Docket No. 50-213
B14710

Attachment 1

Haddam Neck Plant

Safe Shutdown Equipment List Report

January 1994

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PREFERRED SAFE SHUTDOWN PATHS FOR CONNECTICUT YANKEE

IN RESPONSE TO:

NRC GENERIC LETTER 87-02/USI A-46

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

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REVISION: 3
DATE: December 17, 1993

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):

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

The purpose of this report is to document 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 Connecticut Yankee Atomic Power Plant. This Report, along with ABB Impell Report 03-0240-1358 satisfy the SQUG commitment to provide a Safe Shutdown Equipment List (SSEL) Report. These reports document the Composite SSEL, Seismic Review Listing and Relay Review Listing 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 ABB Impell Project Instruction (Reference 5.2) and the above SQUG "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment", (Reference 5.5).

2.0 SCOPE/METHOD

Using the guidelines provided in the GIP, Connecticut Yankee operating procedures and P&IDs, ABB Impell has identified those systems and safe shutdown paths which can be used to accomplish the four safe shutdown functions identified in Section 1.0. 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, ABB Impell reviewed the Appendix R safe shutdown methodology (Reference 5.13) and the Emergency/Abnormal Operating Procedures for Connecticut Yankee (Reference 5.6). 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.

The basic principle used to select safe shutdown paths or SSEL components is a safety classification approach with the application of SQUG GIP criteria such that the components selected are only those required to maintain the integrity of the RCS pressure boundary, shutdown the reactor and maintain it in a safe shutdown condition. As allowed for in the GIP approach, 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 safe shutdown paths described in Section 4.0, and to generate the Composite SSEL provided in Reference 5.6 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, etc.).

3.1.3 The components listed below were included on the SSEL, and identified for a seismic review, although not specifically required by the GIP. These large components could challenge the integrity for the shutdown path (i.e., pressure boundary) should they exhibit a significant displacement during the SSE:

- RCP Seal Water Heat Exchanger (E-45-1A)
- RCP Seal Water Return Filter (FL-36-1A)
- Primary Plant Service Water (Adams) Filters (FL-53-1A and 1B)

3.1.4 Technical Specifications exist, or Administrative procedures will be developed, to notify operators of equipment which may be out of service in one of the shutdown paths. (Ref. 5.5, Part I Section 2.4.1)

3.1.5 Procedures will be developed or modified to identify required operator actions.

3.1.6 All electrically operated components for which relays have not been seismically evaluated are assumed to malfunction or spuriously operate during the seismic event.

3.1.7 Only that instrumentation which is absolutely necessary to control and monitor safe shutdown functions or equipment have been included on the SSEL. As recommended in the GIP, instrumentation should be that required to measure primary process variables that will assure the plant is in a safe shutdown condition.

- Neutron Flux
- Pressurizer Level
- Reactor Coolant System Pressure
- Pressurizer Pressure
- RCS Hot and Cold Leg Temperatures
- S/G Pressure
- S/G Level
- RWST Level
- DWST Level
- PWST Level
- CST Level
- Diesel Gen. F.O. Tanks

3.1.8 If achieving and maintaining a safe shutdown condition is dependent on a single item of active 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.

3.1.9 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. 5.5, Sect. 3.2.6).

3.1.10 Passive valves, including those that provide for system or boundary isolation, do not need to consider an "equipment failure" in addition to relay chatter which may cause the valve to spuriously operate. Any relay associated with the passive valve that does not meet the SQUG and EPRI screening criteria (References 5.5 and 5.12) will have corrective action taken, or further evaluations would be performed, to eliminate the need to provide a second "backup" valve.

3.1.11 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).

3.1.12 Self actuated check valves, screens and filters do not need a seismic evaluation (Ref. 5.5, Sect. 3.1.2). However, they are included on the SSEL if credited as an active boundary for one of the functional paths.

3.1.13 Heat exchangers and tanks are considered passive components for the purposes of this project (Ref. 5.5, Sect. 3.3.10). Therefore, no alternate path around them is required to be identified since an active failure is not postulated.

3.1.14 The effects of spurious actuation of safety injection signals (SIAS) has been considered for negative impact 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 system boundary, or adversely impact a shutdown path, the component was included on the SSEL.

3.1.15 Information in the NUSCO PMMS database was used to provide input to component information fields in the SSEL database where possible in order to maintain consistency between the SSEL and the NUSCo component database.

3.1.16 The normal position assumed for a valve 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.

3.1.17 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. Only those relief valves which may be challenged (i.e., become active) as a result of a transient during the recovery from the seismic event are included on the SSEL. Relief valves not included in the above are 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".

3.1.18 A manual scram will be initiated subsequent to the seismic event.

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 if makeup to the RCS is provided from the Boric Acid Mix Tank. The stuck control rod is one of the single active failures postulated for this project.

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 Since the Reactor Coolant System (RCS) makeup water source will be borated in accordance with Technical Specification 3/4.1.2.5 (Ref. 5.9) 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 The process variable required to monitor reactivity is neutron flux. The channels used will be wide range logarithmic as these loops provide indication of reactor power from source range to above 100% full power as well as an indication of rate of power change.

3.2.6 The RWST and Boric Acid Mix Tank will provide sufficient inventory of borated water to meet the cooldown requirements of the RCS, if the minimum water volume specified in Technical Specification 3.1.2.5.6 (Ref. 5.9) is maintained.

3.2.7 Heat tracing for the Boric Acid Mix Tank and lines from the tank to the CVCS Charging Pumps is not required for the 72-hour period. The tank and lines should not cool to the point where boron would begin to precipitate (Ref. 5.17).

3.3 REACTOR COOLANT PRESSURE CONTROL

3.3.1 The RCS pressure/temperature limits are established in Technical Specification 3/4.4.9 (Ref. 5.9). The capability to maintain adequate RCS subcooling for 72 hours without the use of pressurizer heaters has been documented in a NUSCO memo (Ref. 5.14). A review of available Pressurizer heater calculations support the opinion that as long as heat is being removed from the system at a rate greater than that produced from decay heat, and the RCS is being cooled down. However, the current shutdown method has the plant staying in a hot shutdown condition for the 72 hour period and Operations stated that they will need pressurizer heaters.

3.3.2 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.

3.3.3 The design capacity of the Metering Pump is sufficient (i.e. 30 gpm) to compensate for RCS coolant shrinkage and maintain an adequate water level if cooldown is limited to the 25°F/hr or less.

3.4 REACTOR COOLANT INVENTORY CONTROL

3.4.1 RCS leakage is assumed to be within Technical Specification limits, and the RWST is assumed to be capable of providing all necessary coolant makeup needs.

3.4.2 Only borated sources of makeup water from either the RWST or Boric Acid Mix Tank will be utilized for RCS injection.

3.4.3 The CVCS System only requires one charging pump to ensure that this safe shutdown function can be performed. Since the Metering Pump is identified as the primary pump, one of the centrifugal pumps is required as a backup. Both centrifugal Charging Pumps are included on the SSEL to provide additional reliability.

3.5 DECAY HEAT REMOVAL

3.5.1 It is assumed that three of the four Steam Generators are available for decay heat removal and that they will provide sufficient decay heat removal capacity.

3.5.2 Each of the AFW Pumps is capable of providing the required amount of water to cooldown the RCS. (Ref. 5.10, Sect. 10.4.9).

3.5.3 The following sources of water will be required to maintain the plant in a Hot Shutdown condition for 72 hours:

Demineralized Water Storage Tank (DWST)
Condensate Storage Tank (CST), TK-25-1B
Primary Water Storage Tank (PWST)*
Connecticut River via the Fire Water System. (Ref. 5.8, AOP 3.2-51)

* In order to facilitate the transfer of water in this tank to the DWST for makeup feed to the Steam Generators, a gas powered transfer pump has been provided and may be used if necessary. This transfer pump is identified in AOP 3.2.51 (Reference 5.8) which provides instructions for the transfer water to the DWST.

3.5.4 Only one of the four safety valves on each of the Steam Generators is required to remove Reactor core decay heat immediately following the Reactor

shutdown. All four 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 ($P_{S/G}$).

3.5.6 If the pressurizer auxiliary spray path is not available for reducing RCS pressure, it may be necessary to open the Pressurizer PORVs (PR-AOV-568 and PR-AOV-570). The capacity and pressure of the PORV air receiver is sufficient to cycle the valves as many times as necessary to decrease Pressurizer pressure.

3.5.7 Auxiliary feedwater flow to Steam Generators will be controlled in accordance with AOP 3.2-51 to preclude steam generator overfill.

3.5.8 Hotwell level control valve CD-LCVP-1317A has been identified as a component vulnerable to single failure. This single failure could result in the valve opening, which would dump water from the CST (TK-25-1B) to the condenser hotwell. Operator action may be required to isolate this flow diversion. However, sufficient water from other sources should be sufficient for decay heat removal.

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 (Ref. 5.9). Based on this assumption, there is enough diesel fuel to allow operations of both EDGs for the 72-hour period following the seismic event.

3.6.1.2 Identifying the factor which causes the EDGs to start (i.e., loss of offsite power, manual, etc.) 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.

3.6.1.3 In order to maintain the Diesel Generators operable for 72 hours, it may be necessary to obtain fuel oil from an offsite source. The existing underground storage tanks (TK-33-1A/B) will only supply enough fuel to operate its respective diesel for about 24 hours under a fully loaded condition (Ref. 5.16). The existing above ground Fuel Oil Storage Tank (TK-33-1A) is not anchored and has a high probability of failing during an SSE. TK-33-1A has been deleted from the USI A-46 SSEL.

3.6.1.4 Level Indicators (LI-1700A and B) for the Emergency Diesel Generator Fuel Oil Storage Tanks (TK-33-2A/B respectively) have been included to monitor the status of these storage tanks. These level indicators utilize compressed air

from the diesel air start system, and will require that other instrument components connected to this air supply system remain in place. These components have also been included on the SSEL.

3.6.2 ELECTRICAL SYSTEM

3.6.2.1 The station batteries will be relied on to provide emergency AC (via the inverters) and DC power for the short period following the SSE until the EDG(s) have reenergized the battery chargers.

3.6.3 SERVICE WATER SYSTEM

3.6.3.1 Only two of the four Service Water Pumps are required to provide adequate cooling for a safe shutdown and maintain RCS pressure/temperature limits.

3.6.3.2 No instrumentation will be provided on the SSEL to monitor Service Water System operation. System operation can be determined based on equipment observation (i.e., Emergency Diesel Generator high temperature alarm, feeling flow through the piping, flow out of a vent, etc.).

3.6.3.3 Based on assumption 3.1.18 and single failure criteria, safety relief valves for individual heat exchangers in the Service Water System are not considered to be required for over-pressure protection and are not included on the SSEL.

3.6.3.4 The Traveling Water Screens do not need to operate to clear any debris for the duration of the event.

3.6.3.5 Valves SW-V-103A, -103B and -602 are included on the SSEL as backup isolation valves to SW-PCV-606 should it fail to close.

3.6.4 COMPONENT COOLING WATER SYSTEM (CCW)

3.6.4.1 The CCW System is required to ensure that cooling to the RCP Seal Water Heat Exchanger is provided, and in turn, ensure cooling of the centrifugal CVCS Charging Pumps at low flows (< 50 gpm) is provided. No information has been located, nor is there evidence of a calculation indicating the ability of a Charging Pump to run for a sustained period of time without CCW being supplied to the lube oil coolers. It is conservatively assumed the centrifugal Charging Pumps require CCW to support operation for the duration of the event.

3.6.4.2 The required cooling for the Reactor Coolant Pump seals will normally be provided by the CVCS. In the event RCS injection from the CVCS is not available, CCW can provide cooling to the RCP.

3.6.4.3 The source of makeup water to the CCW 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 normal CCW system leak rate is sufficiently low as to not require refilling the CCW surge tank for approximately one week.

3.6.4.4 No instrumentation will be provided on the SSEL to monitor CCW system operation. System operation can be determined based on equipment observation (i.e., feeling flow through the piping, flow out of a vent, etc.). The expansion tank level transmitter (LT-612) is not single failure proof and would require instrument air to operate.

3.6.4.5 The CCW System configuration requires only one of the three system's pumps and one of two heat exchangers operating at the time of the event (NOP 2.8-1, Ref. 5.8). However, all three pumps and both heat exchangers are included on the SSEL. This provides added reliability and redundancy for the safe shutdown function and eliminates the need of an operator to determine if the pump is operating at the time of the SSE.

3.6.4.6 Based on Assumption 3.1.18 and single failure criteria, safety relief valves for individual heat exchangers in the CCW System are not considered to be required for over-pressure protection and are not included on the SSEL.

