R	2-FW-56B	AFW	AUX FEED REGULATOR BYPASS VALVE	26005, SH 3	TB 14"6" EAST SIDE CONDENSER	-	CLOSED OPEN ACTIVE			
		()									
3	7	2-FW-5A	AFW	#1 S/G MAIN FEED SUPPLY AIR ASSIST CHECK VALVE ASSEMBLY	26005, SH 2	EB 38"6" E PP PEN	SR	OPEN CLOSED ACTIVE	DV10-BKR 18		
		()									
3	7	2-FW-5B	AFW	#2 S/G MAIN FEED SUPPLY AIR ASSIST CHECK VALVE ASSEMBLY	26005, SH 2	EB 38"6" W PP PEN	SR	OPEN CLOSED ACTIVE	DV20-BKR 18		
		()									
1	0	2-HV-1	HVAC	'A' CAR FAN DISCHARGE DAMPER	26028, SH. 1	RB 27"0"	B	OPEN OPEN PASSIVE	NO		
		()									
1	0	2-HV-139A	HVAC	VENTILATION DAMPER, INLET TO FAN F112A	26029, SH 1	AB 14' 6" A BATT RM	S	OPEN OPEN PASSIVE			
		()									
2	0	2-HV-139B	HVAC	VENTILATION DAMPER, INLET TO FAN F112B	26029, SH 1	AB 14' 6" B BATT RM	S	OPEN OPEN PASSIVE			
		()									
1	0	2-HV-140A	HVAC	VENTILATION/FIRE DAMPER TO FANS F112A&B	26029, SH 1	AB 14' 6" PLEN BX	S g	OPEN OPEN PASSIVE			
		()									
2	0	2-HV-140B	HVAC	VENTILATION DAMPER	26029, SH 1	AB 14' 6" PLEN BX F112A&B	S g	OPEN OPEN PASSIVE			
		()									

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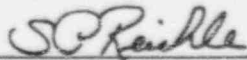
MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	0	2-HV-141 ()	HVAC	WEST DC SWGR ROOM SUPPLY DAMPER	26029, SH 1	AB 14' 6" B DC SWGR	S	OPEN OPEN PASSIVE			
1	0	2-HV-142 ()	HVAC	VENTILATION DAMPER	26029, SH 1	AB 14' 6" B DC SWGR	S	OPEN OPEN PASSIVE			
1	0	2-HV-145A ()	HVAC	VENTILATION DAMPER	26029, SH 1	AB 14' 6" A BATT RM	S 9	OPEN OPEN PASSIVE			
2	0	2-HV-145B ()	HVAC	VENTILATION DAMPER	26029, SH 1	AB 14' 6" A BATT RM	S 9	OPEN OPEN PASSIVE			
1	0	2-HV-146 ()	HVAC	VENTILATION DAMPER	26029, SH 1	AB 14' 6" BTWN A&B BATT	S 9	OPEN OPEN PASSIVE			
1	0	2-HV-147 ()	HVAC	VENTILATION DAMPER	26029, SH 1	AB 14' 6" BTWN A&B BATT	S 9	OPEN OPEN PASSIVE			
2	0	2-HV-155A ()	HVAC	WEST DC SWGR ROOM EXHAUST/FIRE DAMPER	26029, SH 1	AB 14' 6" B DC SWGR	S	OPEN OPEN PASSIVE			
1	0	2-HV-155B ()	HVAC	EAST DC SWGR ROOM EXHAUST/FIRE DAMPER	26029, SH 1	AB 14' 6" A CEDM MG	S	OPEN OPEN PASSIVE			
1	0	2-HV-155C ()	HVAC	EAST DC SWGR ROOM SUPPLY/FIRE DAMPER	26029, SH 1	AB 14' 6" A DC SWGR	S	OPEN OPEN PASSIVE			
2	0	2-HV-156A ()	HVAC	WEST DC SWGR ROOM SUPPLY/FIRE DAMPER	26029, SH 1	AB 14' 6" B DC SWGR	S	OPEN OPEN PASSIVE			
1	0	2-HV-156B ()	HVAC	EAST DC SWGR ROOM SUPPLY/FIRE DAMPER	26029, SH 1	AB 14' 6" A CEDM	S	OPEN OPEN PASSIVE			

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TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	0	2-HV-157A ()	HVAC	WEST DC SWGR ROOM SUPPLY/FIRE DAMPER	26029, SH 1	AB 14' 6" B DC SWGR	S	OPEN OPEN PASSIVE			
1	0	2-HV-157B ()	HVAC	EAST DC SWGR ROOM SUPPLY/FIRE DAMPER	26029, SH 1	AB 14' 6" A DC SWGR	S	OPEN OPEN PASSIVE			
2	0	2-HV-157C ()	HVAC	WESTST DC SWGR ROOM SUPPLY/FIRE DAMPER	26029, SH 1	AB 14' 6" A SWGR	S	OPEN OPEN PASSIVE			
1	0	2-HV-158 ()	HVAC	CABLE VAULT TO EAST BATTERY ROOM VENTILATION/FIRE DAMPER	26029, SH 1	AB 25' 6" A BATT RM	S 9	OPEN OPEN PASSIVE			
2	0	2-HV-159 ()	HVAC	CABLE VAULT TO WEST BATTERY ROOM VENTILATION/FIRE DAMPER	26029, SH 1	AB 25' 6" B BATT RM	S 9	OPEN OPEN PASSIVE			
2	0	2-HV-2 ()	HVAC	'B' CAR FAN DISCHARGE DAMPER	26028, SH. 1	RB 27' 0"	B	OPEN OPEN PASSIVE	NO		
1	0	2-HV-203A (HV-8009)	HVAC	CONTROL ROOM VENTILATION SUPPLY DAMPER	26027, SH 3	AB 36' 6" CONTROL RM	R	OPEN OPEN PASSIVE	B52		
2	0	2-HV-203B (HV-8010)	HVAC	CONTROL ROOM VENTILATION SUPPLY DAMPER	26027, SH 3	AB 36' 6" CONTROL RM	SR	CLOSED OPEN ACTIVE	B62		
1	0	2-HV-204A ()	HVAC	CONTROL ROOM VENTILATION SUPPLY/FIRE DAMPER	26027, SH 3	AB 36' 6" CONTROL RM	S	OPEN OPEN PASSIVE			
2	0	2-HV-204B ()	HVAC	CONTROL ROOM VENTILATION SUPPLY/FIRE DAMPER	26027, SH 3	AB 36' 6" CONTROL RM	S	OPEN OPEN PASSIVE			
1	0	2-HV-206A (HV-8001)	HVAC	'A' CONTROL RM EXH FAN F31A DISCH DAMPER	26027, SH. 3	AB 36' 6" CR HVAC RM	SR	OP/CL OPEN ACTIVE	B52		

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PAGE No. 11
DATE 12/12/95

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

REPORT No. 03-0240-1367
REVISION 2

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	0	2-HV-206B (HV-8000)	HVAC	'B' CONTROL RM EXH FAN F31A DISCH DAMPER	26027, SH 3	AB 36' 6" CR HVAC RM	SR	OP/CL OPEN ACTIVE	B62		
3	0	2-HV-209 (HV-8003C)	HVAC	CONTROL RM EXH FAN RECIRC DAMPER	26027, SH 3	AB 36' 6" CR HVAC RM	SR	OP/CL OPEN ACTIVE			
1	8	2-HV-214A (HV-9779A)	HVAC	CONTROL ROOM 'A' REFRIGERATION CYCLE CLG COIL INLET VALVE	26027, SH 3	AB 36' 6" CONTROL RM	SR 12	OP/CL OP/CL ACTIVE	B52		
1	8	2-HV-214B (HV-9779B)	HVAC	'CONTROL ROOM A' REFRIGERATION CYCLE CLG COIL INLET VALVE	26027, SH 3	AB 36' 6" CONTROL RM	SR 12	OP/CL OP/CL ACTIVE	B52		
2	8	2-HV-215A (HV-9780A)	HVAC	CONTROL ROOM 'B' REFRIGERATION CYCLE CLG COIL INLET VALVE	26027, SH 3	AB 35' 6" CONTROL RM	SR 12	OP/CL OP/CL ACTIVE	B62		
2	8	2-HV-215B (HV-9780B)	HVAC	CONTROL ROOM 'B' REFRIGERATION CYCLE CLG COIL INLET VALVE	26027, SH 3	AB 36' 6" CONTROL RM	SR 12	OP/CL OP/CL ACTIVE	B62		
2	0	2-HV-253B (HV-8014B)	HVAC	OUTSIDE AIR TO D/G ROOM FAN F27 VENTILATION DAMPER	26027, SH 1	WH 14' 6" B D/G	SR	OPEN CLOSED ACTIVE	D31-BKR 4		
1	0	2-HV-255A (HV-8296)	HVAC	"A" D/G ROOM EXHAUST VENTILATION DAMPER	26027, SH 1	WH 14' 6" A D/G	SR	CLOSED OPEN ACTIVE	B51		
2	0	2-HV-255B (HV-8298)	HVAC	"B" D/G ROOM EXHAUST VENTILATION DAMPER	26027, SH 1	WH 14' 6" B D/G	SR	CLOSED OPEN ACTIVE	B61		
1	0	2-HV-256A (TV-8297A)	HVAC	"A" D/G ROOM INTAKE VENTILATION DAMPER	26027, SH 1	WH 14' 6" A D/G	S	CLOSED OPEN ACTIVE			
2	0	2-HV-256B (TV-8299A)	HVAC	"B" D/G ROOM INTAKE VENTILATION DAMPER	26027, SH 1	WH 14' 6" B D/G	S	CLOSED OPEN ACTIVE			

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	0	2-HV-257A (TV-8297B)	HVAC	"A" D/G ROOM RECIRC VENTILATION DAMPER	26027, SH 1	WH 14' 6" A D/G	S	OPEN CLOSED ACTIVE			
2	0	2-HV-257B (TV-8299B)	HVAC	"B" D/G ROOM RECIRC VENTILATION DAMPER	26027, SH 1	WH 14' 6" B D/G	S	OPEN CLOSED ACTIVE			
1	0	2-HV-261 ()	HVAC	LOWER SWGR ROOM FIRE/VENTILATION DAMPER	26027, SH 1	AB 45' 0" TB CABLE VAULT	S	OPEN OPEN PASSIVE			
1	0	2-HV-262 ()	HVAC	LOWER SWGR ROOM VENTILATION DAMPER	26027, SH 1	AB 45' 0" TB CABLE VAULT	S	OPEN OPEN PASSIVE			
1	0	2-HV-264 ()	HVAC	LOWER SWGR ROOM FIRE/VENTILATION DAMPER	26027, SH 1	AB 45' 0" TB CABLE VAULT	S	OPEN OPEN PASSIVE			
2	0	2-HV-265 ()	HVAC	EAST 480V SWGR ROOM FIRE/VENTILATION DAMPER	26027, SH 1	AB 56' 6" 6.9 KV SWGR	S	OPEN OPEN PASSIVE			
2	0	2-HV-274 (HV-8843)	HVAC	EAST 480V SWGR ROOM FIRE/VENTILATION DAMPER	26027, SH 1	AB 56' 6" 6.9 KV SWGR	SR	OPEN OPEN PASSIVE	B61		
2	0	2-HV-278 ()	HVAC	UPPER SWGR ROOM VENTILATION DAMPER	26027, SH 1	AB 56' 6" 6.9 KV SWGR	S	OPEN OPEN PASSIVE			
1	0	2-HV-279 ()	HVAC	LOWER SWGR ROOM VENTILATION DAMPER	26027, SH 1	AB 45' 0" TB CABLE VAULT	S	OPEN OPEN PASSIVE			
1	0	2-HV-3 ()	HVAC	"C" CAR FAN DISCHARGE DAMPER	26028, SH. 1	RB -10' 6"	S	OPEN OPEN PASSIVE			NO
2	8	2-HV-313 (HV-3312B)	HVAC	ESF ROOM "C" EXHAUST VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 5.18	THROTTLED THROTTLED PASSIVE			

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Stephen P. Reichle  12/12/95
Print or Type Name/Title Signature Date

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	8	2-HV-314 (HV-3312A)	HVAC	ESF ROOM "B" EXHAUST VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 5,18	THROTTLED THROTTLED PASSIVE			
2	8	2-HV-315 (HV-3312C)	HVAC	ESF ROOM "B" SUPPLY VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 6,18	THROTTLED THROTTLED PASSIVE			
2	8	2-HV-316 (HV-3312D)	HVAC	ESF ROOM "C" SUPPLY VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 6,18	THROTTLED THROTTLED PASSIVE			
1	8	2-HV-325 (HV-8306B)	HVAC	ESF ROOM "C" EXHAUST VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 7,18	THROTTLED THROTTLED PASSIVE			
1	8	2-HV-326 (HV-8306A)	HVAC	ESF ROOM "A" EXHAUST VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 7,18	THROTTLED THROTTLED PASSIVE			
1	8	2-HV-327 (HV-8306D)	HVAC	ESF ROOM "C" SUPPLY VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 8,18	THROTTLED THROTTLED PASSIVE			
1	8	2-HV-328 (HV-8306C)	HVAC	ESF ROOM "A" SUPPLY VENTILATION DAMPER	26028, SH 4	AB -45' 6" A SAFEGUARDS	-- 8,18	THROTTLED THROTTLED PASSIVE			
2	0	2-HV-333 ()	HVAC	EAST 480V SWGR ROOM SUPPLY FIRE/VENTILATION DAMPER	26029, SH 1	AB 36' 6" EAST 480V	S	OPEN OPEN PASSIVE			
2	0	2-HV-4 ()	HVAC	'D' CAR FAN DISCHARGE DAMPER	26028, SH. 1	RB -10'6"	B	OPEN OPEN PASSIVE	NO		
1	8	2-HV-509 ()	HVAC	LIQUID REFRIGERANT CONTROL VALVE - CHILLER X-169A	26027, SH 2		BR 12	CLOSED OPEN ACTIVE	B52		
2	8	2-HV-510 ()	HVAC	LIQUID REFRIGERANT CONTROL VALVE - CHILLER X-169B	26027, SH 2		BR 12	CLOSED OPEN ACTIVE	B62		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	7	2-MS-190A ()	MS	#1 STEAM GENERATOR ATMOSPHERIC DUMP CONTROL VALVE	26002, SH 1	EB 54' 6" E PP PEN	SR	CLOSED OP/CL ACTIVE	D11-BKR 4		
2	7	2-MS-190B ()	MS	#2 STEAM GENERATOR ATMOSPHERIC DUMP CONTROL VALVE	26002, SH 1	EB 54' 6" W PP PEN	SR	CLOSED OP/CL ACTIVE	D21-BKR 4		
1	8	2-MS-201 (HV-4191)	MS	#1 STEAM GENERATOR TO TERRY TURBINE STEAM SUPPLY VALVE	26002, SH 1	EB 38"6" E PP PEN	R	OPEN OPEN PASSIVE	NR		
2	8	2-MS-202 (HV-4189)	MS	#2 STEAM GENERATOR TO TERRY TURBINE STEAM SUPPLY VALVE	26002, SH 1	EB 38"6" W PP PEN	R	OPEN OPEN PASSIVE	NR		
1	7	2-MS-220A ()	MS	STEAM GENERATOR SURFACE BLOWDOWN CONTROL VALVE	26002, SH 2	EB -5"6" E PP PEN	SR	OPEN CLOSED ACTIVE	DV10-BKR 18		
1	7	2-MS-220B ()	MS	STEAM GENERATOR SURFACE BLOWDOWN CONTROL VALVE	26002, SH 2	EB -5"6" E PP PEN	SR	OPEN CLOSED ACTIVE	DV20-BKR 18		
20P	7	2-MS-239 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54"6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			
20P	7	2-MS-240 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54"6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			
20P	7	2-MS-241 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54"6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			
20P	7	2-MS-242 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54"6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			
20P	7	2-MS-243 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54"6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER RECD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
20P	7	2-MS-244 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			
20P	7	2-MS-245 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			
20P	7	2-MS-246 ()	MS	#2 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" W SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-247 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-248 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-249 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-250 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-251 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-252 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-253 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			
10P	7	2-MS-254 ()	MS	#1 STEAM GENERATOR SAFETY RELIEF VALVE	26002, SH 1	EB 54'6" E SRV PLATFORM	S	CLOSED OPEN ACTIVE			

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	8	2-MS-289 ()	MS	#1 STEAM GENERATOR HEADER DRAIN CONTROL VALVE	26002, SH 1	EB 38'6" E PP PEN	R	CLOSED CLOSED PASSIVE	DV11-BKR 11		
2	8	2-MS-294 ()	MS	#2 STEAM GENERATOR HEADER DRAIN CONTROL VALVE	26002, SH 1	EB 38'6" W PP PEN	R	CLOSED CLOSED PASSIVE	D21-BKR 11		
2	R	2-MS-406 ()	MS	#1 STEAM GENERATOR BLOWDOWN ISOLATION VALVE	26002, SH 2	EB 5'6" E PP PEN	- 13	OPEN CLOSED ACTIVE			
2	R	2-MS-411 ()	MS	#2 STEAM GENERATOR BLOWDOWN ISOLATION VALVE	26002, SH 2	EB -5'6" E PP PEN	- 13	OPEN CLOSED ACTIVE			
1	7	2-MS-64A (Z1) ()	MS	#1 STEAM GENERATOR MAIN STEAM ISOLATION VALVE	26002, SH 1	EB 54' 6" E PP PEN	SR	OPEN CLOSED ACTIVE	DV10-BKR 18		
1	7	2-MS-64A (Z2) ()	MS	#1 STEAM GENERATOR MAIN STEAM ISOLATION VALVE	26002, SH 1	EB 54' 6" E PP PEN	SR	OPEN CLOSED ACTIVE	DV10-BKR 18		
2	7	2-MS-64B (Z1) ()	MS	#2 STEAM GENERATOR MAIN STEAM ISOLATION VALVE	26002, SH 1	EB 54' 6" W PP PEN	SR	OPEN CLOSED ACTIVE	DV10-BKR 18		
2	7	2-MS-64B (Z2) ()	MS	#2 STEAM GENERATOR MAIN STEAM ISOLATION VALVE	26002, SH 1	EB 54' 6" W PP PEN	SR	OPEN CLOSED ACTIVE	DV10-BKR 18		
1	8	2-MS-65A ()	MS	#1 STEAM GENERATOR MSIV BYPASS VALVE	26002, SH 1	EB 38'6" E PP PEN	R	CLOSED CLOSED PASSIVE	B52		
2	8	2-MS-65B ()	MS	#2 STEAM GENERATOR MSIV BYPASS VALVE	26002, SH 1	EB 38'6" W PP PEN	R	CLOSED CLOSED PASSIVE	B62		
3	7	2-RB-13.1A ()	RBCCW	"A" SHUTDOWN COOLING HEAT EXCHANGER OUTLET STOP VALVE	26022, SH 2	AB -45'6" SDC HX AREA	SR	CLOSED OPEN ACTIVE	DV10-BKR 14		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	7	2-RB-13.1B ()	RBCCW	"B" SHUTDOWN COOLING HEAT EXCHANGER OUTLET STOP VALVE	26022, SH 2	AB -45'6" SDC HX AREA	SR	CLOSED OPEN ACTIVE	DV20-BKR 14		
		2-RB-210 ()	RBCCW	DEGASIFIER EFFLUENT COOLER RETURN	26022 SH 5	EB -5' 6" WPP PEN	IPEEE	CLOSED ACTIVE			
1	8	2-RB-211A ()	RBCCW	RBCCW PUMP 11A HEADER "A" SUCTION VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R	OPEN OPEN PASSIVE	DV10-BKR 14		
1	8	2-RB-211B ()	RBCCW	RBCCW PUMP 11A HEADER "B" SUCTION VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R	CLOSED CLOSED PASSIVE	DV20-BKR 14		
10P	8	2-RB-211C ()	RBCCW	RBCCW PUMP 11B HEADER "A" SUCTION VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R	OP/CL OP/CL PASSIVE	DV10-BKR 14		
10P	8	2-RB-211D ()	RBCCW	RBCCW PUMP 11B HEADER "B" SUCTION VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R	CL/OP CL/OP PASSIVE	DV20-BKR 14		
2	8	2-RB-211E ()	RBCCW	RBCCW PUMP 11C HEADER "A" SUCTION VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R	OPEN OPEN PASSIVE	DV10-BKR 14		
2	8	2-RB-211F ()	RBCCW	RBCCW PUMP 11C HEADER "B" SUCTION VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R	CLOSED CLOSED PASSIVE	DV20-BKR 14		
3	7	2-RB-240 ()	RBCCW	PRIMARY DRAIN TANK/QUENCH TANK FLOW CONTROL VALVE	26022, SH 4	RB -22'6" NE CORNER	R 21	OP/CL CLOSED PASSIVE	D11-BKR 11		
1	7	2-RB-28.1A ()	RBCCW	CTMT AIR RECIRC COOLER "A" INLET VALVE	26022, SH 5	EB -5'6" E PP PEN	R	OPEN OPEN PASSIVE	DV10-BKR 17		
2	7	2-RB-28.1B ()	RBCCW	CTMT AIR RECIRC COOLER "B" INLET VALVE	26022, SH 5	EB -5'6" WPP PEN	R	OPEN OPEN PASSIVE	DV20-BKR 17		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	7	2-RB-28.1C ()	RBCCW	CTMT AIR RECIRC COOLER "C" INLET VALVE	26022, SH 5	EB -56" E PP PEN	R	OPEN OPEN PASSIVE	DV10-BKR 17		
2	7	2-RB-28.1D ()	RBCCW	CTMT AIR RECIRC COOLING "D" RBCCW INLET VALVE	26022, SH 5	EB -56" W PP PEN	R	OPEN OPEN PASSIVE	DV20-BKR 17		
10P	7	2-RB-28.2A ()	RBCCW	CTMT AIR RECIRC COOLING "A" RBCCW NORMAL OUTLET VALVE	26022, SH 5	EB -56" E PP PEN	R	OPEN OPEN PASSIVE	D11-BKR 3		
20P	7	2-RB-28.2B ()	RBCCW	CTMT AIR RECIRC COOLING "B" RBCCW NORMAL OUTLET VALVE	26022, SH 5	EB -56" W PP PEN	R	OPEN OPEN PASSIVE	D21-BKR 3		
10P	7	2-RB-28.2C ()	RBCCW	CTMT AIR RECIRC COOLING "C" RBCCW NORMAL OUTLET VALVE	26022, SH 5	EB -56" E PP PEN	R	OPEN OPEN PASSIVE	D11-BKR 3		
20P	7	2-RB-28.2D ()	RBCCW	CTMT AIR RECIRC COOLING "D" RBCCW NORMAL OUTLET VALVE	26022, SH 5	EB -56" W PP PEN	R	OPEN OPEN PASSIVE	D21-BKR 3		
1	7	2-RB-28.3A ()	RBCCW	CTMT AIR RECIRC COOLING "A" RBCCW EMERGENCY OUTLET VALVE	26022, SH 5	EB -56" E PP PEN	R	OPEN OPEN PASSIVE	DV10-BKR 17		
2	7	2-RB-28.3B ()	RBCCW	CTMT AIR RECIRC COOLING "B" RBCCW EMERGENCY OUTLET VALVE	26022, SH 5	EB -56" W PP PEN	R	OPEN OPEN PASSIVE	DV20-BKR 17		
1	7	2-RB-28.3C ()	RBCCW	CTMT AIR RECIRC COOLING "C" RBCCW NORMAL OUTLET VALVE	26022, SH 5	EB -56" E PP PEN	R	OPEN OPEN PASSIVE	DV10-BKR 17		
2	7	2-RB-28.3D ()	RBCCW	CTMT AIR RECIRC COOLING "D" RBCCW EMERGENCY OUTLET VALVE	26022, SH 5	EB -56" W PP PEN	R	OPEN OPEN PASSIVE	DV20-BKR 17		
3	8	2-RB-30.1A ()	RBCCW	"A" RBCCW CTMT SUPPLY VALVE	26022, SH 6	EB -56" W PP PEN	R	OPEN OPEN PASSIVE	B51		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	8	2-RB-30.1B ()	RBCCW	"B" RBCCW HEADER CTMT SUPPLY VALVE	26022, SH 6	EB -5'6" WPP PEN	R	OPEN OPEN PASSIVE	B61		
30P	R	2-RB-37 ()	RBCCW	PRIMARY DRAIN TANK & QUENCH TANK COOLER RBCCW OUTLET STOP VALVE	26022, SH 4	RB -22'6" NE CORNER	-	OPEN CLOSED ACTIVE			
3	8	2-RB-37.2A ()	RBCCW	"A" RBCCW HDR CONTAINMENT RETURN VALVE	26022, SH 4	EB -5'6" WPP PEN	R	OPEN OPEN PASSIVE	B51		
3	8	2-RB-37.2B ()	RBCCW	"B" RBCCW HEADER CONTAINMENT RETURN VALVE	26022, SH 4	EB -5'6" WPP PEN	R	OPEN OPEN PASSIVE	B61		
1	7	2-RB-4.1A ()	RBCCW	RBCCW HEAT EXCHANGER 18A HEADER "A" OUTLET VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R 22	OP/CL OPEN PASSIVE	DV10-BKR 14		
1	7	2-RB-4.1B ()	RBCCW	RBCCW HEAT EXCHANGER 18A HEADER "B" OUTLET VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	SR 22	OP/CL OPEN PASSIVE	DV20-BKR 14		
10P	7	2-RB-4.1C ()	RBCCW	RBCCW HEAT EXCHANGER 18B HEADER "A" OUTLET VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R 22	OP/CL OPEN PASSIVE	DV10-BKR 14		
10P	7	2-RB-4.1D ()	RBCCW	RBCCW HEAT EXCHANGER 18B HEADER "B" OUTLET VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R 22	OP/CL CLOSED PASSIVE	DV20-BKR 14		
2	7	2-RB-4.1E ()	RBCCW	RBCCW HEAT EXCHANGER 18C HEADER "A" OUTLET VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	SR 22	OP/CL OPEN PASSIVE	DV10-BKR 14		
2	7	2-RB-4.1F ()	RBCCW	RBCCW HEAT EXCHANGER 18C HEADER "B" OUTLET VALVE	26022, SH 1	AB -25'6" RBCCW HX AREA	R 22	OP/CL CLOSED PASSIVE	DV20-BKR 14		
3	7	2-RB-68.1A ()	RBCCW	ESF ROOM COOLING 36A RBCCW OUTLET VALVE	26022, SH 2	AB -45'6" A SAFEGUARDS	SR	CLOSED OPEN ACTIVE	DV10-BKR 14		

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	NOTES	EVAL	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	7	2-RB-68.1B	RBCCW	ESF ROOM COOLING 36B RBCCW	26022, SH 2	AB		SR	CLOSED	D120-BKR 14		
		()		OUTLET VALVE		-45"6"			OPEN			
		2-RB-8.1A		SPENT FUEL POOL HX OUTLET VALVE	26022 SH 2	AD		IPEEE	CLOSED			
		()				-25"6"	RBCCW HX AREA		ACTIVE			
		2-RB-8.1B		SPENT FUEL POOL HX OUTLET VALVE	26022 SH 2	AB		IPEEE	CLOSED			
		()				-25"6"	RBCCW HX AREA		ACTIVE			
		2-RC-100E		PZR SPRAY - 1A	26014 SH 1	RG		IPEEE	OP/CL			
		()				38"6"	NE CORNER		ACTIVE			
		2-RC-100F		PZR SPRAY - 1B	26014 SH 1	RB		IPEEE	OP/CL			
		()				38"6"	NE CORNER		ACTIVE			
2OP	7	2-RC-200	RCS	PRESSURIZER SAFETY VALVE	26014, SH 2	RB		S	CLOSED			
		()				38"6"	PRESS TOP		CL/OP			
									ACTIVE			
1	7	2-RC-200	RCS	PRESSURIZER SAFETY VALVE	26014, SH 2	RB		S	CLOSED			
		()				38"6"	PRESS TOP		CLOSED			
									PASSIVE			
2OP	7	2-RC-201	RCS	PRESSURIZER SAFETY VALVE	26014, SH 2	RB		S	CLOSED			
		()				38"6"	PRESS TOP		CL/OP			
									ACTIVE			
1	7	2-RC-201	RCS	PRESSURIZER SAFETY VALVE	26014, SH 2	RB		S	CLOSED			
		()				38"6"	PRESS TOP		CLOSED			
									PASSIVE			
2	7	2-RC-402	RCS	PRESSURIZER PORV	26014, SH 2	RB		SR	CLOSED	D12-BKR 3		
		()				38"6"	PRESS TOP		CL/OP			
									ACTIVE			
2	7	2-RC-402	RCS	PRESSURIZER PORV	26014, SH 2	RB		R	CLOSED	NR		
		()				38"6"	PRESS TOP		CLOSED			
									PASSIVE			

CERTIFICATION:

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Stephen P. Reichle



12/12/95

For OPS review, see NGP 5.05 review, documented in NU memo ES-SD-95-002.