3.6.4.7 Component Cooling Water System valves CC-V-742 and CC-V-743, which supply cooling water to the boron recovery equipment in the PAB, are normally CLOSED. The equipment supplied by these cooling water lines abandoned in place and is not expected to be returned to service (Ref. 5.6).

3.6.5 CONTROL AIR SYSTEM

3.6.5.1 The Control Air System is not required for a safe plant shutdown. Control Air components, other than control valve accumulators and solenoid operators for certain valves, have not been included on the SSEL.

3.6.5.2 The Control Air System is assumed to fail following the SSE. 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.

3.6.6 HEATING, VENTILATION AND AIR CONDITIONING

3.6.6.1 The Containment Air Recirculation (CAR) fans will not be required since RHR is not necessary to maintain hot shutdown and therefore, containment entry should not required to manually open any RHR valve.

3.6.6.2 The exhaust fan (F-64-1A or F-64-1B) for each of the Diesel Generator Rooms would be required if the respective diesel was being operated at full load. However, this analysis assumes that the diesels would not be fully loaded, even if one diesel failed to start, with the proposed shutdown method. Under these partially loaded situations, the exhaust fans would not be required.

The recirculation fans in each of the rooms are assumed not to be required, and have not been included on the SSEL.

3.6.6.3 The air handling unit (AC-23-1A) for Switchgear Room B must be operational to prevent excessive temperature within the room (Ref. 5.1).

3.6.6.4 Ventilation fans or HVAC systems for the following locations are required for normal operation but have been reviewed by NUSCo (Ref. 5.1), and determined not to be required during accident conditions. This position has been adopted for the USI A-46 project.

- Primary Auxiliary Building (PAB)
- Switchgear Room A Note: See operator actions in Section 4.1.5
- Auxiliary Feedwater Pump Area
- Control Room
- Cable Spreading Area
- Cable Vault
- Screenwell House

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 are identified in order to accomplish the safe shutdown function.

4.1.1 REACTIVITY CONTROL - (Figure 1)

Adequate shutdown margin will be established and maintained by the use of all control rods and using only borated water from the RWST to provide makeup to the RCS as it cools down (Ref. 5.14). It is assumed that the RWST boron concentration will be sufficient to provide the necessary shutdown margin. 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.

The Charging Metering Pump (P-11-1A), injecting borated water into the RCS through the RCP seals via CH-HCV-308 is considered the primary means of ensuring reactivity control as the RCS temperature decreases. This path also provides the necessary cooling to the RCP seals to prevent their failure in the event the Component Cooling Water System is not available.

Required Operator Actions

- In the event CH-AOV-278 fails closed, operator action may be required to verify and/or position BA-MOV-386 and BA-MOV-349 in order to establish an alternate suction path to the metering pump.

- A manual reactor scram must be initiated subsequent to the seismic event.

4.1.2 REACTOR COOLANT PRESSURE CONTROL - (Figure 2)

In the event it is necessary to reduce Reactor Coolant System pressure, the pressurizer auxiliary spray, with water provided by the Chemical and Volume Control System (CVCS), can be used to cool the pressurizer. The backup method for reducing Reactor coolant pressure will be through the use of the Pressurizer PORVs.

The CVCS Charging Pumps will be used in the event the RCS pressure needs to be increased. The paths shown on Figure 2 are those that were considered to allow the Reactor Pressure Vessel to stay within the allowable pressure-temperature operating range, and maintain the required subcooling margin.

As discussed in Section 3.3.1, pressurizer heaters will be included on the SSEL to maintain adequate pressure in pressurizer.

4.1.3 REACTOR COOLANT INVENTORY CONTROL - (Figure 3)

Reactor Coolant inventory will be maintained by use of the CVCS. The centrifugal Charging Pumps will be considered the primary method to increase the Pressurizer level with the Metering Pump providing backup capability. The makeup source of water will be from the RWST. The makeup water will be injected in to the RCS via the RCP seals. Injection via the RCP seals will ensure the integrity of the seals is maintained since CCW may not be available to provide the necessary thermal barrier cooling. If additional water is required to maintain the Pressurizer level, the normal charging path can be utilized. No letdown path has been identified for USI A-46 to remove water from the RCS. 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 have been identified to ensure that they can be isolated.

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.

- Close CH-MOV-311 through 314 if CCW and RCPs are not available.

  NOTE: A failure of CH-MOV-311, 312, 313 or 314 to close may result in the lifting of CH-RV-408 and a loss of reactor coolant to Containment.

4.1.4 DECAY HEAT REMOVAL - (Figure 4)

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 Atmosphere Dump Valve can be used. Cooldown of the RCS will be accomplished using the Atmosphere Dump and pilot (air) operated relief valves. The steam driven Auxiliary Feedwater Pump(s) 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 ten (10) 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.

Required Operator Actions

- DWST makeup: The portable gas power transfer pump provided for in station procedure AOP 3.2-51 (Ref. 5.8) can be used as a means to assist in the transfer of water from other sources to the DWST.

- In order to utilize the inventory in the CST to feed the steam generators it will be necessary to unlock and open CD-V-632 (procedure later).

- In the event the steam supply valves for the Auxiliary Feedwater Pump Turbine (MS-PCV-1206A or B) fails closed, the pump can be operated by manually opening the throttling the control valve bypass (MS-V-1574A or B) respectively.

- In the event that blowdown needs to be terminated and the trip valves (BD-TV-1312-1 through -4) have not closed, manual isolation of the blowdown lines would be required via valves BD-V-102 through -402.

4.1.5 SUPPORT SYSTEMS

In selecting 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 above functions:

- Emergency Diesel Generators and their auxiliaries to provide electrical power in the event off site power is lost.
- Electrical distribution for AC and DC loads (i.e., active components) identified on the SSEL.
- Service Water
- Component Cooling Water
- Control Air, only those portions which supply backup air to certain pneumatic operated Valves.

Table 4.1, indicates the relationship of each of the four shutdown functions with the frontline system, and of the frontline system with their support systems.

If off-site power is not lost following the SSE, ventilation for Switchgear Room A will be required.

Required Operator Actions

- CCW System Operations: Since no-direct means of ensuring CCW system operation have been provided on the SSEL, the operator will be relied upon to determine system operation based on visual indication of one or more CCW pumps (P-13-1A/1B/1C) operating.
- If cooling water to the RCP seals cannot be provided by the CVCS System, and CCW is available, it may be possible to line up emergency nitrogen to the RCP thermal barrier valves as described in EOP 3.1-34, and open the valves to establish cooling.
- Service Water System Operation: Since there is no redundant means of flow indication in both 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 both of the operating CCW heat exchangers.
  - The confirmation of flow by feeling the Service Water piping at the CCW heat exchangers.

- If the Switchgear Room A ventilation system is inoperable and off-site power is still available, it will be necessary to utilize the portable fan that was provided for an "Appendix R" fire.

- As a result of relay chatter caused by the SSE, it may be necessary to reset the below listed breakers to restore power to the indicated Bus or MCC:

  - BKR-4850 (BUS 1-5)
  - BKR-49110 (BUS 11)
  - BKR-4960 (BUS 1-6)
  - BKR-5-8D (MCC-8-5)
  - BKR-6-12D (MCC-8-6)

- Service Water System Operations: In the event a CAR Cooler or the Service Water lines leading to the cooler fails during the SSE, it may be necessary to isolate the Service Water line to the respective cooler at SW-V-263, 265, 267 or 269.

- The Service Water to the Adams filters (FL-53-1A and 1B) may need to be isolated following an SSE if the service water line(s) from the backwash arms fail. Service water would be isolated at SW-V-234 and -235 as well as SW-V-838A and B if the cross-connect MOVs SW-MOV-837A/B are open.

- Service Water valves SW-V-103A, -103B and -602 may need to be manually closed if SW-PCV-606 does not close and results in excessive flow diversion from the Service Water System.

4.2 PATH BOUNDARIES

The highlighted (color coded) P&IDs that are provided as Attachment A to this report identify the primary, backup, and any optional safe shutdown paths (including boundaries) identified to accomplish the four safe shutdown functions. Each path is shown in a different color. The color scheme used in this report is described below.

- Yellow: All lines highlighted yellow are part of the primary shutdown path (Train 1) for the safe shutdown function. These lines comprise the primary system as specified in the GIP.

- Blue: All lines highlighted blue are part of the backup shutdown path (Train 2) for the safe shutdown function. These lines comprise the redundant system as specified in the GIP.

- Green: All lines highlighted green are lines common to both the primary (Train 1) and backup (Train 2) safe shutdown paths.

- Pink: All lines highlighted pink are optional or additional equipme. The optional lines (Trains 1OP, 2OP, 3OP) are those which are redund...t to equipment to Train 1, 2, or 3 but are not part of a complete train. All lines colored pink are in addition to that required by the GIP.

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 below listed P&IDs. The 16103 drawing series P&IDs that specifically show the reactivity control flow paths and boundaries are:

26010 (Sh 1)	Safety Injection System
26018 (Sh 1)	CVCS Letdown to Volume Control Tank
26018 (Sh 3)	CVCS Boric Acid Mix System
26018 (Sh 4)	CVCS Charging & Metering Pumps
26018 (Sh 5)	CVCS Return Line to RCP Seals

4.2.1.2 LT-1806A and LT-1806B, RWST level indicators, are included to provide information on the remaining inventory in the RWST. If the Technical Specification limits are maintained, the requirement to maintain these devices in the USI A-46 program may not be necessary.

4.2.1.3 BA-MOV-386, has been provided as an alternate RWST supply path to the Changing Metering Pump in the event CH-AOV-278 fails closed as the result of a single failure. BA-MOV-349, boric acid supply to the metering pump, has been included on the SSEL to prevent diverting RWST flow away from the metering pump suction. Operator action may be required following the SSE to align BA-MOV-386 and verify the position of BA-MOV-349.

4.2.1.4 The reactivity control function, as discussed previously, will utilize a path from the RWST to the RCPs seals utilizing one of the three charging pumps. The normal charging path to the RCS via the regenerative heat exchangers, and the cold leg injection path are not required for reactivity control. However, plant operators may want to check the isolation valves closed as part of the RCS inventory control function.

4.2.1.5 The Charging Pump suction header supply and vent line valves to the Volume Control Tank (VCT)(CH-MOV-257, MOV-257B and SOV-242, 242B) have been included on the SSEL. Isolation of one valve in each line is necessary to ensure that suction to the Charging Pump from the RWST is not lost as a result of emptying the VCT.

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 below listed P&IDs. The 26103 drawing series P&IDs that specifically show the paths and boundaries required for maintaining the RCS pressure are:

26007 (Sh 3)	Reactor Coolant System Pressurizer
26010 (Sh 1)	Safety Injection System
26018 (Sh 1)	CVCS Letdown to Volume Control Tank
26018 (Sh 3)	CVCS Boric Acid Mix System
26018 (Sh 4)	CVCS Charging & Metering Pumps
26018 (Sh 5)	CVCS Return Line to RCP Seals
26018 (Sh 6)	CVCS Return & Drain Lines for RCS Loops

4.2.2.2 LT-1806A and LT-1806B, RWST level indicators, are included to provide information on the remaining inventory in the RWST. If the Technical Specification limits are maintained, the requirement to maintain these devices in the USI A-46 program may not be necessary.

4.2.2.3 BA-MOV-386, has been provided as an alternate RWST supply path to the Changing Metering Pump in the event CH-AOV-278 fails closed as the result of a single failure. BA-MOV-349, boric acid supply to the metering pump, has been included on the SSEL to prevent diverting RWST flow away from the Metering Pump suction. Operator action may be required following the SSE to align BA-MOV-386 and verify the position of BA-MOV-349.

4.2.2.4 The primary method to reduce RCS pressure will utilize the Pressurizer auxiliary spray line and valve CH-MOV-298. The operating Charging Pump will provide the necessary water supply to quench the Pressurizer steam bubble and reduce the RCS pressure.

NOTE: When reducing RCS pressure utilizing the Pressurizer Auxiliary Spray valve, a small amount of water will bypass CVCS valves CH-MOV-292B and 292C which should be closed during this mode of operation. This small amount of water passing through manual valve CH-V-325 should not present a RCS inventory concern since makeup is required to compensate for shrinkage during cooldown.

4.2.2.5 The backup method for reducing RCS pressure when the system's pressure is greater than 325 psig will require the operation of one set of Pressurizer PORVs.

4.2.2.6 The charging pump suction header supply and vent line valves to the Volume Control Tank (VCT) (CH-MOV-257, MOV-257B and SOV-242, 242B) have been included on the SSEL. Isolation of one valve in each line is necessary to ensure that suction to the charging pump from the RWST is not lost as a result of emptying the VCT.

4.2.2.7 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.

4.2.2.8 RCS and Pressurizer pressure can be monitored by a number of pressure transmitters 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.