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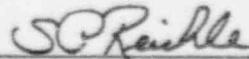
MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	8	2-RC-403 ()	RCS	PRESSURIZER PORV BLOCK VALVE	26014, SH 2	RB 38"6" PRESS TOP	R	OPEN OPEN PASSIVE	NR		
1	8	2-RC-403 ()	RCS	PRESSURIZER PORV BLOCK VALVE	26014, SH 2	RB 38"6" PRESS TOP	SR	OPEN CLOSED ACTIVE	B51		
2	7	2-RC-404 ()	RCS	PRESSURIZER PORV	26014, SH 2	RB 38"6" PRESS TOP	SR	CLOSED CL/OP ACTIVE	D22-BKR 3		
2	7	2-RC-404 ()	RCS	PRESSURIZER PORV	26014, SH 2	RB 38"6" PRESS TOP	R	CLOSED CLOSED PASSIVE	M'R		
2	8	2-RC-405 ()	RCS	PRESSURIZER PORV BLOCK VALVE	26014, SH 2	RB 38"6" PRESS TOP	R	OPEN OPEN PASSIVE	NR		
1	8	2-RC-405 ()	RCS	PRESSURIZER PORV BLOCK VALVE	26014, SH 2	RB 38"6" PRESS TOP	SR	OPEN CLOSED ACTIVE	B61		
1	7	2-RC-406 ()	RCS	REACTOR VESSEL DRAIN HEADER CONTROL VALVE	26014, SH 1	RB -3'6" ALL AREAS	SR 13	OPEN CLOSED ACTIVE	D21-BKR 10		
3	7	2-SI-306 ()	LPSI	SHUTDOWN COOLING FLOW CONTROL VALVE ASSEMBLY	26015, SH 1	AB -45"6" A SAFEGUARDS	S 3.21	OPEN CL/OP ACTIVE	DV10-BKR 17		
1	R	2-SI-44 ()	LPSI	LPSI PUMP "B" SUCTION FROM SHUTDOWN COOLING VALVE	26015, SH 1	AB -45"6" B SAFEGUARDS	-	CLOSED OPEN ACTIVE			
1	R	2-SI-441 ()	LPSI	LPSI PUMP "A" SUCTION FROM SHUTDOWN COOLING VALVE	26015, SH 1	AB -45"6" A SAFEGUARDS	-	CLOSED OPEN ACTIVE			
1	R	2-SI-452 ()	LPSI	LPSI PUMP "A" TO SDC AX "A" DISCHARGE VALVE	26015, SH 1	AB -45"6" A SAFEGUARDS	-	CLOSED OPEN ACTIVE			

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Stephen P. Reichle



12/12/95

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DATE 12/12/95

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

REPORT No. 03-0240-1367
REVISION 2

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL. NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	R	2-SI-453 ()	LPSI	LPSI PUMP "B" TO SDCHX DISCHARGE VALVE	26015, SH 1	AB -45"6" A SAFEGUARDS	-	CLOSED OPEN ACTIVE			
1	R	2-SI-456 ()	LPSI	SHUTDOWN COOLING HX "A" DISCHARGE VALVE	26015, SH 1	AB -45"6" A SAFEGUARDS	-	CLOSED OPEN ACTIVE			
1	R	2-SI-457 ()	LPSI	"B" SHUTDOWN COOLING HX DISCHARGE TO SHUTDOWN COOLING ISOLATION	26015, SH 1	AB -45"6" B SAFEGUARDS	-	CLOSED OPEN ACTIVE			
3	8	2-SI-614 ()	SI	#1 SAFETY INJECTION TANK OUTLET VALVE	26015, SH 3	RB 14"6" NE CORNER	SR	OPEN CLOSED ACTIVE	B51		
3	8	2-SI-615 ()	LPSI	LPSI HEADER TO LOOP "1A" INJECTION VALVE	26015, SH 1	EB -5"6" WPP PEN	SR	CLOSED OPEN ACTIVE	B51		
		2-SI-616 ()		'B' HPSI TO LOOP 1A INJECTION	26015 SH 2	EB -5"6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			
		2-SI-617 ()		'A' HPSI TO LOOP 1A INJECTION	26015 SH 2	EB -5"6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			
3	8	2-SI-624 ()	SI	#2 SAFETY INJECTION TANK OUTLET VALVE	26015, SH 3	RB 14"6" SE CORNER	SR	OPEN CLOSED ACTIVE	B51		
3	8	2-SI-625 ()	LPSI	LPSI HEADER TO LOOP "1B" INJECTION VALVE	26015, SH 1	EB -5"6" WPP PEN	SR	CLOSED OPEN ACTIVE	B51		
		2-SI-626 ()		'B' HPSI TO LOOP 1B INJECTION	26015 SH 2	EB -5"6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			
		2-SI-627 ()		'A' HPSI TO LOOP 1B INJECTION	26015 SH 2	EB -5"6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			

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Stephen P. Reichle



12/12/95

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	8	2-SI-634	SI	#3 SAFETY INJECTION TANK OUTLET VALVE	26015, SH 3	RB 14'6" SW CORNER	SR	OPEN CLOSED ACTIVE	B61		
		()									
3	8	2-SI-635	LPSI	LPSI HEADER TO LOOP 2A INJECTION VALVE	26015, SH 1	EB -5'6" WPP PEN	SR	CLOSED OPEN ACTIVE	B61		
		()									
		2-SI-636		'B' HPSI TO LOOP 2A INJECTION	26015 SH 2	EB -5' 6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			
		()									
		2-SI-637		'A' HPSI TO LOOP 2A INJECTION	26015 SH 2	EB -5' 6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			
		()									
3	8	2-SI-644	SI	#4 SAFETY INJECTION TANK OUTLET VALVE	26015, SH 3	RB 14'6" NW CORNER	SR	OPEN CLOSED ACTIVE	B61		
		()									
3	8	2-SI-645	LPSI	LPSI HEADER TO LOOP 2B INJECTION VALVE	26015, SH 1	EB -5'6" WPP PEN	SR	CLOSED OPEN ACTIVE	B61		
		()									
		2-SI-646		'B' HPSI TO LOOP 2B INJECTION	26015 SH 2	EB -5' 6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			
		()									
		2-SI-647		'A' HPSI TO LOOP 2B INJECTION	26015 SH 2	EB -5' 6" WPP PEN	IPEEE	OPEN OPEN PASSIVE			
		()									
3	8	2-SI-651	SI	SHUTDOWN COOLING SUCTION HEADER CTMT ISOLATION VALVE	26015, SH 3	RB -3'6" SW CORNER	SR	CLOSED OPEN ACTIVE	B51		
		()									
3	8	2-SI-652	SI	SHUTDOWN COOLING SUCTION HEADER ISOLATION VALVE	26015, SH 3	RB -22'6" SW CORNER	SR	CLOSED OPEN ACTIVE	B61		
		()									
3	7	2-SI-657	LPSI	SHUTDOWN COOLING HEAT EXCHANGER FLOW CONTROL VALVE	26015, SH 1	AB -45'6" A SAFEGUARDS	SR 3.15	CLOSED OP/CL ACTIVE	DV10-BKR 17		
		()									

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Stephen P. Reichle



12/12/95

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	8	2-SI-662 ()	HPSI	"B" SHUTDOWN COOLING HX TO "C" HPSI PUMP SUCTION VALVE	26015, SH 2	AB -45"6" B SAFEGUARDS	R	CLOSED CLOSED PASSIVE	B61		
1	8	2-SI-663 ()	HPSI	"A" SHUTDOWN COOLING HX TO "A" HPSI PUMP SUCTION VALVE	26015, SH 2	AB -45"6" A SAFEGUARDS	R	CLOSED CLOSED PASSIVE	B51		
3	R	2-SI-709 ()	SI	SHUTDOWN COOLING SUCTION HEADER MANUAL ISOLATION VALVE	26015, SH 1	EB -5"6" WPP PEN	-	CLOSED OPEN ACTIVE			
3	7	2-SW-102 ()	SW	'A' SERVICE WATER HEADER CHILLER X-170 CONTROL VALVE	26008, SH 3	TB 14' 6" CHILLERS	SR	OPEN OP/CL ACTIVE	NR		HY-8848
3	7	2-SW-104 ()	SW	'B' SERVICE WATER HEADER CHILLER X-170 CONTROL VALVE	26008, SH 3	TB 14' 6" CHILLERS	SR	OPEN OP/CL ACTIVE	NR		HY-8856
3	7	2-SW-111 ()	SW	A CHILLER TO QUARRY CONTROL VALVE	26008, SH 3	TB 14' 6" CHILLER	S	OPEN CLOSED ACTIVE			
3	7	2-SW-113 ()	SW	B CHILLER TO A CHILLER DISCHARGE VALVE	26008 SH 3	TB 14' 6" CHILLER	S	OPEN CLOSED ACTIVE			
3OP	R	2-SW-125 ()	SW	A CHILLER BYPASS VALVE	26008, SH 3	TB 14' 6" CHILLER	-	CLOSED CLOSED PASSIVE			
3OP	R	2-SW-127 ()	SW	B CHILLER BYPASS VALVE	26008, SH 3	TB 14' 6" CHILLER	-	CLOSED CLOSED PASSIVE			
3	R	2-SW-175 ()	SW	SERVICE WATER TO VITAL AC SWITCHGEAR COOLING COIL SUPPLY VALVE	26008, SH 3	TB 14' 6" TBCCW HX-S WALL	-	CLOSED OPEN ACTIVE			
3	7	2-SW-178A ()	SW	SERVICE WATER TO VITAL AC SWGR COOLING COIL CONTROL VALVE	26008, SH 3	TD 31' 6" CNTRUSTOP VLV	SR	OPEN OPEN PASSIVE	DV10-BKR 6		

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Stephen P. Reichle  12/12/95
Print or Type Name/Title Signature Date

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	7	2-SW-178B ()	SW	SERVICE WATER TO CABLE VAULT COOLING COIL CONTROL VALVE	26008, SH 3	TB 54"6" A MSR (EAST)	SR	OPEN OPEN PASSIVE	DV10-BKR 6		
3	7	2-SW-178C ()	SW	SERVICE WATER TO 6.9 & 4.6 KV SWGR RM CLG COIL CONTROL VALVE	26008, SH 3	TB 54"6" A MSR (EAST)	SR	OPEN OPEN PASSIVE	DV20-BKR 6		
3	R	2-SW-180A ()	SW	SERVICE WATER TO VITAL SWGR ROOM AC COOLING COIL BYPASS VALVE	26008, SH 3	TB 31"6" CNTRL/STOP VLV	-	CLOSED OPEN ACTIVE			
3	R	2-SW-180B ()	SW	SERVICE WATER TO VITAL SWGR ROOM AC COOLING COIL BYPASS VALVE	26008, SH 3	TB 31"6" CNTRL/STOP VLV	-	CLOSED OPEN ACTIVE			
3	R	2-SW-180C ()	SW	SERVICE WATER TO VITAL SWGR ROOM AC COOLING COIL BYPASS VALVE	26008, SH 3	TB 31"6" CNTRL/STOP VLV	-	CLOSED OPEN ACTIVE			
1	7	2-SW-231A ()	SW	A D/G HEAT EXCHANGER SERVICE WATER BYPASS VALVE	26008, SH 2	WH 14"6" DG ROOMS	SR	OPEN CLOSED ACTIVE	DV10-BKR 14		
2	7	2-SW-231B ()	SW	B D/G HEAT EXCHANGER SERVICE WATER BYPASS VALVE	26008, SH 2	WH 14"6" DG ROOMS	SR	OPEN CLOSED ACTIVE	DV20-BKR 14		
20P	7	2-SW-245 ()	SW	'C' RBCCW OUTLET TEMPERATURE WINTER BYPASS CONTROL VALVE	26008, SH 2	AB -25"6" RBCCW HX	- 4	OPEN OPEN PASSIVE			
30P	7	2-SW-246 ()	SW	'B' RBCCW OUTLET TEMPERATURE WINTER BYPASS CONTROL VALVE	26008, SH 2	AB -25"6" RBCCW HX	- 4	OPEN OPEN PASSIVE			
10P	7	2-SW-247 ()	SW	'A' RBCCW OUTLET TEMPERATURE WINTER BYPASS CONTROL VALVE	26008, SH 2	AB -25"6" RBCCW HX	- 4	OPEN OPEN PASSIVE			
1	R	2-SW-268 ()	SW	"A" SERVICE WATER STRAINER BACKWASH ISOLATION VALVE	26008, SH 2	CW 14"6" SW PMP	- 13	OPEN CLOSED ACTIVE			

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Stephen P. Reichle
Signature: *SP Reichle*
Date: 12/12/95

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Print or Type Name/Title Signature Date Print or Type Name/Title Signature Date

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
10P	R	2-SW-269	SW	"B" SERVICE WATER STRAINER BACKWASH ISOLATION VALVE	26008, SH 2	CW 14'6" SW PMP	- 13	OPEN CLOSED ACTIVE			
		()									
2	R	2-SW-270	SW	"C" SERVICE WATER STRAINER BACKWASH ISOLATION VALVE	26008, SH 2	CW 14'6" SW PMP	- 13	OPEN CLOSED ACTIVE			
		()									
1	8	2-SW-3.1A	SW	RBCCW A HEADER HX INLET VALVE	26008, SH 2	AB -25'6" RBCCW HX AREA	R	OPEN OPEN PASSIVE	DV10		
		()									
2	8	2-SW-3.1B	SW	RBCCW B HEADER HX INLET VALVE	26008, SH 2	AB -25'6" RBCCW HX AREA	R	OPEN OPEN PASSIVE	DV20		
		()									
2	7	2-SW-3.2A	SW	"A" SERVICE WATER HEADER SUPPLY TO TBCCW STOP VALVE	26008, SH 2	TB 14'6" TBCCW HX AREA	SR	OPEN CLOSED ACTIVE	DV20-BKR 14		HY-6438, 2-SW-3.2A-T
		()									
2	0	2-SW-3.2A-TK	SW	AIR ACCUMULATOR FOR 2-SW-3.2A	26008, SH 2	TB 14' 6" TBCCW HX AREA	S		N/A		
		()						PASSIVE			
1	7	2-SW-3.2B	SW	"B" SERVICE WATER HEADER SUPPLY TO TBCCW STOP VALVE	26008, SH 2	TB 14'6" TBCCW HX AREA	SR	OPEN CLOSED ACTIVE	DV20-BKR 14		HY-6439, 2-SW-3.2B-T
		()									
1	0	2-SW-3.2B-TK	SW	AIR ACCUMULATOR FOR 2-SW-3.2B	26008, SH 2	TB 14' 6" TBCCW HX AREA	S		N/A		
		()						PASSIVE			
1	8	2-SW-8.1A	SW	A RBCCW HX OUTLET TEMP CONTROL VALVE	26008, SH 2	AB -25'6" RBCCW HX AREA	SR 21	OP/CL OPEN ACTIVE	DV10-BKR 14		
		()									
30P	8	2-SW-8.1B	SW	B RBCCW HX OUTLET TEMP CONTROL VALVE	26008, SH 2	AB -25'6" RBCCW HX AREA	SR 21	OP/CL OPEN ACTIVE	DV10/DV20		
		()									
2	8	2-SW-8.1C	SW	C RBCCW HX OUTLET TEMP CONTROL VALVE	26008, SH 2	AB -25'6" RBCCW HX AREA	SR 21	OP/CL OPEN ACTIVE	DV20		
		()									

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
10P	8	2-SW-89A	SW	A SERVICE WATER DIESEL COOLING TEMP. CONTROL VALVE	26008, SH 2	WH 14'6" DC ROOMS	SR 21	CLOSED OPEN ACTIVE	DV10-BKR 14		
		()									
20P	8	2-SW-89B	SW	B SERVICE WATER DIESEL COOLING TEMP. CONTROL VALVE	26008, SH 2	WH 14'6" DC ROOMS	SR 21	CLOSED OPEN ACTIVE	DV20-BKR 14		
		()									
1	7	2-SW-90A	SW	A SERVICE WATER PUMP DISCHARGE STRAINER FLUSH VALVE	26008, SH 2	CW 14'6" SW PUMP	SR 17	OP/CL CLOSED ACTIVE	B51		
		()									
10P	7	2-SW-90B	SW	B SERVICE WTR PUMP DISCHARGE STRAINER FLUSH VALVE	26008, SH 2	CW 14'6" SW PUMP	SR 17	OP/CL CLOSED ACTIVE	B51/B61		
		()									
2	7	2-SW-90C	SW	C SERVICE WATER PUMP DISCHARGE STRAINER FLUSH VALVE	26008, SH 2	CW 14'6" SW PUMP	SR 17	OP/CL CLOSED ACTIVE	B61		
		()									
3	7	2-SW-97A	SW	SERVICE WATER PUMP HDR X-TIE CONTROL VALVE	26008, SH 2	CW 14'6" SW PPS	SR 22	OP/CL OPERABLE ACTIVE	D11		
		()									
3	7	2-SW-97B	SW	SERVICE WATER PUMP HDR X-TIE CONTROL VALVE	26008, SH 2	CW 14'6" SW PPS	SR 22	OP/CL OPERABLE ACTIVE	D21		
		()									
		201D-1		INSTRUMENT AND DISTRIBUTION PANEL				IPEEE			
		()									
		21S3-1-2		CIRCUIT BREAKER				IPEEE			
		()									
		21S3-14C-2		CIRCUIT BREAKER				IPEEE			
		()									
		21S3-2-2		CIRCUIT BREAKER				IPEEE			
		()									