4.2.2.9 Pressurizer spray control valves PR-AOV-573 and 574 have been included on the SSEL for a relay evaluation. This is necessary since it may be possible for the Reactor Coolant Pumps to remain operating if offsite power is not lost. In this event it would be necessary to consider the spurious operation of the valves, due to relay chatter, resulting in spray down of the Pressurizer steam bubble.

4.2.2.10 No evaluation of a inadvertent start of either HPSI pump or opening of the associated injection valves have 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 RCS inventory control are shown on the below listed P&IDs. The 16103 drawing series P&IDs that specifically show the paths and boundaries required to maintain the RCS water inventory are:

26007 (Sh 1)	Reactor Coolant System Loops 1 & 2
26007 (Sh 2)	Reactor Coolant System Loops 3 & 4
26007 (Sh 3)	Reactor Coolant System Pressurizer
26010 (Sh 1)	Safety Injection System
26018 (Sh 1)	CVCS Letdown to Volume Control Tank
26018 (Sh 3)	CVCS Boric Acid Mix System
26018 (Sh 4)	CVCS Charging & Metering Pumps
26018 (Sh 5)	CVCS Return Line to RCP Seals
26018 (Sh 6)	CVCS Return & Drain Lines for RCS Loops

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 with two exceptions. For these exceptions the path has included the additional condition that the normal charging path and the path to the RCS loop cold legs must be isolated. This will ensure that all makeup water to the RCS will be injected through the RCP seals so that they will be protected from failure, and minimize further inventory losses from the RCS.

The RCS isolation paths identify those valves which interface with the RCS and if opened could result in a loss of coolant inventory.

4.2.3.3 LT-1806A and LT-1806B, RWST level indicators, are included to provide information on the remaining inventory in the RWST. If the Technical Specification limits are maintained, the requirement to maintain these devices in the USI A-46 program may not be necessary.

4.2.3.4 BA-MOV-386, has been provided as an alternate RWST supply path to the Changing Metering Pump in the event CH-AOV-278 fails closed as the result of a single failure. BA-MOV-349, boric acid supply to the metering pump, has been included on the SSEL to prevent diverting RWST flow away from the metering pump suction. Operator action may be required following the SSE to align BA-MOV-386 and verify the position of BA-MOV-349.

4.2.3.5 The charging pump suction header supply and vent line valves to the Volume Control Tank (VCT) (CH-MOV-257, MOV-257B and SOV-242, 242B) have been included on the SSEL. Isolation of one valve in each line is necessary to ensure that suction to the charging pump from the RWST is not lost as a result of emptying the VCT.

4.2.3.6 The Reactor Head and Pressurizer vent solenoid valves have not been included within the RCS inventory control path. These valves are deenergized during normal power operations and therefore a spurious operation of the valve, does not need to be included.

4.2.3.7 Pressurizer motor operated valves PR-MOV-596 and PR-MOV-597 which are normally closed, will serve as boundary isolation valves to prevent a release of Reactor coolant inventory through the Pressurizer LTOP relief valves PR-RV-588 and PR-RV-587 respectively.

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 below listed P&IDs. The 16103 drawing series P&IDs that specifically show the paths and boundaries required for removing decay heat are:

26003 (Sh 2)	Water Treatment System
26007 (Sh 1)	Reactor Coolant System Loops 1 & 2
26007 (Sh 2)	Reactor Coolant System Loops 3 & 4
26012 (Sh 1)	Main Steam System S/G to Trip Valves
26012 (Sh 8)	Main Steam System S/G Blow Off Tank
26012 (Sh 9)	Main Steam System Terry Turbines
26013 (Sh 9)	Feedwater & Condensate Fdwtr Header Turbine Hall
26013 (Sh 10)	Feedwater & Condensate Fdwtr to S/Gs 1 & 2
26013 (Sh 11)	Feedwater & Condensate Fdwtr to S/Gs 3 & 4
26013 (Sh 12)	Feedwater & Condensate Aux. Feedwater Pumps
26013 (Sh 13)	Elec. Aux. Feedwater Pump & Storage Tanks

26046 (Sh 1) Primary Water System
26056 (Sh 1) Fire Protection System - Fire Pumps

4.2.4.2 The paths identified for Decay Heat Re 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 automatically start or can be manually started so that Steam Generator inventory can be replaced.

4.2.4.4 The Atmospheric Dump Valve (MS-HICV-1201) will be utilized to remove Reactor decay heat after the initial decay heat rate has reduced to a level where the dump valve alone can handle the heat load. As a backup to the dump valve, the Steam Generator Power Operated Relief Valves (PORVs) (MS-SV-14, 24, 34 and 44) can be utilized to remove RCS decay heat.

4.2.4.5 Isolation of the Steam Generator blowdown lines is provided as an additional means of controlling the steam generator inventory. In the event blowdown needs to be terminated, and the trip valves (BD-TV-1312-1 through -4) have not closed, manual isolation valves (BD-V-102 through -402) can be closed to terminate blowdown.

4.2.4.6 Each of the Steam Generators is provided with three (3) level indicators and transmitters to monitor S/G inventory. The third narrow range indicator and transmitter is provided only for redundancy and are identified as optional on the SSEL.

4.2.4.7 P&ID 16103-26007 (Shts 1 and 2) identify 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&ID 16103-26020, Sheets 1 and 2.

4.2.5.2 The EDG air start solenoid valves DA-SOV-133, 134, 135, and 136 have been included on the Composite SSEL for completeness only. These valves are evaluated under the "rule of the box" with the Diesel Engines EG-2A and EG-2B.

4.2.6 SERVICE WATER 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 P&ID 16103-26014 (Shts 1-7), Service Water System.

4.2.6.2 Service water will be needed to cool the Emergency Diesel Generators and the Component Cooling Water System.

4.2.7 INSTRUMENT AND CONTROL AIR

4.2.7.1 The only control air that may be needed for safe shutdown is shown on P&IDs 16103-26054 and 16103-26052, Sht. 6.

4.2.7.2 P&ID 16103-26054 shows the air supply receiver and regulator valves that may be required to assist in opening the Pressurizer PORV's to depressurize the RCS.

4.2.7.3 P&ID 16103-26052 shows the backup air supply bottles that are available to open the metering pump suction valve CH-AOV-278.

4.2.8 CONTAINMENT VENTILATION

4.2.8.1 The paths utilized to ventilate and cool the Containment are shown on the below listed P&IDs. The 16103 drawing series P&IDs that specifically show the paths and components required for containment ventilation are:

26014 (Sh 6) Service Water PAB
26014 (Sh 7) Service Water Containment
26024 (Sh 5) Primary Ventilation Containment System

4.2.9 COMPONENT COOLING WATER SYSTEM

4.2.9.1 The Component Cooling Water (CCW) path is shown on P&ID 16103-26008 (Sh 3 and 4). The path is established to provide the necessary cooling water to the centrifugal Charging Pump lube oil coolers and the RCP Seal Water Heat Exchanger (E-45-1A).

4.2.9.2 CCW loads isolated by manual valves CC-V-742 and 743 have not been included on the SSEL. The equipment originally supplied with CCW through these valves have been abandoned in place and the subject valves are normally closed (Ref. 5.18). Valves CC-V-742 and 743 are included on the SSEL to identify them as a CCW system boundary.

4.3 METHODOLOGY

The 25 fields contained in the SSEL database are indicated in Appendix B of Reference 5.2. Data for these 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 of this report as well as ABB Impell Project Instruction 0240-099-001 (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 CY P&IDs were reviewed to identify active and passive components in the paths which were required to support the safe shutdown function.

4.3.3 The following fields of information for each active and passive component were collected from the P&IDs or the 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 16103 - prefix that is assigned to CY 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 or from NUSCO's PMMS database.

4.3.4 The P&IDs were marked up and highlighted in accordance with ABB Impell Project Instruction 0240-099-001 (Ref. 5.2). The marked up P&IDs are included as attachments to this report.

Support System and Safe Shutdown Function Dependencies

	FRONTLINE SYSTEMS					SUPPORT SYSTEMS								
	CHEMICAL AND VOLUME CONTROL	SAFETY INJECTION	REACTOR COOLANT SYSTEM	FEEDWATER & CONDENSATE (AUXILIARY FEEDWATER)	MAIN STEAM	COMPONENT COOLING WATER	SERVICE WATER	EMER DIESEL GENERATOR	CONT INSTRUMENT AIR	BACKUP AIR 1	PRIMARY VENTILATION	PRIMARY WATER	FIRE WATER	A.C. AND D.C. POWER DISTRIBUTION
SAFE SHUTDOWN FUNCTION														
REACTIVITY CONTRO'_	√	√												
PRESSURE CONTROL	√	√	√											
INVENTORY CONTROL	√	√	√											
DECAY HEAT REMOVAL			√	√	√									

FRONTLINE SYSTEMS	SUPPORT SYSTEM RELATIONSHIPS													
CHEM & VOLUME CONTROL		1				√				2				√
SAFETY INJECTION														√
REACTOR COOLANT									3					√
AUX. FEEDWATER												√	√	√
MAIN STEAM														√
COMPONENT COOL WATER							√							√
SERVICE WATER														√
EMER DEISEL GENERATOR							√							DC
CONT INSTRUMENT AIR														√
BACKUP AIR 1														
PRIMARY VENTILATION														√
PRIMARY WATER														√
FIRE WATER														√
A.C AND D.C. POWER								√						

Notes:

1. RWST provides source of borated water for RCS reactivity con[illegible]
2. Air bottle required for CH-AOV-278
3. Instrument air required for operation of PORV'S

TABLE 4.1
SUPPORT SYSTEM AND SAFE SHUTDOWN FUNCTION DEPENDENCIES

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, February 1992.

5.6 ABB Impell Record of Conversation with Doug Heffernan (CY Operations) dated 10/19/93.

5.7 NUSCo P&IDs and Electrical One-Lines:

16103-26003 Sht 2; Water Treatment System (Rev. 12)
16103-26007 Sht 1; Reactor Coolant System (Rev. 21)
16103-26007 Sht 2; Reactor Coolant System (Rev. 22)
16103-26007 Sht 3; Reactor Coolant System (Rev. 27)
16103-26008 Sht 3; Component Cooling Water System (Rev. 12)
16103-26008 Sht 4; Component Cooling Water System (Rev. 9)
16103-26008 Sht 5; Component Cooling System Reactor Containment Loop (Rev. 19)
16103-26010 Sht 1; Safety Injection System (Rev. 5)
16103-26012 Sht 1; Main Steam System (Rev. 23)
16103-26012 Sht 8; Main Steam System (Rev. 12)
16103-26012 Sht 9; Main Steam System (Rev. 7)
16103-26013 Sht 9; Auxiliary Feedwater to S/G (Rev. 14)
16103-26013 Sht 10; Feedwater (Rev. 12)
16103-26013 Sht 11; Feedwater to S/G (Rev. 11)
16103-26013 Sht 12; Auxiliary Feedwater (Rev. 4)
16103-26013 Sht 13; Elec. Auxiliary Feedwater Pump & Storage Tanks (Rev. 6)
16103-26014 Sht 1; Service Water System, PAB (Rev. 20)
16103-26014 Sht 2; Service Water System, PAB (Rev. 25)
16103-26014 Sht 4; Service Water System, PAB (Rev. 12)
16103-26014 Sht 5; Service Water System, PAB (Rev. 17)
16103-26014 Sht 6; Service Water System, PAB (Rev. 14)
16103-26014 Sht 8; Service Water System, PAB (Rev. 2)
16103-26014 Sht 9; Service Water Containment (Rev. 3)
16103-26018 Sht 1; CVCS (Rev. 21)
16103-26018 Sht 3; CVCS (Rev. 23)
16103-26018 Sht 4; CVCS (Rev. 26)
16103-26018 Sht 5; CVCS (Rev. 12)
16103-26018 Sht 6; CVCS (Rev. 14)
16103-26020 Sht. 1; Fuel Oil Supply to Diesel (Rev. 18)
16103-26020 Sht. 2; Diesel Generator Systems Compressed Air (Rev. 10)

16103-26046 Sht 1; Primary Water System (Rev. 14)
16103-26054 Containment Control Air (Rev. 17)
16103-26056 Sht 1; Fire Protection System - Fire Pumps (Rev. 23)
16103-30001 A.C. and D.C. Power Distribution (Rev. 5)

5.8 Connecticut Yankee Procedures

AOP 3.2-50 Plant Operations Outside the Control Rm (Rev. 3)
AOP 3.2-51 Local Manual Operation of the Auxiliary Feedwater System (Rev. 6)
AOP 3.2-52 Plant Cooldown Outside the Control Room (Rev. 4)
AOP 3.2-53 Local Manual Operation of the Residual Heat Removal System (Rev. 5)
AOP 3.2-57 Station Fires (Rev. 4)
AOP 3.2-10 Loss of Component Cooling Water (Rev. 5)
EOP 3.1-34 Complete Loss of Control Air System (Rev. 8)
NOP 2.3-4 Shutdown from Hot Standby to Cold Shutdown (Rev. 29)
NOP 2.8-1 Component Cooling Water System Operation (Rev. 9)
ES-0 Reactor Trip or Safety Injection (Rev. 11)
ES-0.1 Reactor Trip Response (Rev. 8)
ES-0.2 Natural Circulation Cooldown (Rev. 4)
ES-1.1 SI Termination (Rev. 8)
SUR 5.1-126 Locked Valve Checklist (Rev. 22)

5.9 Connecticut Yankee (Haddam Neck) Technical Specifications, (Amendment No. 125)

5.10 Connecticut Yankee FSAR, Rev. (June 1991)

5.11 Meeting Minutes of June 19, 1991; transmitted to NUSCO 7/15/92 (0240-099-005)

5.12 EPRI Report NP-7148-SL, "Procedure for Evaluating Nuclear Power Plant Relay Seismic Functionality, December 1990

5.13 Fire Protection Evaluation Shutdown System Availability Summary, for Connecticut Yankee, Revision 1 dated June 16, 1986

5.14 NUSCo Memorandum, NE-84-SAB-256, dated 8/7/84, T.J. Honan to B.M. Pokora, "Analysis to Support Appendix R Modifications".

5.15 ABB Impell letter to NUSCO responding to comments on Rev. 1, letter no. 0240-099-050, dated June 29, 1993

5.16 NUSCO REF/OD #91-25(CY) dated 6/4/91, "Emergency Diesel Generator - Fuel Oil Supply"

5.17 ABB Impell Record of Conversation with Doug Hefferman (CY Operations) dated 7/9/93

5.18 ABB Impell Record of Conversation with Doug Hefferman (CY Operations) dated 11/19/93

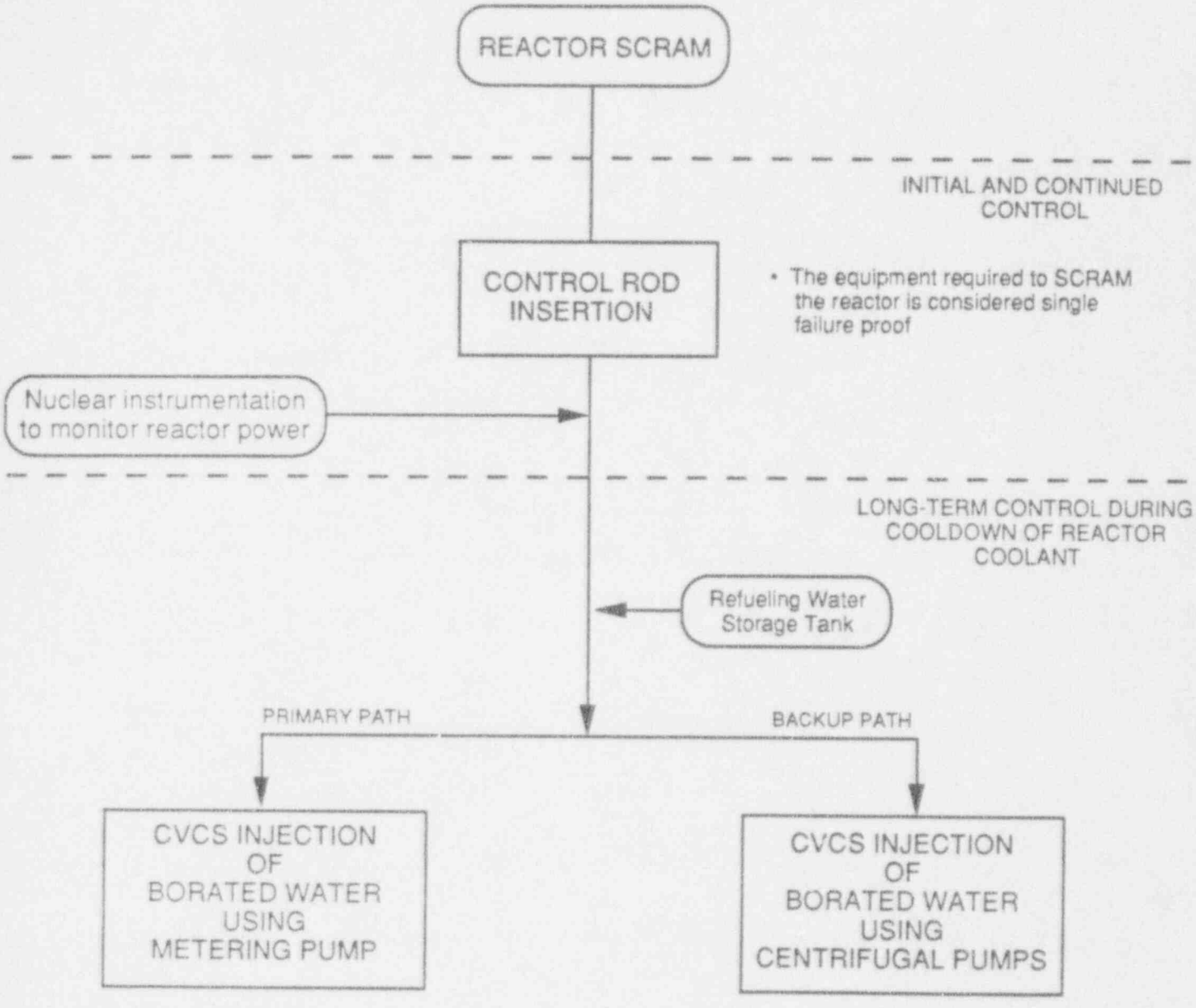

FIGURE 1 - REACTIVITY CONTROL

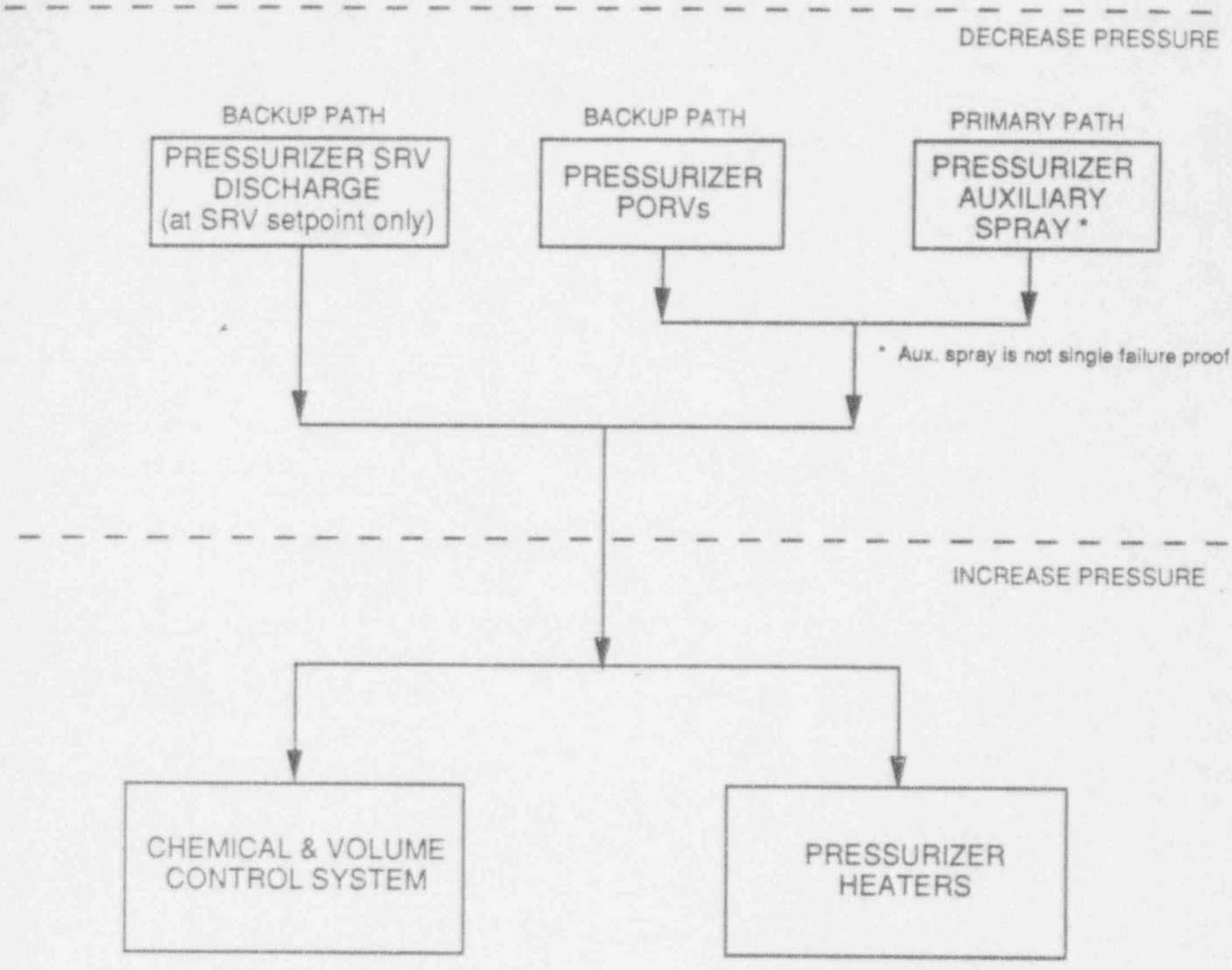

FIGURE 2 - COOLANT PRESSURE CONTROL

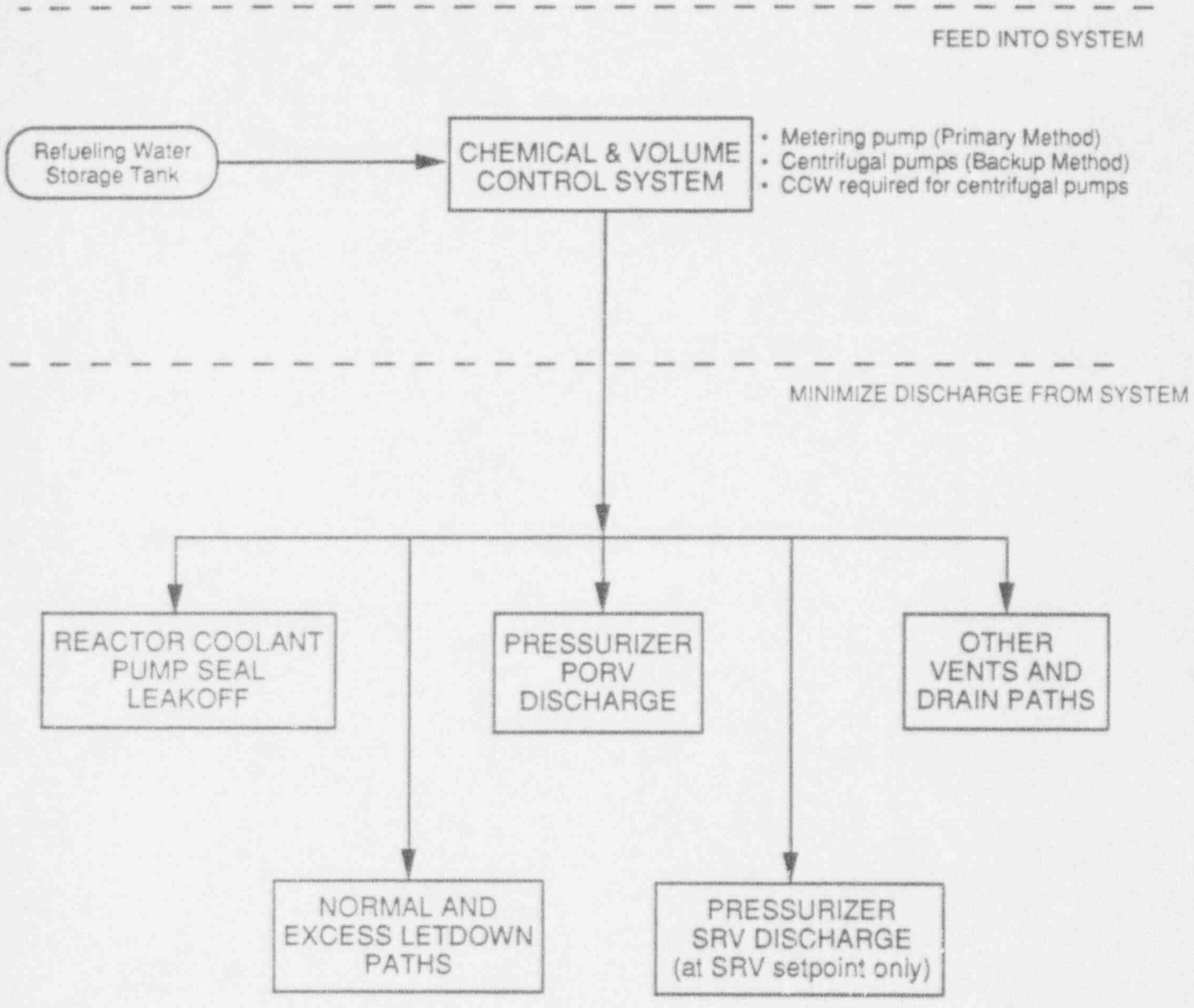

FIGURE 3 - COOLANT INVENTORY CONTROL

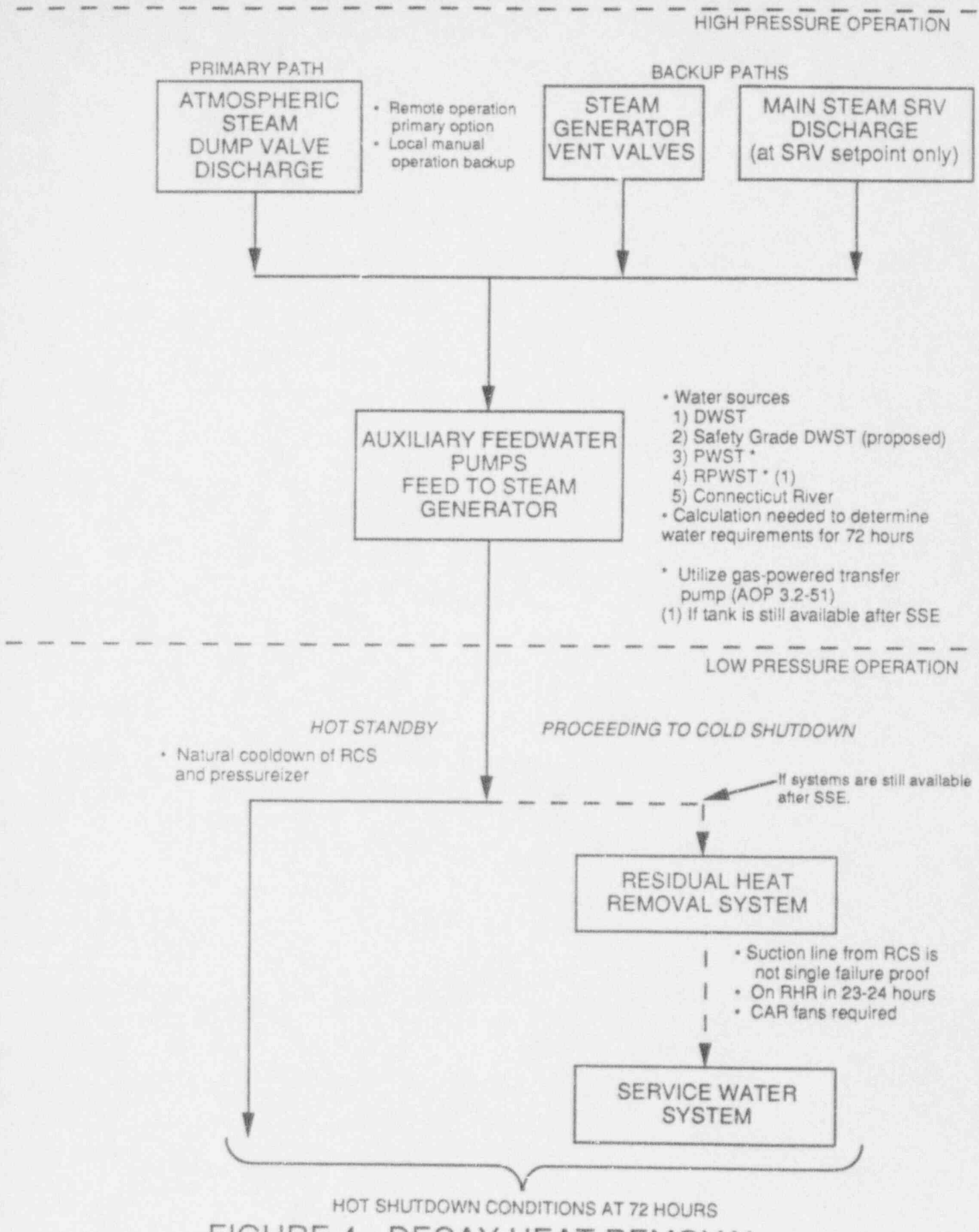

FIGURE 4 - DECAY HEAT REMOVAL

ATTACHMENT B

SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

(50 Sheets)

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
	20	A1A		POWER SUPPLY - RPS RACK A1A CABINET		CB 59'6" A1A	S 31				
	20	A1B		POWER SUPPLY - RPS RACK A1B CABINET		CB 59'6" A1B	S 31				
	20	A2A		POWER SUPPLY - RPS RACK A2A CABINET		CB 59'6" A2A	S 31				
	20	AB4		480V BUS PANEL		SB 59'6" CONTROL AUX	S 31				
	20	AB5		EMERGENCY POWER PANEL		SB 59'6" CONTROL AUX	S 31				
	20	AB6		UNDERVOLTAGE TABLE		SB 59'6" CONTROL AUX	S 31				
1		ABT	ELEC AC	AUTOMATIC BUS TRANSFER DEVICE (SWITCH) FOR SEMI-VITAL AC PANELS	30001	SB 41'6" A SWGR	S 13	N/A N/A ACTIVE			
1	10	AC-23-1A	HVAC	SWITCHGEAR RM B AIR HANDLING UNIT		SB 43'6" SWGR FL3	SR	ON ON ACTIVE	MCC12-11		
1OP	0	AIR BOT 278A	BU AIR 1	BACKUP AIR FOR CH-AOV-278	26018 (4)	AB 21'6" PMP A CUB	S	N/A N/A PASSIVE	NO		
1OP	0	AIR BOT 278B	BU AIR 1	BACKUP AIR FOR CH-AOV-278	26018 (4)	AB 21'6" PMP A CUB	S	N/A N/A PASSIVE	NO		

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)

S. Reichle / Technical Manager	S P Reichle	12/17/93	S. Wanno / Senior Engr.	Stan Wanno	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
1OP	J	AIR BOTTLE	CCW	EMERGENCY BACKUP AIR SUPPLY BOTTLE FOR CCW VALVES 608, 912 AND 913	26052 (6)	AB 21'6" BLWDWN RM	S	N/A N/A PASSIVE			
1	7	AR-1700A	DG	AIR REG FOR LT-1700A	26020 (1)	DG 21'6" EG-2A	S	N/A N/A ACTIVE	NO		
1	7	AR-1700A1	DG	AIR REG FOR LC-1700A	26020 (1)	YD 21'6" OTSD DIEL	S	N/A N/A PASSIVE	NO		
2	7	AR-1700B	DG	AIR REG FOR LT-1700B	26020 (1)	DG 21'6" EG-2B	S	N/A N/A ACTIVE	NO		
2	7	AR-1700B1	DG	AIR REG FOR LC-1700B	26020 (1)	YD 21'6" OTSD DSL	S	N/A N/A PASSIVE	NO		
	14	ARC A	MS	MSIV "Kill Switch" Panel		CB 59'6" ELEV WALL	S 31				
	14	ARC B	MS	MSIV "Kill Switch" Panel		CB 59'6" ELEV WALL	S 31				
	20	AUX-EG2A	DG	EMERGENCY STOP/TRIP/BYPASS AUX PANEL		SB 21'6" A DIESEL	S 31				
	20	AUX-EG2B	DG	EMERGENCY STOP/TRIP/BYPASS AUX PANEL		SB 21'6" B DIESEL	S 31				
	20	B1A		POWER SUPPLY - RPS RACK B1A CABINET		CB 59'6" B1A	S 31				

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)

S. Reichle / Technical Manager	S P Reichle	12/17/93		Steven Waino	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
	20	B1B		POWER SUPPLY - RPS RACK B1B CABINET		CB 59'6" B1B	S 31				
	20	B2A		POWER SUPPLY - RPS RACK B2A CABINET		CB 59'6" B2A	S 31				
1	8	BA-MOV-32	CVCS	RWST TO CHARGING PUMPS	26018 (4)	AB 15'6" PP 1A CUB	SR	CLOSED OPEN ACTIVE	MCC5-5		