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
		21S3-3-2		CIRCUIT BREAKER				IPEEE			
		()									
1	2	22E	ELEC AC	480V BUS 22E (B05)	30008	TB 36' 6" WEST 480V	S	ON ON PASSIVE	BKR-B0502		
		(B05)									
2	2	22F	ELEC AC	480V BUS 22F (B06)	30008	AB 36' 6" EAST 480V	S	ON ON PASSIVE	BKR-B0611		
		(B06)									
		22S3-2-2		RSST FEEDER CIRCUIT BREAKER				IPEEE			
		()									
		24A1-1X		24A/22A TRANSFORMER		TB 31' 6" LOWER 4160V		IPEEE			
		()									
		24A2-1X		24A/22C TRANSFORMER		TB 31' 6" LOWER 4160V		IPEEE			
		()									
		24A3-1X		TRANSFORMER				IPEEE			
		()									
		24B5-1X		24B/22D TRANSFORMER		TB 56' 6" UPPER 4160V		IPEEE			
		()									
1	3	24C	ELEC AC	4.16KV EMG BUS 24C (A3)	30005	AB 31' 6" LOWER 4160V	S	ON ON PASSIVE	BKR A312		
		(A3)									
2	3	24D	ELEC AC	4.16KV EMG BUS 24D (A4)	30005	AB 56' 6" UPPER 4160V	S	ON ON PASSIVE	BKR A401		
		(A4)									
3	3	24E	ELEC AC	4.16KV EMG BUS 24E (A5)	30009	AB 31' 6" LOWER 4160V	S	ON ON PASSIVE	A408/A305		
		(A5)									

CERTIFICATION:

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Stephen P. Reichle  12/12/95
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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
		52-A310		24C CIRCUIT BREAKER		TB 31' 6" LOWER 4160V	IPEEE	OPEN CLOSED ACTIVE			
		()									
		52-A405		24D CIRCUIT BREAKER		TB 56' 6" UPPER 4160V	IPEEE	OPEN CLOSED ACTIVE			
		()									
		52-B0512		22E CIRCUIT BREAKER		AB 36' 6" WEST 480V	IPEEE				
		()									
	14	A301	ELEC AC	4.16KV SWITCHGEAR A3 RELAY COMPARTMENT	30005	TB 31'6" LOWER 4.16KV	B 10	N/A N/A	NO		
		()									
1	3	A302	ELEC AC	4.16KV BKR - RSS TRANSFORMER U3	30005	TB 31'6" LOWER 4.16KV	BR 23	OP/CL OPEN ACTIVE	BUS-24C		
		(22S3-24C-2)									
1	3	A303	ELEC AC	4.16KV BKR TO XFMR 24C1-1X	30005	TB 31' 6" LOWER 4160V	BR 23	CLOSED CLOSED ACTIVE	BUS-24C		
		(24C1-2)									
	14	A304	ELEC AC	4.16KV BREAKER TO 24A (A1) CROSS-TIE	30005	TB 31'6" LOWER 4.16KV	BR 10,23,24	CLOSED CL/OP ACTIVE	BUS-24A		
		()									
1	3	A305	ELEC AC	4.16KV BKR TO 24E	30005	TB 31' 6" LOWER 4160V	BR 23	OP/CL OP/CL ACTIVE	BUS-24C		
		(24C-2T-2)									
1	3	A306	ELEC AC	4.16KV BKR TO SERVICE WATER PUMP P5A	30005	TB 31' 6" LOWER 4160V	BR 23	CLOSED OPERABLE ACTIVE	BUS-24C		
		(24C2-2)									
1	3	A307	ELEC AC	4.16KV BKR TO AUXILIARY FEEDWATER PUMP P9A	30005	TB 31' 6" LOWER 4160V	BR 23	OP/CL OPERABLE ACTIVE	BUS-24C		
		(24C3-2)									
1	3	A308	ELEC AC	4.16KV BKR TO HPSI PUMP P41A	30005	TB 31'6" LOWER 4160V	BR 23	OPEN OPEN PASSIVE	BUS-24C		
		(24C4-2)									

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	3	A309 (24C5-2)	ELEC AC	4.16KV BKR TO LPSI PUMP P42A	30005	TB 31' 6" LOWER 4150V	BR 23	OPEN OPERABLE ACTIVE	BUS-24C		
1	3	A311 (24C7-2)	ELEC AC	4.16KV BKR TO RBCCW PUMP P11A	30005	TB 31' 6" LOWER 4150V	BR 23	CLOSED OPERABLE ACTIVE	BUS-24C		
	14	A311A ()	ELEC AC	4.16KV EMERGENCY BUS 24C RELAY COMPARTMENT	30005	TB 31' 6" LOWER 4150V	B 10	N/A N/A	NO		
1	3	A312 (15G-12U-2)	ELEC AC	4.16KV BKR - DIESEL GEN 15G-12U-2	30005	TB 31' 6" LOWER 4150V	BR 23	OPEN OP/CL ACTIVE	DV10		
2	3	A401 (15G-13U-2)	ELEC AC	4.16KV BKR - DIESEL GEN 15G-13U-2	30005	TB 56' 6" UPPER 4150V	BR 23	OPEN OP/CL ACTIVE	DV20		
	14	A401A ()	ELEC AC	4.16KV EMERGENCY BUS 24D RELAY COMPARTMENT		TB 56' 6" UPPER 4150V	B 10	N/A N/A			
2	3	A402 (24D1-2)	ELEC AC	4.16KV BKR TO RBCCW PUMP P11C	30005	TB 56' 6" UPPER 4150V	BR 23	CLOSED OPERABLE ACTIVE	BUS-24D		
2	3	A403 (24D2-2)	ELEC AC	4.16KV BKR TO HPSI PUMP P41C	30005	TB 56' 6" UPPER 4150V	BR 23	OPEN OPEN PASSIVE	BUS-24D		
2	3	A404 (24D3-2)	ELEC AC	4.16KV BKR TO LPSI PUMP P42B	30005	TB 56' 6" UPPER 4150V	BR 23	OPEN OPERABLE ACTIVE	BUS-24D		
2	3	A406 (24D5-2)	ELEC AC	4.16KV BKR TO AUXILIARY FEEDWATER PUMP P9B	30005	TB 56' 6" UPPER 4150V	BR 23	OP/CL OPERABLE ACTIVE	BUS-24D		
2	3	A407 (24D6-2)	ELEC AC	4.16KV BKR TO SERVICE WATER PUMP P5C	30005	TB 56' 6" UPPER 4150V	BR 23	CLOSED OPERABLE ACTIVE	BUS-24D		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	3	A408 (24D-2T-2)	ELEC AC	4.16KV BKR TO 24E	30005	TB 56' 6" UPPER 4160V	BR 23	CL/OP CL/OP ACTIVE	BUS-24D		
2	3	A409 (24D7-2)	ELEC AC	4.16KV BKR TO XFMR 24D7-1X	30005	TB 56' 6" UPPER 4160V	BR 23	CLOSED CLOSED ACTIVE	BUS-24D		
	14	A410 ()	ELEC AC	4.16KV CROSS-TIE BREAKER TO 24B (A2)	30005	TB 56' 6" UPPER 4160V	BR 10,23,24	CLOSED CL/OP ACTIVE	BUS-24B		
2	3	A411 (22S3-24D-2)	ELEC AC	4.16KV BKR - RSS TRANSFORMER U3	30005	TB 56' 6" UPPER 4160V	BR 23	OP/CL OPEN ACTIVE	BUS-24D		
3	3	A502 (24E1-2)	ELEC AC	4.16KV BKR TO SERVICE WATER PUMP P5B	30009	TB 31' 6" LOWER 4160V	BR 23	CLOSED OPERABLE ACTIVE	BUS-24E		
3	3	A503 (24E2-2)	ELEC AC	4.16KV BKR TO HPSI PUMP P41B	30009	TB 56' 6" LOWER 4160V	BR 23	OPEN OPEN ACTIVE	BUS-24E		
3	3	A504 (24E3-2)	ELEC AC	4.16KV BKR TO RBCCW PUMP P11B	30009	TB 31' 6" LOWER 4160V	BR 23	CLOSED OPERABLE ACTIVE	BUS-24E		
3	3	A505 (21S3-24E-2)	ELEC AC	UNIT 1 4.16KV TIE	30009	TB 31' 6" LOWER 4160V	B 18,23	OPEN OPEN PASSIVE	BUS-24E		
1	2	B0502 (24C1-1X3-2)	ELEC AC	480V BKR TO 22E	30008	AB 36' 6" WEST 480V	BR	CLOSED CLOSED PASSIVE	XFMR UB5		
1	2	B0503 (22E1-2)	ELEC AC	480V BKR TO B51 MCC-22-1E	30008	AB 36' 6" WEST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22E		
1	2	B0504 (22E2-2)	ELEC AC	480V BKR TO PRESSURIZER HEATER GROUP 1	30008	AB 36' 6" WEST 480V ROOM	BR	CLOSED CLOSED PASSIVE	BUS-22E		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	252C3-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	2	B0506 (22E4-2)	ELEC AC	480V BKR TO DC1	30008	AB 36' 6" WEST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22E		
1	2	B0507 (22E5-2)	ELEC AC	480V BKR TO B52 MCC-22-2E	30008	AB 36' 6" WEST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22E		
1	2	B0508 (22E6-2)	ELEC AC	480V BKR TO CAR FAN F14A	30008	AB 36' 6" WEST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22E		
1	2	B0510 ()	ELEC AC	480V BKR TO CAR FAN F14C	30008	AB 36' 6" WEST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22E		
2	2	B0603 (22F2-2)	ELEC AC	480V BKR TO CAR FAN F14D	30008	AB 36' 6" EAST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22F		
2	2	B0605 (22F3-2)	ELEC AC	480V BKR TO CAR FAN F14B	30008	AB 36' 6" EAST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22F		
2	2	B0606 (22F4-2)	ELEC AC	480V BKR TO B62 MCC-22-2F	30008	AB 36' 6" EAST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22F		
2	2	B0607 (22F5-2)	ELEC AC	480V BKR TO DC2	30008	AB 36' 6" EAST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22F		
2	2	B0609 (22F7-2)	ELEC AC	480V BKR TO PRESSURIZER HEATER GROUP 2	30008	AB 36' 6" EAST 480V ROOM	BR	CLOSED CLOSED PASSIVE	BUS-22F		
2	2	B0610 (22F8-2)	ELEC AC	480V BKR TO B61 MCC-22-1F	30008	AB 36' 6" EAST 480V	BR	CLOSED CLOSED PASSIVE	BUS-22F		
2	2	B0611 (24D7-1X3-2)	ELEC AC	480V BKR TO 22F	30008	AB 36' 6" EAST 480V	BR	CLOSED CLOSED PASSIVE	XFMR UB6		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
		B11		480 V MCC BUS B11 (22-1A)	30011 SH 1-5	TB 31'6" SW CORNER	IPEEE				
		(22-1A)									
		B12		480 V MCC BUS B12 (22-2A)	30011 SH 6-9	TB 31'6" NW CORNER	IPEEE				
		(22-2A)									
		B13		480 V MCC BUS B13 (22-3A)	30011 SH 10,11	INTAKE 14' 6"	IPEEE				
		(22-3A)									
		B21		480 V MCC BUS B21 (22-1B)	30011 SH 12-16	TB 31'6" SE CORNER	IPEEE				
		(22-1B)									
		B31A		480 V MCC BUS B31A (22-1CA)	30011 SH 20,21	AB -5'6" SFP HX	IPEEE				
		(22-1CA)									
		B31B		480 V MCC BUS B31B (22-1CB)	30011 SH 22,23	AB 14' 6" E. ELECT PEN	IPEEE				
		(22-1CB)									
		B32		480 V MCC BUS B32 (22-2C)	30011 SH 24,25	AB 14' 6" AB ENTRANCE	IPEEE				
		(22-2C)									
		B33		480 V MCC BUS B33 (22-3C)	30011 SH 26	UNIT 1 14' 6" BOILER RM	IPEEE				
		(22-3C)									
		B41A		480 V MCC BUS B41A (22-1DA)	30011 SH 27-29	AB 14' 6" PRI SAMP SINK	IPEEE				
		(22-1DA)									
		B41B		480 V MCC BUS B41B (22-1DB)	30011 SH 30,31	AB 14' 6"	IPEEE				
		(22-1DB)									
		B42		480 V MCC BUS B42 (22-2D)	30011 SH 32,33	INTAKE 14' 6"	IPEEE				
		(22-2D)									

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	1	B51 (22-1E)	ELEC AC	480V MCC BUS B51 (22-1E)	30001	AB 14' 6" SFP SKIMMER PP AREA	S	ON ON PASSIVE	BKR-B0503		
1	1	B52 (22-2E)	ELEC AC	480V MCC BUS B52 (22-2E)	30001	WH 38' 6" MAIN EXH FAN	S	ON ON PASSIVE	BKR-B0507		
2	1	B61 (22-1F)	ELEC AC	480V MCC BUS B61 (22-1F)	30001	AB 14' 6" PMP SAMP SK	S	ON ON PASSIVE	BKR-B0610		
2	1	B62 (22-2F)	ELEC AC	480V MCC BUS B62 (22-2F)	30001	AB 36' 6" CR HVAC	S	ON ON PASSIVE	BKR-B0606		
1	0	BACKUP AIR BOTTLES (2-CH-517) () BUS 24A () BUS 24B () BUS 25B ()	CVCS	BACKUP AIR BOTTLES FOR AUX SPRAY SUPPLY VALVE 2-CH-517	26017, SH 1	AB -5' 6" TB 31' 6" LOWER 4160V TB 56' 6" UPPER 4160V TB 56' 6" UPPER 4160V	S	N/A N/A PASSIVE IPEEE IPEEE IPEEE			
20	C01 ()			MAIN CONTROL BOARD C01 (FRONT)		CB 36' 6" CONTROL RM	S 10				
20	C01R ()			MAIN CONTROL BOARD C01 (REAR)		CB 36' 6" CONTROL RM	S 10				
20	C01X ()			ACCESS CONTROL DOOR ALARM DISTRIBUTION PANEL		CB 36' 6" NEXT TO RPS	S 10				

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Date: 12/12/95

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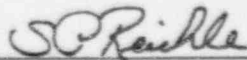
MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
20	C02			MAIN CONTROL BOARD C02 (FRONT)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C02R			MAIN CONTROL BOARD C02 (REAR)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C03			MAIN CONTROL BOARD C03 (FRONT)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C03R			MAIN CONTROL BOARD C03 (REAR)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C04			MAIN CONTROL BOARD C04 (FRONT)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C05			MAIN CONTROL BOARD C05 (FRONT)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C05R			MAIN CONTROL BOARD C05 (REAR)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C06			MAIN CONTROL BOARD C06 (FRONT)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C06R			MAIN CONTROL BOARD C06 (REAR)		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C06X			MAIN CONTROL BOARD C06X		CB 36' 6"	S 10				
		()				CONTROL RM					
20	C07			MAIN CONTROL BOARD C07 (FRONT)		CB 36' 6"	S 10				
		()				CONTROL RM					