3	8	BA-MOV-349	BA	BAMT TO METERING PUMP	26018 (3)	AB 21'6" 2208	SR	CLOSED CLOSED ACTIVE	MCC5-5		
1OP	8	BA-MOV-373	CVCS	RWST TO CHARGING PUMPS	26018 (4)	AB 15'6" PP 1A CUB	SR	CLOSED OPEN ACTIVE	MCC12-11		
3OP	8	BA-MOV-386	CVCS	RWST TO CHARGING PUMPS	26018 (3)	AB 21'6" BOR AC TK	SR	CLOSED OPEN ACTIVE	MCC5-5		
1	7	BA-RV-279	CVCS	METERING PUMP SUCTION	26018 (4)	AB 15'6" MT PP CUB	S	CLOSED CLOSED PASSIVE	NO		
1	16	BC-1-1A	ELEC DC	BATTERY CHARGER 1A	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	MCC5-5		
2	16	BC-1-1B	ELEC DC	BATTERY CHARGER 1B	30001	SB 41'6" B SWGR	S	ON ON ACTIVE	MCC12-11		
2	R	BD-V-102	MS	S/G #1 MANUAL BLOWDOWN ISOLATION	26012 (8)		- 17	OPEN CLOSED ACTIVE	NO		

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S. Reichle / Technical Manager	S Reichle	12/17/93		Steve Wainio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2	R	BD-V-202	MS	S/G #2 MANUAL BLOWDOWN ISOLATION	26012 (8)		17	OPEN CLOSED ACTIVE	NO		
2	R	BD-V-302	MS	S/G #3 MANUAL BLOWDOWN ISOLATION	26012 (8)		17	OPEN CLOSED ACTIVE	NO		
2	R	BD-V-402	MS	S/G #4 MANUAL BLOWDOWN ISOLATION	26012 (8)		17	OPEN CLOSED ACTIVE	NO		
2		BKR 11-3B	ELEC AC	FEEDER BREAKER TO MCC12-11	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-B	30008 (2)	
1		BKR 4-3C	ELEC AC	FEEDER BREAKER TO MCC13-4	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-A	30008 (1)	
1		BKR 4-4A	ELEC AC	FEEDER BREAKER TO MCC9-4	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-A	30008 (1)	
1		BKR 4850	ELEC AC	FEEDER BREAKER TO T485/BUS 1-5	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-A	30008 (1)	
1		BKR 4851	ELEC AC	FEEDER BREAKER TO BUS 1-5	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-A	30008 (1)	
2		BKR 49110	ELEC AC	FEEDER BREAKER TO T4911/BUS 11	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-B	30008 (2)	
2		BKR 49111	ELEC AC	FEEDER BREAKER TO BUS 11	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-B	30008 (2)	

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S. Reichle / Technical Manager	S. Reichle	12/17/93		Stan Wiano	12/17/93
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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2		BKR 4960	ELEC AC	FEEDER BREAKER TO T496/BUS 1-6	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-B	30008 (2)	
2		BKR 4961	ELEC AC	FEEDER BREAKER TO BUS 1-6	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-BX	30008 (1)	
		BKR 4T5	ELEC AC	CROSS TIE BREAKER BUS 1-5 TO 1-4			R	OPEN CL/OP ACTIVE			
1		BKR 5-5C	ELEC AC	FEEDER BREAKER TO MCC10-5	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-A	30008 (1)	
1		BKR 5-8D	ELEC AC	FEEDER BREAKER TO MCC 8-5	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-A		
1		BKR 5-9C	ELEC AC	FEEDER BREAKER TO MCC5-5	30001		R	CL/OP CL/OP ACTIVE	DC-BUS-A	30008 (1)	
2		BKR 6-11C	ELEC AC	FEEDER BREAKER TO MCC5-6	30001		R	OP/CL OP/CL ACTIVE	DC-BUS-BX	30008 (1)	
2		BKR 6-12D	ELEC AC	FEEDER BREAKER TO MCC8-6	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-BX	30008 (1)	
2		BKR 6-14C	ELEC AC	FEEDER BREAKER TO MCC7-6 & 6-6	30001		R	CLOSED CLOSED ACTIVE	DC-BUS-BX	30008 (1)	
		BKR 6T7	ELEC AC	CROSS TIE BREAKER BUS 1-6 TO 1-7			R	OPEN CL/OP ACTIVE			

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S. Reichle / Technical Manager	S Reichle	12/17/93		Steve Wisnio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1		BKR 8-1	ELEC AC	FEEDER BREAKER FROM EG-2A	30001		R	OPEN CLOSED ACTIVE	DC-BUS-A	30008 (1)	
2		BKR 9-1	ELEC AC	FEEDER BREAKER 1 FROM EG-2B	30001		R	OPEN CLOSED ACTIVE	DC-BUS-B	30008 (2)	
1	15	BT-1A	ELEC DC	BATTERY 1A	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	BC-1A		
2	15	BT-1B	ELEC DC	BATTERY 1B	30001	SB 41'6" B SWGR	S	ON ON ACTIVE	BC-1B		
1	2	BUS-1-4	ELEC AC	480V BUS 1-4	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	T-484 DC-BUS-A	30008 (1)	
1	2	BUS-1-5	ELEC AC	480V BUS 1-5	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	T-485 DC-BUS-A	30008 (1)	
2	2	BUS-1-6	ELEC AC	480V BUS 1-6	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	T-496	30008 (1)	
2	2	BUS-1-7	ELEC AC	480V BUS 1-7	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	T-497	30008 (1)	
2	2	BUS-11	ELEC AC	480V BUS 11	30001	SB 43'6" B SWGR	S	ON ON ACTIVE	T-4911	30008 (2)	
1	3	BUS-8	ELEC AC	4160V EMERGENCY BUS 8	30001	SB 21'6" A DIESEL	S	ON ON ACTIVE	EG2A	30008 (1)	

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S. Reichle / Technical Manager	S Reichle	12/17/93		Steve Weinio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
2	3	BUS-9	ELEC AC	4160V EMERGENCY BUS 9	30001	SB 21'6" B DIESEL	S	ON ON ACTIVE	EG2B	30008 (1)	
1OP	0	CA-PRV-836A	CA	PRESS REG FOR PR-AOV-568	26054	CE 48'6" CTMT	B	OPEN OP/CL ACTIVE	NO		
1OP	0	CA-PRV-836B	CA	PRESS REG FOR PR-AOV-570	26054	CE 48'6" CTMT	B	OPEN OP/CL ACTIVE	NO		
1OP	7	CA-RV-1247	BU AIR 1	BACKUP AIR HEADER RELIEF	26018 (4)	AB 15'6" PMP A CUB	S	CLOSED CL/OP ACTIVE	NO		
1	7	CA-RV-838A	RC	INST AIR RELIEF ON PR-AOV-568	26007 (3)	CE 48'6" AOV-568	S	CLOSED CL/OP ACTIVE	NO		
1	7	CA-RV-838B	RC	INST AIR RELIEF ON PR-AOV-570	26007 (3)	CE 48'6" AOV-570	S	CLOSED CL/OP ACTIVE	NO		
	20	CB/8DB1		AUX CONTROL PANEL (EG-2A)		SB 59'6" CONTROL AUX	S 31				
	20	CB/8DB1A		AUX CONTROL PANEL (EG-2A)		SB 59'6" CONTROL AUX	S 31				
	20	CB/9DB1		AUX CONTROL PANEL (EG-2B)		SB 59'6" CONTHOL AUX	S 31				
	20	CB/9DB1A		AUX CONTROL PANEL (EG-2B)		SB 59'6" CONTROL AUX	S 31				

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S. Reichle / Technical Manager	S Reichle	12/17/93		Steve Wainio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
	20	CB/B		MAIN CONTROL BOARD SECTION B		SB 59'6" CONTROL	S 31				
	20	CB/C		MAIN CONTROL BOARD SECTION C		SB 59'6" CONTROL	S 31				
	20	CB/D		MAIN CONTROL BOARD SECTION D		SB 59'6" CONTROL	S 31				
	20	CB/DD					S 31				
	20	CB/DE					S 31				
	20	CB/E		MAIN CONTROL BOARD SECTION E		SB 59'6" CONTROL	S 31				
	20	CB/EF		ANNUNCIATOR PANEL MCR-EE		SB 59'6" MCR-EE	S 31				
	20	CB/F		MAIN CONTROL BOARD SECTION F		SB 59'6" CONTROL	S 31				
	20	CB/FF		ANNUNCIATOR PANEL MCR-FF		SB 59'6" MCR-FF	S 31				
	20	CB/G		MAIN CONTROL BOARD SECTION G		SB 59'6" CONTROL	S 31				

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S. Reichle / Technical Manager	S Reichle	12/17/93		Steve Wainio	12/17/93
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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3	7	CC-FCV-608	CCW	RCP THERMAL BARRIER COOLING SUPPLY	26008 (5)	AB 21'6" BLOWDOWN	SR	OPEN OPEN PASSIVE			
1	7	CC-RV-749	CC	SEAL WATER Hx ISO RELIEF	26008 (4)	AB -19'0" RHR PIT	S 27	CLOSED CLOSED PASSIVE	NO		
1	7	CC-RV-763A	CC	CCS PIPING OVERPRESSURE PROTECTOR	26008 (4)	AB -19'0" RHR PIT	S	CLOSED CL/OP ACTIVE	NO		
2	7	CC-RV-763B	CC	CCS PIPING OVERPRESSURE PROTECTOR	26008 (4)	AB -19'0" RHR PIT	S	CLOSED CL/OP ACTIVE	NO		
3	8	CC-SOV-912	CCW	SOLENOID VALVE FOR RCP THERMAL BARRIER COOLING SUPPLY VLV TV-912	26008 (5)		R	 PASSIVE	DCP-1D		
3	8	CC-SOV-913	CCW	SOLENOID VALVE FOR RCP THERMAL BARRIER COOLING SUPPLY VLV TV-913	26008 (5)		R	 PASSIVE	DCP-1C		
3	7	CC-TV-912	CCW	RCP THERMAL BARRIER COOLING SUPPLY	26008 (5)	AB 13'6" E. PP GAL	S	OPEN OPEN PASSIVE			CC-SOV-912
3	7	CC-TV-913	CCW	RCP THERMAL BARRIER COOLING SUPPLY	26008 (5)	AB 13'6" E. PP GAL	S	OPEN OPEN PASSIVE			CC-SOV-913
3	R	CC-V-742	CCW	BORIC ACID RECOVERY EQUIPMENT ISOLATION SUPPLY VALVE	26004 (4)	AB 15'6" BORIC REC	N/A 19	CLOSED CLOSED PASSIVE			
3	R	CC-V-743	CCW	BORIC ACID RECOVERY EQUIPMENT ISOLATION RETURN VALVE	26004 (4)	AB 15'6" BORIC REC	N/A 19	CLOSED CLOSED PASSIVE			

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S. Reichle / Technical Manager	S. Reichle	12/17/93		Steve Waino	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
	8	CD-LCVP-1317A		CONDENSER MAKEUP VALVE		TB 21'6" NREAST	S				
3	R	CD-V-632	PWS	DWST MAKEUP SUPPLY ISOLATION	26013 (13)	YD 21'6" DWST	N/A	LOCKED CL OPEN ACTIVE			
1	7	CH-AOV-278	CVCS	CHARGING METERING PUMP SUCTION	26018 (4)	AB 15'6" MET PMP CUB	S 4	OPEN OPEN PASSIVE	AIR		CH-SOV-278
1	8	CH-FCV-110	CVCS	CHARGING FLOW CONTROL	26018 (6)	AB 13'3" PP TRENCH	S 2	THROTTLED OPEN ACTIVE	AIR		CH-SOV-110-S1 & S2
1OP	8	CH-FCV-110A	CVCS	CHARGING FLOW CONTROL	26018 (6)	AB 13'6" PP TRENCH	S 1	THROTTLED OP/CL ACTIVE	AIR		CH-SOV-110A-S1 & S2
1	7	CH-HCV-308	CVCS	RCP SEAL WATER FLOW CONTROL	26018 (4)	AB 13'5" PP TRENCH	S 34 1	THROTTLED OPEN ACTIVE	AIR		
1	8	CH-MOV-257	CVCS	VCT OUTLET	26018 (1)	AB 15'6" PP 1B CUB	SR	OPEN CLOSED ACTIVE	MCC5-6		
2	8	CH-MOV-257B	CVCS	VCT OUTLET	26018 (1)	AB 15'6" PP 1B CUB	SR	OPEN CLOSED ACTIVE	MCC12-11		
1	8	CH-MOV-292B	CVCS	CHARGING VALVE LOOP 2	26018 (6)	CE 1'6" LP2 LLOA	SR	CLOSED CLOSED PASSIVE	MCC5-6		
1	8	CH-MOV-292C	CVCS	CHARGING VALVE LOOP 2	26018 (6)	CE 1'6" LP2 LLOA	SR	CLOSED CLOSED PASSIVE	MCC5-5		

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S. Reichle / Technical Manager	S Reichle	12/17/93	Stan Wainio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
1	8	CH-MOV-298	CVCS	PZR AUX SPRAY	26018 (6)	CE 1'6" LP4 LLOA	SR	CLOSED OP/CL ACTIVE	MCC5-5		
3	8	CH-MOV-311	CVCS	RCP SEAL LEAKOFF VALVES	26018 (5)	CE 16'0" RCP MEZZ	SR	OPEN CLOSED ACTIVE	MCC-5 (4FJ)		
3	8	CH-MOV-312	CVCS	RCP SEAL LEAKOFF VALVES	26018 (5)	CE 16'0" RCP MEZZ	SR	OPEN CLOSED ACTIVE	MCC-5 (6FJ)		
3	8	CH-MOV-313	CVCS	RCP SEAL LEAKOFF VALVES	26018 (5)	CE 16'0" RCP MEZZ	SR	OPEN CLOSED ACTIVE	MCC-5 (10FJ)		
3	8	CH-MOV-314	CVCS	RCP SEAL LEAKOFF VALVES	26018 (5)	CE 16'0" RCP MEZZ	SR	OPEN CLOSED ACTIVE	MCC-5 (12FJ)		
1	7	CH-RV-280	CVCS	CHARGING METERING PUMP DISCHARGE	26018 (4)	AB 15'6" MT PP CUB	S	CLOSED CL/OP ACTIVE	NO		
1	8	CH-SOV-110-S1	CVCS	SOV FOR CH-FCV-110	26018 (6)		BR	ACTIVE	VAC-PNL-D		
1	8	CH-SOV-110-S2	CVCS	SOV FOR CH-FCV-110	26018 (6)		BR	ACTIVE	SVAC-PNL-1		
1OP	8	CH-SOV-110A-S1	CVCS	SOV FOR CH-FCV-110A	26018 (6)		BR	ACTIVE	VAC-PNL-B		
1OP	8	CH-SOV-110A-S2	CVCS	SOV FOR CH-FCV-110A	26018 (6)		BR	ACTIVE	SVAC-PNL-2		

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S. Reichle / Technical Manager	S.P. Reichle	12/17/93		Steven Winnie	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	8	CH-SOV-242	CVCS	CHARGING PUMP SUCTION TO VCT	26018 (1)	AB 15'6" CHG PMP 1B	SR	OPEN CLOSED ACTIVE	MCC5-6		
2	8	CH-SOV-242B	CVCS	CHARGING PUMP SUCTION TO VCT	26018 (1)	AB 15'6" CHG PMP	SR	OPEN CLOSED ACTIVE	MCC12-11		
1	8	CH-SOV-278	CVCS	CHARGING METERING PUMP SUCTION	26018 (4)	AB 15'6" MET PMP CUB	BR	OPEN OPEN PASSIVE	SVAC-PNL-1		
2	R	CH-V-284	CVCS	RCP SEAL WATER FCV BYPASS	26018 (4)		9	CLOSED OPEN ACTIVE	NO		
1	14	CONT P-109-1A	DG	MOTOR CONTROLLER FOR FUEL OIL TRANSFER PUMP P-109-1A	32001 (41A)	DG 21'6" A DIESEL	S	OPERABLE OPERABLE ACTIVE	N/A N/A N/A		
2	14	CONT P-109-1B	DG	MOTOR CONTROLLER FOR FUEL OIL TRANSFER PUMP P-109-1B	32001 (41A)	DG 21'6" B DIESEL	S	OPERABLE OPERABLE ACTIVE	N/A N/A N/A		
1	7	DA-PRV-27A	DG	EDG AIR TO SUPPORT COMPONENTS	26020 (2)	DG 21'6" A DIESEL	S	OPEN OPEN PASSIVE	NO		
2	7	DA-PRV-27B	DG	EDG AIR TO SUPPORT COMPONENTS	26020 (2)	DG 21'6" B DIESEL	S	OPEN OPEN PASSIVE	NO		
1	8	DA-SOV-133	DG	AIR START SOV FOR EG-2A	26020 (2)	DG 21'6" A DIESEL	B 33	CLOSED OPEN ACTIVE			
1	8	DA-SOV-134	DG	AIR START SOV FOR EG-2A	26020 (2)	DG 21'6" A DIESEL	B 33	CLOSED OPEN ACTIVE			