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
	20	C07R		MAIN CONTROL BOARD C07 (REAR)		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	C08		MAIN CONTROL BOARD C08 (FRONT)		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	C08R		MAIN CONTROL BOARD C08 (REAR)		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	C10		SAFE SHUTDOWN PANEL		AB 56' 6"	S 10				
		()				UPPER 4160V					
	20	C25A		CONTROL ROOM VENT CONTROL CABINET		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	C25B		CONTROL ROOM VENT CONTROL CABINET		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	C38		DIESEL GENERATOR H7A CONTROL CABINET		WH 14' 6"	S 10				
		()				A DIESEL					
	20	C39		DIESEL GENERATOR H7B CONTROL CABINET		WH 14' 6"	S 10				
		()				B DIESEL					
	14	C58A		SERVICE WATER PUMP PANEL		CW 14' 6"	S 10	N/A			
		()				SW PUMP		N/A			PASSIVE
	14	C58B		SERVICE WATER PUMP PANEL		CW 14' 6"	S 10	N/A			
		()				SW PUMP		N/A			PASSIVE
	14	C58C		SERVICE WATER PUMP PANEL		CW 14' 6"	S 10	N/A			
		()				SW PUMP		N/A			PASSIVE

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	20	C70A		BOTTLE-UP PANEL C70A		AB 36' 6" EAST 480V	S 10				
		()									
	20	C70B		BOTTLE-UP PANEL C70B		AB 36' 6" EAST 480V	S 10				
		()									
	20	C80		VITAL SWITCHGEAR VENT CONTROL CABINET		AB 36' 6" CONTROL RM	S 10				
		()									
1	14	D01	ELEC DC	125VDC EMERGENCY BUS D01	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	DC1		
		(201A)									
2	14	D02	ELEC DC	125VDC EMERGENCY BUS D02	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	DC2		
		(201B)									
		D03		125V DC BUS		TB 31' 6" SW CORNER		IPEEE			
		()									
1	14	D101	ELEC DC	125VDC DISTRIBUTION PANEL D1130024		AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	BUS-D01		
		(201A-1)									
1	14	D11	ELEC DC	125VDC DISTRIBUTION PANEL D1130024		AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	BUS-D01		
		(201A-1)									
1	14	D12	ELEC DC	125VDC DISTRIBUTION PANEL D1230024		AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	BUS-D01		
		(201A-2)									
2	14	D21	ELEC DC	125VDC DISTRIBUTION PANEL D2130024		AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	BUS-D02		
		(201B-1)									
2	14	D22	ELEC DC	120VDC DISTRIBUTION PANEL D2230024		AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	BUS-D02		
		(201B-2)									

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DATE 12/12/95

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

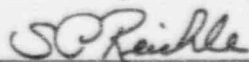
REPORT No. 03-0240-1367
REVISION 2

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	15	DB1 ()	ELEC DC	BATTERY 201A (DB1)	30024	AB 14' 6" "A" DC BATT	S	ON ON PASSIVE	No		
2	15	DB2 () DB3 ()	ELEC DC	BATTERY 201B (DB2) BATTERY	30024	AB 14' 6" "B" DC BATT TB 31' 6" SW CORNER	S	ON ON PASSIVE IPEEE	No		
1	16	DC1 (201A)	ELEC AC	"A" BATTERY CHARGER BUS 201A	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	BKR-B0506		
2	16	DC2 (201B) DC3 () DC4 ()	ELEC AC	"B" BATTERY CHARGER BUS 201B BATTERY CHARGER BATTERY CHARGER	30024	AB 14' 6" WEST DC GEAR AB 14' 6" "A" DC SWGR TB 31' 6" TB BATTERY AREA	S	ON ON PASSIVE IPEEE IPEEE	BKR-B0607		
1	14	DS1 ()	ELEC DC	FUSED DISCONNECT SWITCH DS1	30024	AB 14' 6" "A" DC BATT	S	CLOSED CLOSED PASSIVE	BATTERY 201A		
2	14	DS2 ()	ELEC DC	FUSED DISCONNECT SWITCH DS2	30024	AB 14' 6" "B" DC BATT	S	CLOSED CLOSED PASSIVE	BATT 201B		
1	14	DV10 (201A-1V)	ELEC DC	125VDC VITAL PANEL DV10	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	BUS-D01		
2	14	DV20 (201B-1V)	ELEC DC	125VDC VITAL PANEL DV20	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	BUS-D02		

CERTIFICATION:

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Stephen P. Reichle



12/12/95

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Print or Type Name/Title

Signature

Date

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
		DV30 ()		INSTRUMENT AND DISTRIBUTION PANEL		AB 14' 6" E DC SWGR		IPEEE			
		DV40 ()		INSTRUMENT AND DISTRIBUTION PANEL		AB 14' 6" W DC SWGR		IPEEE			
3	11	F-001A ()	RBCCW	WASTE GAS COMPRESSOR "A" & AFTERCOOLER	26022, SH 2			S 20 PASSIVE			
3	11	F-001B ()	RBCCW	WASTE GAS COMPRESSOR "B" & AFTERCOOLER	26022, SH 2			S 20 PASSIVE			
1	9	F-014A ()	HVAC	'A' CONTAINMENT RECIRCULATION COOLING UNIT FAN	26028, SH. 1	RB 38' 6" N END FUEL POOL		S ON ON ACTIVE	B05		BKR B0508
2	9	F-014B ()	HVAC	'B' CONTAINMENT RECIRCULATION COOLING UNIT FAN	26028, SH. 1	RB 38' 6" N END FUEL POOL		S ON ON ACTIVE	B06		BKR B0605
1	9	F-014C ()	HVAC	'C' CONTAINMENT RECIRCULATION COOLING UNIT FAN	26028, SH. 1	RB -3' 6" N END FUEL POOL		S ON ON ACTIVE	B05		BKR B0510
2	9	F-014D ()	HVAC	'D' CONTAINMENT RECIRCULATION COOLING UNIT FAN	26028, SH. 1	RB -3' 6" N END FUEL POOL		S ON ON ACTIVE	B06		BKR B0603
1	9	F-015A ()	HVAC	'A' ESF ROOM COOLING FAN	26028, SH 4	AB -45' 6" A SAFEGUARDS		SR ON ON ACTIVE	B51		
2	9	F-015B ()	HVAC	'B' ESF ROOM COOLING FAN	26028, SH 4	AB -45' 6" B SAFEGUARDS		SR ON ON ACTIVE	B61		
1	10	F-021A ()	HVAC	'A' CONTROL ROOM A/C SYS UNIT FAN	26027, SH 3	AB 36' 6" CR HVAC RM		SR ON/OFF ON ACTIVE	B52		

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

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2	10	F-021B ()	HVAC	'B' CONTROL ROOM A/C SYS UNIT FAN	26027, SH 3	AB 36' 6" CR HVAC RM	SR	OFF/ON ON ACTIVE	B62		
1	11	F-022A ()	HVAC	'A' CONTROL ROOM A/C COMPRESSOR	26027, SH 3	AB 36' 6" CR HVAC RM	SR	ON/OFF ON/OFF ACTIVE	B52		
2	11	F-022B ()	HVAC	'B' CONTROL ROOM A/C COMPRESSOR	26027, SH 3	AB 36' 6" CR HVAC RM	SR	ON/OFF ON/OFF ACTIVE	B62		
1	9	F-031A ()	HVAC	'A' CONTROL RM EXHAUST FAN	26027, SH 3	AB 36' 6" CR HVAC RM	SR	ON/OFF ON ACTIVE	B52		
2	9	F-031B ()	HVAC	'B' CONTROL RM EXHAUST FAN	26027, SH 3	AB 36' 6" CR HVAC RM	SR	ON/OFF ON ACTIVE	B62		
1	10	F-036A ()	HVAC	'A' CONTROL ROOM A/C AIR CLG COND FAN	26027, SH 3	AB 36' 6" CR HVAC RM	SR	ON ON ACTIVE	B52		
2	10	F-036B ()	HVAC	'B' CONTROL ROOM A/C AIR CLG COND FAN	26027, SH 3	AB 36' 6" CR HVAC RM	SR	ON ON ACTIVE	B62		
1	9	F-038A ()	HVAC	'A' DG ROOM VENT FAN	26027, SH 1	WH 14' 6" D/G ROOF	SR	ON ON ACTIVE	B51		
2	9	F-038B ()	HVAC	'B' DG ROOM VENT FAN	26027, SH 1	WH 14' 6" D/G ROOF	SR	ON ON ACTIVE	B61		
1	9	F-051 ()	HVAC	WEST 480V ROOM CLG FAN	26C27, SH 1	TB 36' 6" WEST 480V	BR	ON ON ACTIVE	B51		
2	9	F-052 ()	HVAC	EAST 480V ROOM SUPPLY FAN	26027, SH 1	AB 54' 6" 6.9 KV SWGR	SR	ON ON ACTIVE	B61		

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TRAIN	EQ CL	EQUIP ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	9	F-054A ()	HVAC	EAST DC SWGR RM A/C UNIT FAN	26029, SH 1	AB 14' 6" HALLWAY AREA	SR	ON ON ACTIVE	B51		
2	9	F-054B ()	HVAC	WEST DC SWGR RM A/C UNIT FAN	26029, SH 1	AB 14' 6" HALLWAY AREA	SR	ON ON ACTIVE	B61		
1	9	F-112A ()	HVAC	'A' DC BATTERY RM EXHAUST FAN	26029, SH 1	AB 36' 6" OUT BTWN U1&2	SR	ON ON ACTIVE	B52		
2	9	F-112B ()	HVAC	'B' DC BATTERY RM EXHAUST FAN	26029, SH 1	AB 36' 6" OUT BTWN U1&2	SR	ON ON ACTIVE	B62		
2	9	F-133 ()	HVAC	UPPER 4160V SWGR ROOM CLG FAN	26027, SH 1	AB 56' 6" 6.9 KV SWGR	SR	ON ON ACTIVE	B61		
1	9	F-134 ()	HVAC	LOWER 4160V SWGR ROOM CLG COIL	26027, SH 1	AB 45' 6" TB CABLE VAULT	SR	ON ON ACTIVE	B51		
1	9	F-142 ()	HVAC	EAST 480V RM EXHAUST FAN	26029, SH 1	AB 36' 6" EAST 480V	SR	ON ON ACTIVE	B62		
		FE311 ()		HPSI FLOW ELEMENTS		AB -5' 8" WPP PEN		IPEEE			
		FE321 ()		HPSI FLOW ELEMENTS		AB -5' 8" WPP PEN		IPEEE			
		FE331 ()		HPSI FLOW ELEMENTS		AB -5' 6" WPP PEN		IPEEE			
		FE341 ()		HPSI FLOW ELEMENTS		AB -5' 6" WPP PEN		IPEEE			

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

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	14	FLP-5	HVAC	EAST DC SWITCHGEAR ROOM HALON FIRE SYSTEM PANEL		AB 14' 6"	S 10				
		()				E DC GEAR					
	14	FLP-6	HVAC	WEST DC SWITCHGEAR ROOM HALON FIRE SYSTEM PANEL		AB 14' 6"	S 10				
		()				WDC GEAR					
2	8	FY-192	CVCS	SOV FOR 2-CH-192	26017 SH 3	AB -25' 6"	B	DE-ENERG ENERG ACTIVE			
		()				CH PMP AREA					
1	17	H-07A	DG	"A" EMERGENCY DIESEL GENERATOR	26010, SH 1	WH 14' 8"	SR	OFF ON ACTIVE	DV10		
		()				A DG ROOM					
2	17	H-07B	DG	"B" EMERGENCY DIESEL GENERATOR	26010, SH 1	WH 14' 8"	SR	OFF ON ACTIVE	DV20		
		()				B DG ROOM					
3	21	H-24	RBCCW	DEGASIFIER VENT CONDENSER	26022, SH 5		S 20	PASSIVE			
		()									
3	0	H-26	RBCCW	BORIC ACID EVAPORATOR PACKAGE	26022, SH 2		S 20	PASSIVE			
		()									
3	8	HY-507	RCS	SOLENOID VALVE FOR 2-CH-507	26017, SH 2	RB	B	DE-ENERG ENERG ACTIVE	D21		NITROGEN BOTTLES FOR 2-CH-507
		()									
1	8	HY-517	CVCS	SOV FOR 2-CH-517	26017, SH 1	RB -3' 6"	B	DE-ENERG ENERG ACTIVE	DV20		Backup air bottles, 2-CH-517-TK
		()				SW CORNER					
2	8	HY-6438	SW	SOV FOR 2-SW-3.2A	26008, SH 2	TB 14' 6"	B	OPERABLE OPERABLE ACTIVE	DV20-BKR 14		2-SW-3.2A-TK
		()				TBCCW HX AREA					
1	8	HY-6439	SW	SOV FOR 2-SW-3.2B	26008, SH 2	TB 14' 6"	B	OPERABLE OPERABLE ACTIVE	DV20-BKR 14		2-SW-3.2B-TK
		()				TBCCW HX AREA					

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	8	HY-8848 ()	SW	SOV FOR 2-SW-102	26008, SH 3	TB 14' 6" CHILLERS	B	ENERG DE-ENERG ACTIVE	NR		
3	8	HY-8856 ()	SW	SOV FOR 2-SW-104	26008, SH 3	TB 14' 6" CHILLERS	B	ENERG DE-ENERG ACTIVE	NR		
1	16	INV 1 (VIP 1)	ELEC DC	INVERTER NO 1	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	BUS-D01		
2	16	INV 2 (VIP 2)	ELEC DC	INVERTER NO 2	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	BUS-D02		
1	16	INV 3 (VIP 3)	ELEC DC	INVERTER NO 3	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	BUS-D01		
2	16	INV 4 (VIP 4)	ELEC DC	INVERTER NO 4	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	BUS-D02		
		INV 5 ()		INVERTER NO 5		AB 36' 6" WEST 480V		IPEEE			
		INV 6 ()		INVERTER NO 6		AB 36' 6" WEST 480V		IPEEE			
1		L-79 ()	DG	"A" DIESEL GENERATOR DIESEL FUEL OIL DUPLEX FILTER	26010, SH 1	WH 14'6" A DG ROOM		12			
2		L-81 ()	DG	"B" DIESEL GENERATOR DIESEL FUEL OIL DUPLEX FILTER	26010, SH 1	WH 14'6" B DG ROOM		12			
1	18	LI-103 ()	RCS	PRESSURIZER LEVEL	26014, SH 2	CB 36'6" C03F	BR	ON ON ACTIVE	VA20		LT-103

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Stephen P. Reichle *SP Reichle* 12/12/95
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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	18	LI-103-1 ()	RCS	PRESSURIZER LEVEL	26014, SH 2	TB 54'6" SWGR C10	BR	ON ON ACTIVE	VR11		LT-103
1	18	LI-1113A ()	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA10		LT-1113A
2	18	LI-1113B ()	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA20		LT-1113B
1	18	LI-1113C ()	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA30		LT-1113C
2	18	LI-1113D ()	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA40		LT-1113D
1	18	LI-1123A ()	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA10		LT-1123A
2	18	LI-1123B ()	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA20		LT-1123B
1	18	LI-1123C ()	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA30		LT-1123C
2	18	LI-1123D ()	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CB 36'6" C05F	BR	ON ON ACTIVE	VA40		LT-1123D
3	18	LI-206 ()	BA	"A" BORIC ACID TANK LEVEL	26017, SH 3	CB 36'6" C02F	BR	ON ON ACTIVE	VA20		LT-206
3OP	18	LI-206A ()	BA	"A" BORIC ACID TANK LEVEL (LOCAL)	26017, SH 3	AB -5'0" RACK C126	B	ON ON ACTIVE	NR		

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TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	18	LI-208 ()	BA	"B" BORIC ACID TANK LEVEL	26017, SH 3	CB 36"6" C02F	BR	ON ON ACTIVE	VA20		LT-208
3OP	18	LI-208A ()	BA	"B" BORIC ACID TANK LEVEL (LOCAL)	26017, SH 3	AB -5'0" RACK C126	B	ON ON ACTIVE	NR		
2	18	LI-3001 ()	CVCS	RWST LEVEL	26015, SH 2	CB 36"6" C01F	BR	ON ON ACTIVE	VA10		LT-3001
2	18	LI-3002 ()	CVCS	RWST LEVEL	26015, SH 2	CB 36"6" C01F	BR	ON ON ACTIVE	VA20		LT-3002
2	18	LI-3003 ()	CVCS	RWST LEVEL	26015, SH 2	CB 36"6" C01F	BR	ON ON ACTIVE	VA30		LT-3003
2	18	LI-3004 ()	CVCS	RWST LEVEL	26015, SH 2	CB 36"6" C01F	BR	ON ON ACTIVE	VA40		LT-3004
1	18	LI-5282 ()	COND	CST LEVEL	26005, SH 3	TR 54"6" SIWGR C-10	BR	ON ON ACTIVE			LT-5282
1	18	LI-5282-1 ()	COND	CST LEVEL	26005, SH 3	AB 36"6" HOT S/D PNL	BR	ON ON ACTIVE			LT-5282
		LS-3001 ()		RWST LEVEL SENSORS		YD 14' 6" RWST		IPEEE			
		LS-3002 ()		RWST LEVEL SENSORS		YD 14' 6" RWST		IPEEE			
		LS-3003 ()		RWST LEVEL SENSORS		YD 14' 6" RWST		IPEEE			

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
		LS-3004		RWST LEVEL SENSORS		YD 14' 6" RWST		IPEEE			
		()									
1	18	LT-103	RCS	PRESSURIZER LEVEL	26014, SH 2	CE -3'6" C140	B	ON ON ACTIVE			
		()									
1	18	LT-110X	RCS	PRESSURIZER LEVEL	26014, SH 2	CE -3'6" C211	B	ON ON ACTIVE			
		()									
2	18	LT-110Y	RCS	PRESSURIZER LEVEL	26014, SH 2	CE -3'6" C140	B	ON ON ACTIVE			
		()									
1	18	LT-1113A	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CE 14'6" C173	B	ON ON ACTIVE			
		()									
2	18	LT-1113B	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CE 14'6" C207	B	ON ON ACTIVE			
		()									
1	18	LT-1113C	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CE 14'6" C252	R	ON ON ACTIVE			
		()									
2	18	LT-1113D	MS	#1 STEAM GENERATOR LEVEL	26005, SH 2	CE 14'6" C206	B	ON ON ACTIVE			
		()									
1	18	LT-1123A	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CE 14'6" C205	B	ON ON ACTIVE			
		()									
2	18	LT-1123B	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CE 14'6" C172	B	ON ON ACTIVE			
		()									
1	18	LT-1123C	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CE 14'6" C203	B	ON ON ACTIVE			
		()									

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TRAIN	EQ CL	EQUIP ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	18	LT-1123D ()	MS	#2 STEAM GENERATOR LEVEL	26005, SH 2	CE 1'16" C204	B	ON ON ACTIVE			
3	18	LT-206 ()	BA	"A" BORIC ACID TANK LEVEL TRANSMITTER FOR LI-206	26017, SH 3	AB -5'0" C126	B	ON ON ACTIVE			
3	18	LT-208 ()	BA	"B" BORIC ACID TANK LEVEL TRANSMITTER FOR LI-208	26017, SH 3	AB -5'0" C126	B	ON ON ACTIVE			
2	18	LT-3001 ()	CVCS	RWST LEVEL	26015, SH 2	YD 14'6" N SIDE RWST	S	ON ON ACTIVE			
2	18	LT-3002 ()	CVCS	RWST LEVEL	26015, SH 2	YD 14'6" N SIDE RWST	S	ON ON ACTIVE			
2	18	LT-3003 ()	CVCS	RWST LEVEL	26015, SH 2	YD 14'6" NE SIDE RWST	S	ON ON ACTIVE			
2	18	LT-3004 ()	CVCS	RWST LEVEL	26015, SH 2	YD 14'6" NE SIDE RWST	S	ON ON ACTIVE			
1	18	LT-5282 ()	COND	CST LEVEL	26005, SH 3	YD 14'6" CST SHACK	S	ON ON ACTIVE			
	14	NPY402 ()	RCS	PANEL	34027, SH 1	AB 14' 6" HALLWAY AREA	S 10	N/A N/A PASSIVE			
	14	NPY404 ()	RCS	PANEL	34027, SH 1	AB 14' 6" HALLWAY AREA	S 10	N/A N/A PASSIVE			
1	5	P-004 ()	AFW	TERRY TURBINE AUXILIARY FEED PUMP	26005, SH 3	TB 1' 6" TERRY TURBINE	S	OFF ON ACTIVE			

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

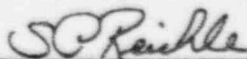
REPORT No. 03-0240-1357
REVISION 2

TRAIN	EQ CL	EQUIP ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	6	P-005A ()	SW	'A' SERVICE WATER PUMP	26008, SH 2	CW 14'6" SW PMP AREA	S 19	OFF/ON ON ACTIVE			Breaker A306
3OP	6	P-005B ()	SW	'B' SERVICE WATER PUMP	26008, SH 2	CW 14'6" SW PMP AREA	S 19	OFF/ON ON ACTIVE	DV20-BKR 21		Breaker A502
2	6	P-005C ()	SW	'C' SERVICE WATER PUMP	26008, SH 2	CW 14'6" SW PMP AREA	S 19	OFF/ON ON ACTIVE			Breaker A407
2	5	P-009A ()	AFW	"A" AUXILIARY FEEDWATER PUMP ASSEMBLY	26005, SH 3	TB 1'8" ELEC AUX FEED PUMP	S 19	OFF ON ACTIVE			Breaker A307
2	5	P-009B ()	AFW	"B" AUXILIARY FEEDWATER PUMP ASSEMBLY	26005, SH 3	TB 1'6" ELEC AUX FEED PUMP	S 19	OFF ON ACTIVE			Breaker A406
1	-	P-011A ()	RBCCW	"A" RBCCW PUMP	26022, SH 1	AB -25'6" RBCCW PUMP/HX AREA	S 19	ON/OFF ON ACTIVE			Breaker A311
1OP	5	P-011B ()	RBCCW	"B" RBCCW PUMP	26022, SH 1	AB -25'6" RBCCW PUMP/HX AREA	S 19	ON/OFF ON ACTIVE	DV20-BKR 21		Breaker A504
2	5	P-011C ()	RBCCW	"C" RBCCW PUMP	26022, SH 1	AB -25'6" RBCCW PUMP/HX AREA	S 19	ON/OFF ON ACTIVE			Breaker A402
1	5	P-018A ()	CVCS	"A" CHARGING PUMP	26017, SH 1	AB -25'6" CH PMP AREA	SR	OFF ON ACTIVE	B51		
1/2 OP	5	P-018B ()	CVCS	"B" CHARGING PUMP	26017, SH 1	AB -25'6" CH PMP AREA	SR	OFF ON ACTIVE	B51/B61		
2	5	P-018C ()	CVCS	"C" CHARGING PUMP	26017, SH 1	AB -25'6" CH PMP AREA	SR	OFF ON ACTIVE	B61		

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Stephen P. Reichle



12/12/95

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DATE 12/12/95

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

REPORT No. 03-0240-1367
REVISION 2

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	5	P-019A	CVCS	"A" BORIC ACID TRANSFER PUMP 26017, SH 3		AB -5' 6" BAST AREA	SR	OFF ON ACTIVE	B61		
		()									
	5	P-019A	CVCS	"A" BORIC ACID TRANSFER PUMP 26017, SH 3		AB -5' 6" BAST AREA	IPEEE	STOP RUN ACTIVE	B61		
		()									
2	5	P-019B	CVCS	"B" BORIC ACID TRANSFER PUMP 26017, SH 3		AB -5' 6" BAST AREA	SR	OFF ON ACTIVE	B61		
		()									
	5	P-019B	CVCS	"B" BORIC ACID TRANSFER PUMP 26017, SH 3		AB -5' 6" BAST AREA	IPEEE	STOP RUN ACTIVE	B61		
		()									
2	5	P-041A	HPSI/ RBCCW	'A' HPSI PUMP & SEAL COOLER 26015, SH 2		AB -45'6" A SAFEGUARDS	S 19,20	OFF OFF PASSIVE	A308		Breaker A308
		()									
		P-041A		HPSI PUMP		AB -45'6" A SAFEGUARDS	IPEEE				
		()									
2	5	P-041B	HPSI/ RBCCW	'B' HPSI PUMP & SEAL COOLER 26015, SH 2		AB -45'6" C SAFEGUARDS	S 19,20	OFF OFF PASSIVE	A503		Breaker A503
		()									
		P-041B		HPSI PUMP		AB -45'6" C SAFEGUARDS	IPEEE				
		()									
2	5	P-041C	HPSI/ RBCCW	'C' HPSI PUMP & SEAL COOLER 26015, SH 2		AB -45'6" B SAFEGUARDS	S 19,20	OFF OFF PASSIVE	A403		Breaker A403
		()									
		P-041C		HPSI PUMP		AB -45'6" B SAFEGUARDS	IPEEE				
		()									
1	6	P-042A	LPSI/ RBCCW	"A" LPSI PUMP ASSEMBLY & SEAL COOLER 26015, SH 1		AB -45'6" A SAFEGUARDS	S 19,20	OFF ON ACTIVE			Breaker A309
		()									

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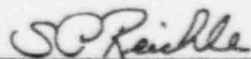
MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	6	P-042B ()	LPSI/ RBCCW	"B" LPSI PUMP ASSEMBLY & SEAL COOLER	26015, SH 1	AB -45'6"	S 19,20	OFF ON ACTIVE			Breaker A404
		P-043A ()	RBCCW	CONTAINMENT SPRAY PUMP SEAL COOLER		AB -45'6"	S 20				
		P-043A ()	CS	CONTAINMENT SPRAY PUMP		AB -45'6"	IPEEE	STOP START ACTIVE			
		P-043B ()	RBCCW	CONTAINMENT SPRAY PUMP SEAL COOLER		AB -45'6"	S 20				
		P-043B ()	CS	CONTAINMENT SPRAY PUMP		AB -45'6"	IPEEE	STOP START ACTIVE			
1	6	P-122A ()	HVAC	'A' DC SWGR RM CHILLED WATER PUMP	26027, SH 2	TB 14' 6"	SR	OFF ON ACTIVE	B52		
2	6	P-122B ()	HVAC	'B' DC SWGR RM CHILLED WATER PUMP	26027, SH 2	TB 14' 6"	SR	OFF ON ACTIVE	B62		
1		P-178A ()	DG	ENGINE DRIVEN FUEL OIL PUMP	26010, SH 1	WH 14' 6"		OFF ON ACTIVE			
2		P-178B ()	DG	ENGINE DRIVEN FUEL OIL PUMP	26010, SH 1	WH 14' 6"		OFF ON ACTIVE			
	18	PDC-6475 ()	SW	SW STRAINER "A" DIFF PRESS CONTROLER	26008, SH 2			S			
	18	PDC-6481 ()	SW	SW STRAINER "B" DIFF PRESS CONTROLER	26008, SH 2			S			

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
	18	PDC-6488 ()	SW	SW STRAINER "C" DIFF PRESS CONTROLLER	26008, SH 2		S				
1	18	PI-1013A ()	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA10		PT-1013A
2	18	PI-1013B ()	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA20		PT-1013B
1	18	PI-1013C ()	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA30		PI-1013C
2	18	PI-1013D ()	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA40		PT-1013D
1	18	PI-1023A ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA10		PT-1023A
2	18	PI-1023B ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA2J		PT-1023B
1	18	PI-1023C ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA30		PT-1023C
2	18	PI-1023D ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CB 36"6" C05F	BR	ON ON ACTIVE	VA40		PT-1023D
2	18	PI-103 ()	RCS	PRESSURIZER PRESSURE	26014, SH 2	CB 36"6" C03F	BR	ON ON ACTIVE	VA20		PT-103
1	18	PI-103-1 ()	RCS	PRESSURIZER PRESSURE	26014, SH 2	CB 36"6" C03F	BR	ON ON ACTIVE	VA10		PT-103-1

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
		PS501	ELEC DC	24 vDC UNREGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
		PS502	ELEC DC	24 vDC UNREGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
		PS503	ELEC DC	15 vDC REGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
		PS504	ELEC DC	15 vDC REGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
		PS601	ELEC DC	24 vDC UNREGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
		PS602	ELEC DC	24 vDC UNREGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
		PS603	ELEC DC	15 vDC REGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
		PS604	ELEC DC	15 vDC REGULATED POWER SUPPLY			IPEEE	ENERG ENERG ACTIVE			
		()									
1	18	PT-100X	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C211	B	ON ON ACTIVE			
		()									
2	18	PT-100Y	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C140	B	ON ON ACTIVE			
		()									
1	18	PT-1013A	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C173	B	ON ON ACTIVE			
		()									

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	18	PT-1013B ()	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C207	B	ON ON ACTIVE			
1	18	PT-1013C ()	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C252	B	ON ON ACTIVE			
2	18	PT-1013D ()	MS	#1 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C206	B	ON ON ACTIVE			
1	18	PT-1023A ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C205	B	ON ON ACTIVE			
2	18	PT-1023B ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C172	B	ON ON ACTIVE			
1	18	PT-1023C ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C203	B	ON ON ACTIVE			
2	18	PT-1023D ()	MS	#2 STEAM GENERATOR PRESSURE	26002, SH 1	CE 14'6" C204	B	ON ON ACTIVE			
1	18	PT-102A ()	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C211	B	ON ON ACTIVE			
2	18	PT-102B ()	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C140	B	ON ON ACTIVE			
1	18	PT-102C ()	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C254	B	ON ON ACTIVE			
2	18	PT-102D ()	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C255	B	ON ON ACTIVE			

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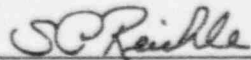
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TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	18	PT-103	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C140	B	ON ON ACTIVE			
		()									
1	18	PT-103-1	RCS	PRESSURIZER PRESSURE	26014, SH 2	CE -3'6" C211		ON ON ACTIVE			
		()									
	18	PT-8113	CSAS	CONTAINMENT PRESSURE TRANSMITTERS	26028, SH 1		S 11	ON ON PASSIVE	No		
		()									
	18	PT-8114	CSAS	CONTAINMENT PRESSURE TRANSMITTERS	26028, SH 1		S 11	ON ON PASSIVE	No		
		()									
	18	PT-8115	CSAS	CONTAINMENT PRESSURE TRANSMITTERS	26028, SH 1		S 11	ON ON PASSIVE	No		
		()									
	18	PT-8116	CSAS	CONTAINMENT PRESSURE TRANSMITTERS	26028, SH 1		S 11	ON ON PASSIVE	No		
		()									
1/2	20	PZR-LI	RCS	PRESSURIZER LEVEL INDICATION VIA SPDS	26014, SH 2		BR	OPERABLE OPERABLE ACTIVE	D11	B-18767-413-107	LT-110X & 110Y
		()									
1/2	20	PZR-PI	RCS	PRESSURIZER PRESSURE INDICATION VIA SPDS	26014, SH 2		BR	OPERABLE OPERABLE ACTIVE	VR11/VR21	B-18767-412-105	PT-102A & 102B
		()									
	20	RC02A1		ESAS ACTUATION CABINET		CB 36' 6" CONTROL RM	S 10				
		()									
	20	RC02B		ESAS ACTUATION CABINET "5"		CB 36' 6" CONTROL RM	S 10				
		()									
	20	RC02B2		ESAS ACTUATION CABINET		CB 36' 6" CONTROL RM	S 10				
		()									