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S. Reichle / Technical Manager	S.O. Reichle	12/17/93		Steve Waino	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

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CONNECTICUT YANKEE
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2	8	DA-SOV-135	DG	AIR START SOV FOR EG-2B	26020 (2)	DG 21'6" B DIESEL	B 33	CLOSED OPEN ACTIVE			
2	8	DA-SOV-136	DG	AIR START SOV FOR EG-2B	26020 (2)	DG 21'6" B DIESEL	B 33	CLOSED OPEN ACTIVE			
1	14	DC-BUS-A	ELEC DC	125V DC BUS A	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	BT-1A		
2	14	DC-BUS-B	ELEC DC	125V DC BUS B	30001	SB 47'6" B SWGR	S	ON ON ACTIVE	BT-1B		
2	14	DC-BUS-BX	ELEC DC	125V DC BUS BX	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	DC-BUS-B		
1	14	DC-EGG-2A	ELEC DC	125V DC DIST PANEL	30001	SB 21'6" A DISL RM	S	ON ON ACTIVE	DCA		
2	14	DC-EGG-2B	ELEC DC	125V DC DIST PANEL	30001	SB 21'6" B DISL RM	S	ON ON ACTIVE	DCB		
1	14	DC-PNL-A	ELEC DC	125V DC DIST PANEL A	30001	SB 59'6" MCB/F	S	ON ON ACTIVE	DC-BUS-A		
2	14	DC-PNL-B	ELEC DC	125V DC DIST PANEL B	30001	SB 59'6" MCB/F	S	ON ON ACTIVE	DC-BUS-B		
1	8	DH-MOV-507	RC	RCS LOOP #4 DRAIN	26007 (2)	CE 1'6" LP4 LL	R 29	CLOSED CLOSED PASSIVE	MCC5-6		

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S. Reichle / Technical Manager	S Reichle	12/17/93			
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	8	DH-MOV-521	RC	RCS LOOP #3 DRAIN	26007 (2)	CE 1'6" LP3 LL	R	CLOSED CLOSED PASSIVE	MCC5-6		
1	8	DH-MOV-534	RC	RCS LOOP #1 DRAIN	26007 (1)	CE 6'0" LP2 AREA	R	CLOSED CLOSED PASSIVE	MCC5-5		
1	8	DH-MOV-544	RC	RCS LOOP #2 DRAIN	26007 (1)	CE 1'6" LP1 AREA	R	CLOSED CLOSED PASSIVE	MCC5-5		
1	8	DH-MOV-562	RC	PRESSURIZER DRAIN	26007 (3)	CE 1'6" LP3/4 LL	R	CLOSED CLOSED PASSIVE	MCC5-6		
3	R	DW-V-1633	PWS	DEMIN WATER TRANSFER	26003 (2)		N/A	CLOSED OPEN ACTIVE	NO		
3	R	DW-V-509	PWS	DEMIN WATER TRANSFER	26003 (2)		N/A	CLOSED OPEN ACTIVE	NO		
3	R	DW-V-542	PWS	DEMIN WATER TRANSFER	26003 (2)		N/A	CLOSED OPEN ACTIVE	NO		
1	21	E-144-1A	DG	DG COOLING WATER HEAT EXCHANGER (NORTH 2A)	26014 (8)	DG 21'6" A DIESEL	B	N/A N/A PASSIVE	NO		
2	21	E-144-1B	DG	DG COOLING WATER HEAT EXCHANGER (NORTH 2B)	26014 (8)	DG 21'6" B DIESEL	B	N/A N/A PASSIVE	NO		
1	21	E-144-2A	DG	DG COOLING WATER HEAT EXCHANGER (SOUTH 2A)	26014 (8)	DG 21'6" A DIESEL	B	N/A N/A PASSIVE	NO		

CERTIFICATION:

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S. Reichle / Technical Manager	S. Reichle	12/17/93		Steve Wainio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2	21	E-144-2B	DG	DG COOLING WATER HEAT EXCHANGER (SOUTH 2B)	26014 (8)	DG 21'6" B DIESEL	B	N/A N/A PASSIVE	NO		
1	21	E-24-1A	CC	S/G SAMPLE COOLER	26008 (4)	SB 21'6" BLOWDOWN	S 27	N/A N/A PASSIVE	NO		
1	21	E-24-2A	CC	S/G SAMPLE COOLER	26008 (4)	SB 21'6" BLOWDOWN	S 27	N/A N/A PASSIVE	NO		
1	21	E-24-3A	CC	S/G SAMPLE COOLER	26008 (4)	SB 21'6" BLOWDOWN	S 27	N/A N/A PASSIVE	NO		
1	21	E-24-4A	CC	S/G SAMPLE COOLER	26008 (4)	SB 21'6" BLOWDOWN	S 27	N/A N/A PASSIVE	NO		
1	21	E-27-1A	CVCS	CHARGING PUMP OIL COOLER	26018 (4)	AB 15'6" PMP A CUB	B	N/A N/A PASSIVE	NO		
1	21	E-27-1B	CVCS	CHARGING PUMP OIL COOLER	26018 (4)	AB 15'6" PMP A CUB	B	N/A N/A PASSIVE	NO		
1	21	E-4-1A	CC	COMPONENT COOLING Hx	26008 (3)	AB 35'6" 1&2 FLOOR	S	N/A N/A PASSIVE	NO		
2	21	E-4-1B	CC	COMPONENT COOLING Hx	26008 (3)	AB 35'6" 1&2 FLOOR	S	N/A N/A PASSIVE	NO		
1	21	E-45-1A	CC	RCP SEAL WATER AND CVCS RECIRC Hx	26008 (4)	AB -19'0" RHR PIT	S	N/A N/A PASSIVE	NO		

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

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1	21	E-7-1A	CVCS	REGENERATIVE Hx	26018 (6)	CE 26'3" RHx CUB	S 27	N/A N/A PASSIVE	NO		
1	21	E-7-1B	RC	REGENERATIVE Hx	26018 (6)	CE 26'3" RHx CUB	S 27	N/A N/A PASSIVE	NO		
1	21	E-7-1C	CVCS	REGENERATIVE Hx	26018 (6)	CE 26'3" RHx CUB	S 27	N/A N/A PASSIVE	NO		
1	21	E-76-1A	CC	NON-REGENERATIVE Hx	26008 (4)	AB 21'6" MT PP CUB	S 27	N/A N/A PASSIVE	NO		
1	21	E-9-1A	CC	DRAIN SAMPLE Hx	26008 (4)	AB 21'6" BLOWDOWN	S 27	N/A N/A PASSIVE	NO		
1	21	E-9-1B	CC	PRESSURIZER LIQUID SAMPLE Hx	26008 (4)	AB 21'6" BLOWDOWN	S 27	N/A N/A PASSIVE	NO		
1	21	E-9-1C	CC	HOT LEG SAMPLE Hx	26008 (4)	AB 21'6" BLOWDOWN	S 27	N/A N/A PASSIVE	NO		
	20	ECP-2A		ENGINE CONTROL PANEL		SB 21'6" A DIESEL	S 31				
	20	ECP-2B		ENGINE CONTROL PANEL		SB 21'6" B DIESEL	S 31				
1	17	EG-2A	DG	DIESEL ENGINE	26020 (2)	DG 21'6" A DIESEL	SR	OFF ON ACTIVE	AIR		DA-SOV-133,-134

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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	17	EG-2A(GEN)	ELEC AC	EMERG DIESEL GENERATOR	30001		B 28	OFF ON ACTIVE	DC-EGG-2A		
2	17	EG-2B	DG	DIESEL ENGINE	26020 (2)	DG 21'6" P DIESEL	SR	OFF ON ACTIVE	AIR		DA-SOV-135,-136
2	17	EG-2B(GEN)	ELEC AC	EMERG DIESEL GENERATOR	30001		B 28	OFF ON ACTIVE	DC-EGG-2B		
1	14	EGC-2A	ELEC AC	480V AC DIST PANEL	30001	SB 21'6" A DIESEL	S	ON ON ACTIVE	MCC5-5		
2	14	EGG-2B	ELEC AC	480V AC DIST PANEL	30001	SB 21'6" B DIESEL	S	ON ON ACTIVE	MCC12-11		
1	20	EGP-2A	ELEC AC	EXCITATION CONTROL PANEL		SB 21'6" A DIESEL	S 31				
2	20	EGP-2B	ELEC AC	EXCITATION CONTROL PANEL		SB 21'6" B DIESEL	S 31				
2	21	F-89-1A	CVCS	AUXILIARY LUBE OIL COOLER FOR CVCS PUMP P-18-1A	26018 (4)	AB 15'6" CH PP CUBE	SR	OFF ON ACTIVE	MCC-12-11		
2OP	21	F-89-1B	CVCS	AUXILIARY LUBE OIL COOLER FOR CVCS PUMP P-18-1B	26018 (4)	AB 15'6" CH PP CUBE	SR	OFF ON ACTIVE	MCC-13-4		
3	7	FH-FCV-295	CVCS	RCS FILL HEADER FLOW CONTROL	26018 (6)	AB 13'3" UND BD RM	 34 2	CLOSED CLOSED PASSIVE	AIR		

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

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
3	8	FH-MOV-344	CVCS	RCS FILL HEADER FCV BYPASS	26018 (6)	AB 15'3" PP TR SAM	R	CLOSED CLOSED PASSIVE	MCC5-5		
2	0	FL-36-1A	CVCS	RCP SEAL WTR RETURN FILTER	26018 (1)	AB 15'6" SW FL CUB	S 5	N/A N/A PASSIVE	NO		
2	0	FL-53-1A	SW	PRIM PLANT SW ADAMS FILTER	26014 (6)	AB 35'6" SE PAB	S 20	N/A N/A PASSIVE	NO		
1	0	FL-53-1B	SW	PRIM PLANT SW ADAMS FILTER	26014 (6)	AB 35'6" SE PAB	S 20	N/A N/A PASSIVE	NO		
3	0	FL-59-1A	CVCS	NORTH FILTER	26018 (5)	AB 15'6" SW FL CUB	S 5	N/A N/A PASSIVE	NO		
3	0	FL-59-1B	CVCS	SOUTH FILTER	26018 (5)	AB 15'6" SW FL CUB	S 5	N/A N/A PASSIVE	NO		
1	0	FL-99-1A	CC	CCW SLIP STREAM FILTER	26008 (3)	AB 35'6" 2ND FL	S 23	N/A N/A PASSIVE	NO		
1	7	FO-LCV-1700A	DG	EG-2A FO TANK LVL CONTROL	26020 (1)	DG 21'6" A DIESEL	S	CLOSED OP/CL ACTIVE	NO		LT-1700A
2	7	FO-LCV-1700B	DG	EG-2B FO TANK LVL CONTROL	26020 (1)	DG 21'6" B DIESEL	S	CLOSED OP/CL ACTIVE	NO		LT-1700B
3	8	FW-FCV-1301-1	FW	FEEDWATER REGULATING VALUE	26013 (9)	TB 37'6" S EAST	SR 2	OPEN CLOSED ACTIVE	SVAC-PNL-1		SV-1-1, 2-1, 3-1

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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3	8	FW-FCV-1301-2	FW	FEEDWATER REGULATING VALVE	26013 (9)	TB 376' S EAST	SR 2	OPEN CLOSED ACTIVE	SVAC-PNL-1		SV-1-2, 2-2, 3-2
3	8	FW-FCV-1301-3	FW	FEEDWATER REGULATING VALVE	26013 (9)	TB 376' S EAST	SR 2	OPEN CLOSED ACTIVE	SVAC-PNL-1		SV-1-3, 2-3, 3-3
3	8	FW-FCV-1301-4	FW	FEEDWATER REGULATING VALVE	26013 (9)	TB 376' S EAST	SR 2	OPEN CLOSED ACTIVE	SVAC-PNL-1		SV-1-4, 2-4, 3-4
3	8	FW-HICV-1301-1	AFW	AFW REGULATING VALVE	26013 (9)	TB 376' S EAST	SR 1	CLOSED OPEN ACTIVE	VAC-PNL-A		FW-SOV-1301-1
3	8	FW-HICV-1301-2	AFW	AFW REGULATING VALVE	26013 (9)	TB 375' S EAST	SR 1	CLOSED OPEN ACTIVE	VAC-PNL-B		FW-SOV-1301-2
3	8	FW-HICV-1301-3	AFW	AFW REGULATING VALVE	26013 (9)	TB 376' S EAST	SR 1	CLOSED OPEN ACTIVE	VAC-PNL-C		FW-SOV-1301-3
3	8	FW-HICV-1301-4	AFW	AFW REGULATING VALVE	26013 (9)	TB 376' S EAST	SR 1	CLOSED OPEN ACTIVE	VAC-PNL-D		FW-SOV-1301-4
2	8	FW-MOV-11	FW	FEEDWATER REG BLOCK VALVE	26013 (9)	TB 376' 4210	SR	OPEN CLOSED ACTIVE	MCC5-5		
2	8	FW-MOV-12	FW	FEEDWATER REG BLOCK VALVE	26013 (9)	TB 376' 4210	SR	OPEN CLOSED ACTIVE	MCC5-5		
2	8	FW-MOV-13	FW	FEEDWATER REG BLOCK VALVE	26013 (9)	TB 376' 4210	SR	OPEN CLOSED ACTIVE	MCC5-6		