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

REPORT No. 03-0240-1367
REVISION 2

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TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES REQD STATE EQ FUNCTION	NORM STATE	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
	20	RC02C		ESAS ACTUATION CABINET "6"		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	RC02C3		ESAS ACTUATION CABINET		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	RC02D4		ESAS ACTUATION CABINET		CB 36' 6"	S 10				
		()				CONTROL RM					
	20	RC02E				CB 36' 6"	B 10				
		()				CONTROL RM					
	20	RC05B		RPS PANEL "B" LOOP		CB 36' 6"	S 10				
		()				NEXT TO RPS					
	20	RC30A-1		SPEC-200 CABINET RC-30A-1		CB 36' 6"	S 10				
		()				BEHIND C01R					
	20	RC30B		SPEC-200 CABINET RC-30B		CB 36' 6"	S 10				
		()				BEHIND C03R					
	20	RC30B-1		SPEC-200 CABINET RC-30B-1		CB 36' 6"	S 10				
		()				BEHIND C01R					
	20	RC31A		SPEC-200 CABINET RC-31A		CB 36' 6"	S 10				
		()				NEAR C01					
	20	RC31B		SPEC-200 CABINET RC-31B		CB 36' 6"	S 10				
		()				NEAR C01					
1	20	RS1	ELEC AC	AUTO TRANSFER SWITCH RS1	30024	AB 14' 6"	S	CLOSED CLOSED PASSIVE	REG XFMR UAC1		
		()				EAST DC GEAR					

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2	20	RS2 ()	ELEC AC	AUTO TRANSFER SWITCH	RS2 30024	AB 14' 6" WEST DC GEAR	S	CLOSED CLOSED PASSIVE	REG XFMR UAC2		
1	8	SV-4188 ()	MS	TERRY TURBINE TRIP THROTTLE VALVE	26002, SH 1	TB 7'6" TERRY AUX FEED PUMP	SR	CLOSED OPEN ACTIVE	DV20-BKR 7, 8		
3	21	T-003 ()	RBCCW	RBCCW SURGE TANK	26022, SH 1	EB 7'10" RBCCW SURGE TANK	S	N/A N/A PASSIVE			
		T-005 ()		VOLUME CONTROL TANK		AB -5'6" NW AREA	IPEEE				
3	21	T-008A ()	BA	BORIC ACID TANK	26017, SH 3	AB -5'6" CWRT/CWMT AREA	S	N/A N/A PASSIVE			
3	21	T-008B ()	BA	BORIC ACID TANK	26017, SH 3	AB -5'6" CWRT/CWMT AREA	S	N/A N/A PASSIVE			
2	21	T-038 ()	RCS	PRESSURIZER RELIEF QUENCH TANK	26014, SH 2	CE -3'6" C140	S	OPERABLE OPERABLE PASSIVE			
1	21	T-040 ()	COND	CONDENSATE STORAGE TANK	26005, SH 3	YD 14'6" CST & HX AREA	S	N/A N/A PASSIVE			
2	21	T-041 ()	CVCS	REFUELING WATER STORAGE TANK	26015, SH 2	YD 14'6" RWST & HX AREA	S	N/A N/A PASSIVE			
1	21	T-048A ()	DG	"A" DIESEL ENGINE FUEL OIL SUPPLY DAY TANK	26010, SH 1	WH 38'6" DG DAY TANK	S	N/A N/A PASSIVE			
2	21	T-048B ()	DG	"B" DIESEL ENGINE FUEL OIL SUPPLY DAY TANK	26010, SH 1	WH 38'6" DG DAY TANK	S	N/A N/A PASSIVE			

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1	21	T-049A ()	DG	"A" DIESEL ENGINE STARTING AIR26018, SH 5 TANK A		WH 14'6" A DG ROOM	S	N/A N/A PASSIVE			
1	21	T-049B ()	DG	"A" DIESEL ENGINE STARTING AIR26018, SH 5 TANK B		WH 14'6" A DG ROOM	S	N/A N/A PASSIVE			
2	21	T-049C ()	DG	"B" DIESEL ENGINE STARTING AIR26018, SH 5 TANK C		WH 14'6" B DG ROOM	S	N/A N/A PASSIVE			
2	21	T-049D ()	DG	"B" DIESEL ENGINE STARTING AIR26018, SH 5 TANK D		WH 14'6" B DG ROOM	S	N/A N/A PASSIVE			
3	21	T-098 ()	HVAC	CHILLED WATER SURGE TANK	26027, SH 2	AB 54' 6" CHILL EXP TK	S	N/A N/A PASSIVE			
	20	T040 ()	ELEC	DIESEL GENERATOR PANEL		WH 14' 6" A DG ROOM	S				
	20	T041 ()	ELEC	DIESEL GENERATOR PANEL		WH 14' 6" B DG ROOM	S				
1	19	TE-112CA ()	RCS	RCS LOOP 1A COLD LEG TEMPERATURE RTD FOR TT-112CA	26014, SH 1	CE -3'6" LOOP 1	S	ON ON ACTIVE			
2	19	TE-112CC ()	RCS	RCS LOOP 1A COLD LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 1	S	ON ON ACTIVE			
1	19	TE-112HA ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 1	S	ON ON ACTIVE			
2	19	TE-112HB ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 1	S	ON ON ACTIVE			

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	19	TE-112HC ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 1	S	ON ON ACTIVE			
2	19	TE-112HD ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 1	S	ON ON ACTIVE			
1	19	TE-122CB ()	RCS	RCS LOOP 2B COLD LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 2	S	ON ON ACTIVE			
2	19	TE-122CD ()	RCS	RCS LOOP 2B COLD LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 2	S	ON ON ACTIVE			
1	19	TE-122HA ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 2	S	ON ON ACTIVE			
2	19	TE-122HB ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 2	S	ON ON ACTIVE			
1	19	TE-122HC ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 2	S	ON ON ACTIVE			
2	19	TE-122HD ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE RTD	26014, SH 1	CE -3'6" LOOP 2	S	ON ON ACTIVE			
1	19	TE-351X ()	LPSI	SHUTDOWN COOLING TEMPERATURE ELEMENT	26015, SH 1	AG -45'6" K SAFEGUARDS	S	ON ON ACTIVE			
1	19	TE-351Y ()	LPSI	SHUTDOWN COOLING TEMPERATURE ELEMENT	26015, SH 1	AB -45'6" A SAFEGUARDS	S	ON ON ACTIVE			
1	18	TI-112CA ()	RCS	RCS LOOP 1A COLD LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36'6" C03F	BR	ON ON ACTIVE	VA10		TT-112CA, TE-112CA

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	18	TI-112CC ()	RCS	RCS LOOP 1A COLD LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA30		TT-112CC, TE-112CC
1	18	TI-112HA ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA10		TT-112HA, TE-112HA
2	18	TI-112HB ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA20		TT-112HB, TE-112HB
1	18	TI-112HC ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA30		TT-112HC, TE-112HC
2	18	TI-112HD ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA40		TT-112HD, TE-112HD
1	18	TI-122CB ()	RCS	RCS LOOP 2B COLD LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA20		TT-122CB, TE-122CB
2	18	TI-122CD ()	RCS	RCS LOOP 2B COLD LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA40		TT-122CD, TE-122CD
1	18	TI-122HA ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA10		TT-122HA, TE-122HA
2	18	TI-122HB ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA20		TT-122HB, TE-122HB
1	18	TI-122HC ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA30		TT-122HC, TE-122HC
2	18	TI-122HD ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE INDICATOR	26014, SH 1	CB 36"6" C03F	BR	ON ON ACTIVE	VA40		TT-122HD, TE-122HD

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	18	TR-351 ()	LPSI	SHUTDOWN COOLING TEMPERATURE RECORDER	26015, SH 1		SR	ON ON ACTIVE	VR11		TT-351X,Y; TE-351X,Y
1	18	TT-112CA ()	RCS	RCS LOOP 1A COLD LEG TEMPERATURE TRANSMITTER FOR TI-112CA	26014, SH 1	CB 36"6" RC-30A-1	B	ON ON ACTIVE			TE-112CA
2	18	TT-112CC ()	RCS	RCS LOOP 1A COLD LEG TEMPERATURE TRANSMITTER FOR TI-112CC	26014, SH 1	CB 36"6" RC-30C	B	ON ON ACTIVE			TE-112CC
1	18	TT-112HA ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE TRANSMITTER FOR TI-112HA	26014, SH 1	CB 36"6" RC-30A-1	B	ON ON ACTIVE			TE-112HA
2	18	TT-112HB ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE TRANSMITTER FOR TI-112HB	26014, SH 1	CB 36"6" RC-30B-1	B	ON ON ACTIVE			TE-112HB
1	18	TT-112HC ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE TRANSMITTER FOR TI-112HC	26014, SH 1	CB 36"6" RC-30C	B	ON ON ACTIVE			TE-112HC
2	18	TT-112HD ()	RCS	RCS LOOP 1 HOT LEG TEMPERATURE TRANSMITTER FOR TI-112HD	26014, SH 1	CB 36"6" RC-30D	B	ON ON ACTIVE			TE-112HD
1	18	TT-122CB ()	RCS	RCS LOOP 2B COLD LEG TEMPERATURE TRANSMITTER FOR TI-122CB	26014, SH 1	CB 36"6" RC-30B-1	B	ON ON ACTIVE			TE-122CB
2	18	TT-122CD ()	RCS	RCS LOOP 2B COLD LEG TEMPERATURE TRANSMITTER FOR TI-122CD	26014, SH 1	CB 36"6" RC-30D	B	ON ON ACTIVE			TE-122CD
1	18	TT-122HA ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE TRANSMITTER FOR TI-122HA	26014, SH 1	CB 36"6" RC-30A-1	B	ON ON ACTIVE			TE-122HA
2	18	TT-122HB ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE TRANSMITTER FOR TI-122HB	26014, SH 1	CB 36"6" RC-30B-1	B	ON ON ACTIVE			TE-122HB

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
1	18	TT-122HC ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE TRANSMITTER FOR TI-122HC	26014, SH 1	CB 36'6" RC-30C	B	ON ON ACTIVE			TE-122HC
2	18	TT-122HD ()	RCS	RCS LOOP 2 HOT LEG TEMPERATURE TRANSMITTER FOR TI-122HD	26014, SH 1	CB 36'6" RC-30D	B	ON ON ACTIVE			TE-122HD
1	18	TT-351X ()	LPSI	SHUTDOWN COOLING TEMPERATURE TRANSMITTER	26015, SH 1	AB -45'6" A SAFEGUARDS	S	ON ON ACTIVE			TE-351X
1	18	TT-351Y ()	LPSI	SHUTDOWN COOLING TEMPERATURE TRANSMITTER	26015, SH 1	AB -45'6" A SAFEGUARDS	S	ON ON ACTIVE			TE-351Y
1	4	UAC1 ()	ELEC AC	REGULATING TRANSFORMER UAC1	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	MCC 22-1E		
2	4	UAC2 ()	ELEC AC	REGULATING TRANSFORMER UAC2	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	MCC 22-1F		
1	4	UAC3 ()	ELEC AC	REGULATING TRANSFORMER UAC3	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	MCC 22-2E		
2	4	UAC4 ()	ELEC AC	REGULATING TRANSFORMER UAC4	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	MCC 22-2F		
1	4	UB5 (24C1-1X)	ELEC AC	480V XFMR TO 22E	30001	TB 36' 6" WEST 480V	S	ON ON PASSIVE	BKR -A303		
2	4	UB6 (24D7-1X)	ELEC AC	480V XFMR TO 22F	30001	AB 36' 6" EAST 480V	S	ON ON PASSIVE	BKR-A409		
1	14	VA10 (VIAC-1)	ELEC AC	120VAC VITAL INST PANEL VA10	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	INV NO 1		

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	14	VA20 (VIAC-2)	ELEC AC	120VAC VITAL INST PANEL VA20	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	INV NO 2		
1	14	VA30 (VIAC-3)	ELEC AC	120VAC VITAL INSTRUMENT PANEL VA30	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	INV NO 3		
2	14	VA40 (VIAC-4)	ELEC AC	120VAC VITAL INSTRUMENT PANEL VA40	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	INV NO 4		
1	14	VR11 (IAC1)	ELEC AC	120VAC INST PANEL VR11	30024	AB 14' 6" EAST DC GEAR	S	ON ON PASSIVE	REG XFMR UAC1		
2	14	VR21 (IAC2)	ELEC AC	120VAC INST PANEL VR21	30024	AB 14' 6" WEST DC GEAR	S	ON ON PASSIVE	REG XFMR UAC2		
1	16	VS1 ()	ELEC AC	STATIC SWITCH VS1	30024	AB 14' 6" EAST DC GEAR	B	CLOSED CLOSED PASSIVE	INV NO 1		
2	16	VS2 ()	ELEC AC	STATIC SWITCH VS2	30024	AB 14' 6" WEST DC GEAR	B	CLOSED CLOSED PASSIVE	INV NO 2		
1	16	VS3 ()	ELEC AC	STATIC SWITCH VS3	30024	AB 14' 6" EAST DC GEAR	B	CLOSED CLOSED PASSIVE	INV NO 3		
2	16	VS4 ()	ELEC AC	STATIC SWITCH VS4	30024	AB 14' 6" WEST DC GEAR	B	CLOSED CLOSED PASSIVE	INV NO 4		
1	21	X-018A ()	RBCCW	"A" RBCCW HEAT EXCHANGER	26022, SH 1	AB -25'6" RBCCW HX AREA	S	N/A N/A PASSIVE			
30P	21	X-018B ()	RBCCW	"B" RBCCW HEAT EXCHANGER	26022, SH 1	AB -25'6" RBCCW HX AREA	S	N/A N/A PASSIVE			

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	21	X-018C	RBCCW	"C" RBCCW HEAT EXCHANGER	26022, SH 1	AB -25'6" RBCCW HX AREA	S	N/A N/A PASSIVE			
		()									
3	21	X-020A	RBCCW	"A" SPENT FUEL POOL COOLING HEAT EXCHANGER	26022, SH 2	AB -5'6" SFP HEAT EXCHANGER	S 20	N/A N/A PASSIVE			
		()									
3	21	X-020B	RBCCW	"B" SPENT FUEL POOL COOLING HEAT EXCHANGER	26022, SH 2	AB -5'6" SFP HEAT EXCHANGER	S 20	N/A N/A PASSIVE			
		()									
3	21	X-021	CVCS	REGEN HEAT EXCHANGER	26017, SH 1	RB 5'10" C RCP AREA	S	N/A N/A PASSIVE			
		()									
3	21	X-022	RBCCW	LETDOWN HEAT EXCHANGER	26022, SH 5	AB -5'6" LETDOWN HX AREA	S 20	N/A N/A PASSIVE			
		()									
1	21	X-023A	LPSI/ RBCCW	"A" SHUTDOWN COOLING HEAT EXCHANGER	26015, SH 1	AB -45'6" A SAFEGUARDS	S 20	N/A N/A PASSIVE			
		()									
3	21	X-023A	RBCCW	"A" SHUTDOWN COOLING HEAT EXCHANGER	26022, SH 2	AB -45'6" A SAFEGUARDS ROOM	S 20	N/A N/A PASSIVE			
		()									
1	21	X-023B	LPSI/ RBCCW	"B" SHUTDOWN COOLING HEAT EXCHANGER	26015, SH 1	AB -45'6" B SAFEGUARDS	S	N/A N/A PASSIVE			
		()									
3	21	X-023B	RBCCW	"B" SHUTDOWN COOLING HEAT EXCHANGER	26022, SH 2	AB -45'6" B SAFEGUARDS ROOM	S 20	N/A N/A PASSIVE			
		()									
3	21	X-024	RBCCW	PRIMARY DRAIN TANK AND QUENCH TANK COOLERS	26022, SH 4	RB -22'6" NE CORNER	S 20				PASSIVE
		()									
3		X-034A	RBCCW	CEDM COOLER "A"	26022, SH 4		S 20				PASSIVE
		()									

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MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	10	X-034B	RBCCW	CEDM COOLER "B"	26022, SH 4		S				
		()					20	PASSIVE			
3	10	X-034C	RBCCW	CEDM COOLER "C"	26022, SH 4		S				
		()					20	PASSIVE			
1	10	X-035A	RBCCW/ HVAC	"A" CONTAINMENT AIR RECIRC COOLING COIL (F14A)	26022, SH 5	RB 38'6" NORTH END FUEL POOL	B 20	N/A N/A PASSIVE			
2	10	X-035B	RBCCW/ HVAC	"B" CONTAINMENT AIR RECIRC COOLING COIL (F14B)	26022, SH 5	RB 38'6" NORTH END FUEL POOL	B 20	N/A N/A PASSIVE			
1	10	X-035C	RBCCW/ HVAC	"C" CONTAINMENT AIR RECIRC COOLING COIL (F14C)	26022, SH 5	RB -3'6" NORTH END	B 20	N/A N/A PASSIVE			
2	10	X-035D	RBCCW/ HVAC	"D" CONTAINMENT AIR RECIRC COOLING COIL (F14D)	26022, SH 5	RB -3'6" NORTH END	B 20	N/A N/A PASSIVE			
1	10	X-036A	HVAC/ RBCCW	'A' SAFEGUARDS (ESF) ROOM AIR REC FAN CLG COIL	26028, SH 4	AB -45' 6" A SAFEGUARDS	S 20	N/A N/A PASSIVE			
2	10	X-036B	HVAC/ RBCCW	'B' SAFEGUARDS (ESF) ROOM AIR REC FAN CLG COIL	26028, SH 4	AB -45' 6" A SAFEGUARDS	S 20	N/A N/A PASSIVE			
1	10	X-042A	HVAC	'A' REFRIGERATION CYCLE FAN F21A SUCT CLG COIL	26027, SH 3	AB 38' 6" CONTROL RM	B	N/A N/A PASSIVE			
2	10	X-042B	HVAC	'B' REFRIGERATION CYCLE FAN F21B SUCT CLG COIL	26027, SH 3	AB 38' 6" CONTROL RM	B	N/A N/A PASSIVE			
3	21	X-051	RBCCW	DEGASIFIER EFFLUENT COOLER	26022, SH 5		S				
		()					20	PASSIVE			

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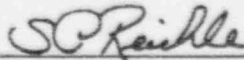
MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
3	21	X-064	RBCCW	SAMPLE COOLER (RACK)	26022, SH 5		S				
		()					20	PASSIVE			
3	21	X-065	RBCCW	SAMPLE COOLER (RACK)	26022, SH 5		S				
		()					20	PASSIVE			
3	21	X-073A	RBCCW	"A" RCP LUBE OIL COOLER	26022, SH 4	RB 5'10"	B	ON			
		()				"A" RCP AREA	20	ON PASSIVE			
3	21	X-073B	RBCCW	"B" RCP LUBE OIL COOLER	26022, SH 4	RB 5'10"	B	ON			
		()				"B" RCP AREA	20	ON PASSIVE			
3	21	X-073C	RBCCW	"C" RCP LUBE OIL COOLER	26022, SH 4	RB 5'10"	B	ON			
		()				"C" RCP AREA	20	ON PASSIVE			
3	21	X-073D	RBCCW	"D" RCP LUBE OIL COOLER	26022, SH 4	RB 5'10"	B	ON			
		()				"D" RCP AREA	20	ON PASSIVE			
3	21	X-082	RBCCW	QUENCH TANK HEAT EXCHANGER	26022, SH 2		S				
		()					20	PASSIVE			
1	10	X-084A	HVAC	'A' DC SWGR RM CLG COIL	26029, SH 1	AB 14' 6"	B	N/A			
		()				HALLWAY AREA		N/A PASSIVE			
2	10	X-084B	HVAC	'B' DC SWGR RM CLG COIL	26029, SH 1	AB 14' 6"	B	N/A			
		()				HALLWAY AREA		N/A PASSIVE			
1	21	X-169A	HVAC	'A' DC SWGR RM CHILLER CONDENSER	26027, SH 2	TB 14' 6"	S	N/A			
		()				CHILLERS AREA	12	N/A PASSIVE			
1	12	X-169AC	HVAC	'A' DC SWGR RM CHILLER COMPRESSOR	26027, SH 2	TB 14' 6"	BR	OFF	B52		
		()				CHILLERS AREA	16	ON ACTIVE			

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TRAIN	EQ CL	EQUIP. ID (MAN. ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NOTES	NORM REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
2	21	X-169B ()	HVAC	'B' DC SWGR RM CHILLER CONDENSER	26027, SH 2	TB 14' 6" CHILLERS AREA	S 12	N/A N/A PASSIVE			
3	12	X-169BC ()	HVAC	'B' DC SWGR RM CHILLER COMPRESSOR	26027, SH 2	TB 14' 6" CHILLERS AREA	BR 1F	OFF ON ACTIVE	B62		
1	21	X-169C ()	HVAC	"A" DC SWGR ROOM CHILLER EVAPORATOR	26027, SH 2		B 12	N/A N/A PASSIVE			
2	21	X-169D ()	HVAC	"B" DC SWGR ROOM CHILLER EVAPORATOR	26027, SH 2		B 12	N/A N/A PASSIVE			
1	10	X-181A ()	HVAC	'A' WEST 480V LOAD CENTER ROOM CLG COIL	26027, SH 1	TB 36' 6" WEST 480V	S	N/A N/A PASSIVE			
1	10	X-181B ()	HVAC	'B' WEST 480V LOAD CENTER ROOM CLG COIL	26027, SH 1	TB 36' 6" WEST 480V	B	N/A N/A PASSIVE			
1	10	X-182 ()	HVAC	CABLE VAULT ROOM COOLING COIL	26027, SH 1	AB 45' 0" TB CABLE VAULT	B	N/A N/A PASSIVE			
2	10	X-183 ()	HVAC	3.9 & 4.16 KV SWGR ROOM CLG COIL	26027, SH 1	AB 56' 6" 6.9 KV SWGR	B	N/A N/A PASSIVE			

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

Stephen P. Reichle  12/12/95
 Print or Type Name/Title Signature Date

For OPS review, see NGP 5.05 review, documented in NU memo ES-SD-95-002.
 Print or Type Name/Title Signature Date

MILLSTONE UNIT 2 SQUG PROJECT
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIP. ID (MAN ID)	SYSTEM	EQUIPMENT DESCRIPTION	25203-DRAWING NUMBER	BUILDING FLOOR EL. ROOM/GRID	EVAL NORM STATE NOTES REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS
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1. The position of this air operated valve is controlled by the solenoid valve listed under the "Required Support Systems" Column.
2. (Note no longer used)
3. Valve is equipped with handwheels to facilitate manual operation on a loss of instrument (control) air.
4. This is a passive, pneumatic valve and therefore does not require either a seismic or relay review. The valve is included on SSEL for completeness only.
5. Dampers were mechanically interlocked with 2-HV-313, PDCR 2-057-92 will remove motor operator and install brackets to lock dampers in a balanced condition.
6. Dampers were mechanically interlocked with 2-HV-316, PDCR 2-057-92 will remove motor operator and install brackets to lock dampers in a balanced condition.
7. Dampers were mechanically interlocked with 2-HV-325, PDCR 2-057-92 will remove motor operator and install brackets to lock dampers in a balanced condition.
8. Dampers were mechanically interlocked with 2-HV-327, PDCR 2-057-92 will remove motor operator and install brackets to lock dampers in a balanced condition.
9. No trip function is provided from any Fire Protection Panel to this damper.
10. This component was added to the SSEL as a result of the relay evaluation process. This panel, or cabinet, contains at least one electrical contact device required to support the operation of safe shutdown component(s) and therefore requires a seismic evaluation.
11. This transmitter provides an input signal to CSAS initiation logic and needs to be seismically evaluated to ensure a loss of integrity does not initiate a containment spray signal.
12. This component may fall within the "rule-of-the-box", and needs to be investigated during the preliminary walkdown.
13. Boundary isolation valve.
14. Valve is used to isolate the charging pumps from the PWST.
15. Valve fails closed.
16. DC Switchgear Room chiller compressor is grouped with the respective chiller condenser (X169A or B) under "rule-of-the-box".
17. Upon loss of control air valve will fail open causing a small flow diversion from the service water system.
18. Dampers are retained on SSEL for information purposes only, and to ensure that the dampers and their controls are evaluated should the design change be reversed in the future.
19. A relay evaluation will be performed for the pump breaker in the "Required Support Systems" column.
20. A seismic evaluation of this component or it's subcomponents is required to maintain RBCCW system pressure boundary.
21. Valve fails open on loss of control air.
22. Valve fails "as-is" on loss of control air.
23. Breakers on Emergency Buses 24C (A3), 24D (A4) and 24E (A5) will load shed on loss of offsite power (LOOP).
24. Reclosure of breaker will depend upon status of offsite power.
25. (Note no longer used)
26. The backup nitrogen bottles for 2-CH-507 are not shown on 25203-26017 Sheet 2.
27. Valve needs to remain closed to ensure that the boric acid solution is not diluted by makeup water sources.
28. Valve can be manually actuated by use of local handwheel is necessary.
29. Instrument air was removed from valves 2-CHW-4 and 2-CHW-34 by PRCR No. 2-013-93. Removal of the air supply fails the valves so that there is a direct flow of chilled water through the A/C unit with no bypass of the A/C unit.
30. EVAL NOTES LEGEND: B = Rule of the Box, BR = Rule of the Box and Relay Review, Blank = No Entry Necessary; IPEEE = IPEEE Component; N/A = No Evaluation Req'd; S = Seismic Review Only; SR = Seismic and Relay Review
31. EQ. CL. LEGEND: Blank = No Entry Necessary; R = Rugged Component; 0-21 = Corresponds to GIP Equip Classification

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

Stephen P. Reichle  12/12/95
 Print or Type Name/Title Signature Date

For OPS review, see NGP 5.05 review, documented in NU memo ES-SD-95-002.
 Print or Type Name/Title Signature Date

ATTACHMENT C
To VECTRA Report 03-0240-1367

PLANT OPERATING PROCEDURES

In the course of developing the Safe Shutdown Equipment List (SSEL) for Millstone Unit 2, various normal (OP), abnormal (AOP) and emergency (EOP) operating procedures were reviewed in order to identify safe shutdown paths that are covered by existing procedures.

In addition, the SSEL team also reviewed those plant procedures that had been developed for shutting down the plant in the event of a fire (10CFR50, Appendix R). These additional procedures provided insights into additional plant systems and equipment that should be drawn into the SSEL. All procedures reviewed during the SSEL development process are identified in Section 5 of the SSEL report.

Although the plant procedures do not specifically identify an entry condition as a result of the earthquake, Operations confirmed that symptoms developing from the earthquake would lead the operators to the procedures that will support the USI A-46 safe shutdown paths selected for Millstone Unit 2. The primary procedures to be utilized, and a summary of the main steps from these procedures, are identified in Figure 1.

It should also be noted that, although not specifically identified in Figure 1, operators will not be restricted to these procedures. Operators may attempt shutdown using systems and equipment other than those identified in the SSEL as long as using these systems does not prevent the later use of the safe shutdown method identified in the SSEL report.

SUMMARY OF PROCEDURES AND STEPS REQUIRED FOR SHUTDOWN ATTACHMENT C

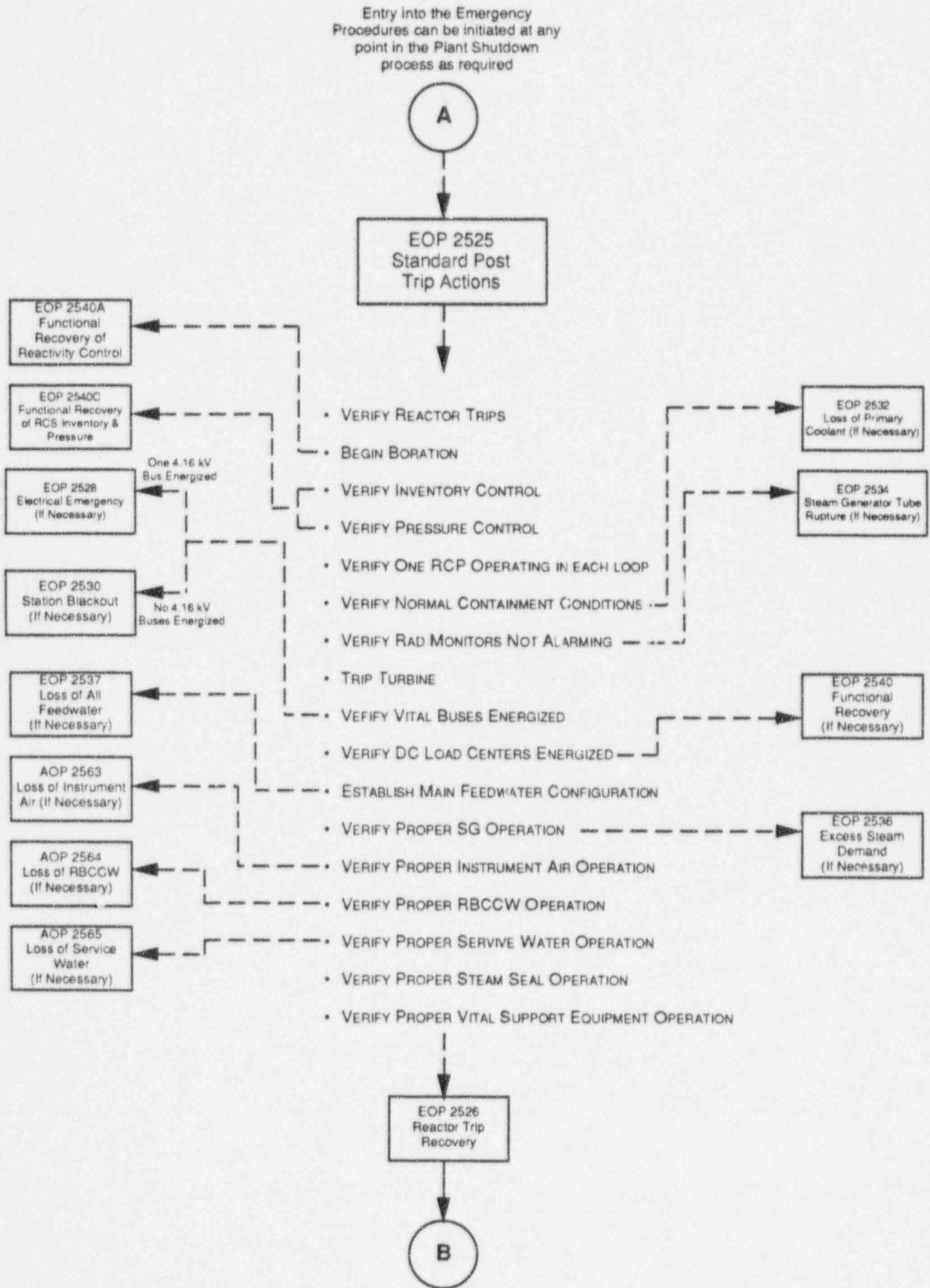


FIGURE 1

Docket No. 50-336
B15469

Attachment 2
Millstone Nuclear Power Station, Unit No. 2
Relay Evaluation Report

January 1996