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2	8	FW-MOV-14	FW	FEEDWATER REG BLOCK VALVE	26013 (9)	TB 375' 4210	SR	OPEN CLOSED ACTIVE	MCC5-6		
1	8	FW-MOV-160	FW	AFW PUMP DISCHARGE DIV VALVE	26013 (12)	TT 215' TERRY TRB	R	OPEN OPEN PASSIVE	MCC7-6		
3	8	FW-MOV-35	FW	AFW PUMP DISCHARGE TO CTMT	26013 (12)	TT 215' TERRY TRB	SR	CLOSED CL/OP ACTIVE	MCC7-6		
3	7	FW-SOV-1301-1	AFW	AFW REGULATING VALVE FW-HICV-1301-1 SOV	26013 (9)	TB 375' S EAST	B	CLOSED OPEN ACTIVE	VAC-PNL-A		
3	7	FW-SOV-1301-2	AFW	AFW REGULATING VALVE FW-HICV-1301-2 SOV	26013 (9)	TB 375' S EAST	B	CLOSED OPEN ACTIVE	VAC-PNL-B		
3	7	FW-SOV-1301-3	AFW	AFW REGULATING VALVE FW-HICV-1301-3 SOV	26013 (9)	TB 375' S EAST	B	CLOSED OPEN ACTIVE	VAC-PNL-C		
3	7	FW-SOV-1301-4	AFW	AFW REGULATING VALVE FW-HICV-1301-4 SOV	26013 (9)	TB 375' S EAST	B	CLOSED OPEN ACTIVE	VAC-PNL-D		
1	N/A	HEATER A, PZR	RCS	PRESSURIZER HEATERS, BACKUP GROUP A	26007 (3)	CE	R	ON/OFF ON ACTIVE	BUS 4		
1	N/A	HEATER B, PZR	RCS	PRESSURIZER HEATERS, BACKUP GROUP B	26007 (3)	CE	R	ON/OFF ON ACTIVE	BUS 5		
2	N/A	HEATER D, PZR	RCS	PRESSURIZER HEATERS, BACKUP GROUP D	26007 (3)	CE	R	ON/OFF ON ACTIVE	BUS 6		

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

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2	N/A	HEATER E, PZR	RCS	PRESSURIZER HEATERS, BACKUP GROUP E	26007 (3)	CE	R	ON/OFF ON ACTIVE	BUS 7		
1	16	IV-1A	ELEC AC	120V AC VITAL BUS INVERTER A	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	DCA		
1	16	IV-1B	ELEC AC	120V AC VITAL BUS INVERTER B	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	DCA		
2	16	IV-1C	ELEC AC	120V AC VITAL BUS INVERTER C	30001	SB 41'6" B SWGR	S	ON ON ACTIVE	DCB		T-IV-1C
2	16	IV-1D	ELEC AC	120V AC VITAL BUS INVERTER D	30001	SB 41'6" B SWGR	S	ON ON ACTIVE	DCB		T-IV-1D
2	R	(LATER)		GAS POWER TRANSFER PUMP (ref. AOP 3.2-51)	N/A	YD LOCKER	-	OFF ON ACTIVE	NO		
1	18	LC-1700A	DG	EDG FO TANK LVL CONTROLLER	26020 (1)	YD 21'6" OSD DISLR	S	N/A N/A ACTIVE	NO		
2	18	LC-1700B	DG	EDG FO TANK LVL CONTROLLER	26020 (1)	YD 21'6" OSD DISLR	S	N/A N/A ACTIVE	NO		
1	8	LD-MOV-200	RC	LETDOWN ISOLATION	26018 (6)	CE 16'0" RCP MEZZ	SR	OPEN CLOSED ACTIVE	MCC5-6		
2	8	LD-SOV-230	RC	SOV FOR LD-TV-230	26018 (6)	CE 22'6" OUT ANNUL	BR	OPEN CLOSED ACTIVE	(Not Req'd)		

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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2	7	LD-TV-230	RC	LETDOWN ISOLATION	26018 (6)	CE 0'0" CTMT	S 2	OPEN CLOSED ACTIVE		32113 (54)	LD-SOV-230
3	18	LI-1007	AFW	PWST LEVEL	26046 (1)	CB 59'6" MCB/C	S	N/A N/A ACTIVE			
3	18	LI-1012	PWS	PWST LEVEL IND	26046 (1)	YD 21'6" PWST	S	N/A N/A ACTIVE	NO		
3	18	LI-1302-1A	FW	S/G E-6-1 LEVEL (WR)	26013 (10)	SB 56'6" CR/5306	S	ON ON ACTIVE			LT-1302-1A
3	18	LI-1302-1B	FW	S/G E-6-1 LEVEL (WR)	26013 (10)	SB 56'6" CR/5306	S	ON ON ACTIVE			LT-1302-1B
3	18	LI-1302-2A	FW	S/G E-6-2 LEVEL (WR)	26013 (10)	SB 59'6" MCB/F	S	ON ON ACTIVE			LT-1302-2A
3	18	LI-1302-2B	FW	S/G E-6-2 LEVEL (WR)	26013 (10)	SB 59'6" MCB/F	S	ON ON ACTIVE			LT-1302-2B
3	18	LI-1302-3A	FW	S/G E-6-3 LEVEL (WR)	26013 (11)	SB 59'6" MCB/F	S	ON ON ACTIVE			LT-1302-3A
3	18	LI-1302-3B	FW	S/G E-6-3 LEVEL (WR)	26013 (11)	SB 59'6" MCB/F	S	ON ON ACTIVE			LT-1302-3B
3	18	LI-1302-4A	FW	S/G E-6-4 LEVEL (WR)	26013 (11)	SB 59'6" MCB/F	S	ON ON ACTIVE			LT-1302-4A

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

ATTACHMENT 8
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
3	1B	LI-1302-4B	FW	S/G E-6-4 LEVEL (WR)	26013 (11)	SB 59'6" MCB/F	S	ON ON ACTIVE			LT-1302-4B
3	1B	LI-1307B	AFW	DWST LEVEL	26013 (13)	SB 59'6" MCB/F	S	ON ON ACTIVE			
1	1B	LI-1309	AFW	CONDENSATE STORAGE TANK LEVEL INDICATOR	26013 (13)	SB 59'6" MCB/F	S	ON ON ACTIVE			LT-1309
1	1B	LI-1700A	DG	EDG FO TANK 2A LVL INDICATOR	26020 (1)	DG 21'6" A DIESEL	S	N/A N/A ACTIVE	NO		LT-1700A
2	1B	LI-1700B	DG	EDG FO TANK 2B LVL INDICATOR	26020 (1)	DG 21'6" B DIESEL	S	N/A N/A ACTIVE	NO		LT-1700B
3	1B	LI-1806A	SI	RWST LEVEL	26010 (1)	CB 59'6" MCB/C	S	ON ON ACTIVE			
3	1B	LI-1806B	SI	RWST LEVEL	26010 (1)	CB 59'6" MCB/C	S	ON ON ACTIVE			
1	1B	LI-401-1	RC	PRESSURIZER LEVEL	26007 (3)	SB 59'6" MCB/C	S	ON ON ACTIVE			
1	1B	LI-401-2	RC	PRESSURIZER LEVEL	26007 (3)	SB 59'6" MCB/C	S	ON ON ACTIVE			
1	1B	LI-401-3	RC	PRESSURIZER LEVEL	26007 (3)	SB 59'6" MCB/C	S	ON ON ACTIVE			

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

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SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	18	LI-401-4	RC	PRESSURIZER LEVEL	26007 (3)	SB 595' MCB/C	S	ON ON ACTIVE			
1	18	LI-402	DG	PRESSURIZER LEVEL	26007(3)	CB 595' MCB/C	S	ON ON ACTIVE			
3OP	18	LR-1301-1	FW	S/G E-6-1 LEVEL (NR)	26013 (10)	CB 595' MCB/F	S	ON ON ACTIVE			LT-1301-1A
3OP	18	LR-1301-2	FW	S/G E-6-2 LEVEL (NR)	26013 (10)	CB 595' MCB/F	S	ON ON ACTIVE			LT-1301-2A
3OP	18	LR-1301-3	FW	S/G E-6-3 LEVEL (NR)	26013 (11)	CB 595' MCB/F	S	ON ON ACTIVE			LT-1301-3C
3OP	18	LR-1301-4	FW	S/G E-6-4 LEVEL (NR)	26013 (11)	CB 595' MCB/F	S	ON ON ACTIVE			LT-1301-4C
3	18	LT-1007	AFW	PWST COLD SHUTDOWN LEVEL	26046 (1)	YD 215' PWST	S	ON ON ACTIVE			
3OP	18	LT-1301-1A	FW	S/G E-6-1 LEVEL (NR) TRANSMITTER FOR LR-1301-1	26013 (10)	CE 220' #1 CAR FN	S	ON ON ACTIVE	VAC-PNL-A		
3OP	18	LT-1301-2A	FW	S/G E-6-2 LEVEL (NR) TRANSMITTER FOR LR-1301-2	26013 (10)	CE 220' #2 CAR FN	S	ON ON ACTIVE	VAC-PNL-B		
3OP	18	LT-1301-3C	FW	S/G E-6-3 LEVEL (NR) TRANSMITTER FOR LR-1301-3	26013 (11)	CE 220' #3 CAR FN	S	ON ON ACTIVE	VAC-PNL-C		

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S. Reichle / Technical Manager	S O Reichle	12/17/93	Steven Wainio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3OP	18	LT-1301-4C	FW	S/G E-6-4 LEVEL (NR) TRANSMITTER FOR LR-1301-4	26013 (11)	CE 220' #4 CAR EN	S	ON ON ACTIVE	VAC-PNL-D		
3	18	LT-1302-1A	FW	S/G E-6-1 LEVEL (WR) TRANSMITTER FOR LI-1302-1A	26013 (10)	CE	1.97	ON ON ACTIVE	VAC-PNL-B		
3	18	LT-1302-1B	FW	S/G E-6-1 LEVEL (WR) TRANSMITTER FOR LI-1302-1B	26013 (10)	CE	1.97	ON ON ACTIVE	VAC-PNL-C		
3	18	LT-1302-2A	FW	S/G E-6-2 LEVEL (WR) TRANSMITTER FOR LI-1302-2A	26013 (10)	CE	1.97	ON ON ACTIVE	VAC-PNL-B		
3	18	LT-1302-2B	FW	S/G E-6-2 LEVEL (WR) TRANSMITTER FOR LI-1302-2B	26013 (10)	CE	1.97	ON ON ACTIVE	VAC-PNL-C		
3	18	LT-1302-3A	FW	S/G E-6-3 LEVEL (WR) TRANSMITTER FOR LI-1302-3A	26013 (11)	CE	1.97	ON ON ACTIVE	VAC-PNL-B		
3	18	LT-1302-3B	FW	S/G E-6-3 LEVEL (WR) TRANSMITTER FOR LI-1302-3B	26013 (11)	CE	1.97	ON ON ACTIVE	VAC-PNL-C		
3	18	LT-1302-4A	FW	S/G E-6-4 LEVEL (WR) TRANSMITTER FOR LI-1302-4A	26013 (11)	CE	1.97	ON ON ACTIVE	VAC-PNL-B		
3	18	LT-1302-4B	FW	S/G E-6-4 LEVEL (WR) TRANSMITTER FOR LI-1302-4B	26013 (11)	CE	1.97	ON ON ACTIVE	VAC-PNL-C		
3	18	LT-1307B	AFW	DWST HOT SHUTDOWN LEVEL	26013 (13)	YD	1.97	ON ON ACTIVE	VAC-PNL-B		

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S. Reichle / Technical Manager	S P Reichle	12/17/93			12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	18	LT-1309	AFW	CONDENSATE STORAGE TANK LEVEL TRANSMITTER FOR LI-1309	26013 (*3)	YD 21'6" CST	S	ON ON ACTIVE			
1	18	LT-1700A	DG	EDG FO TANK LVL TRANSMITTER FOR FO-LCV-1700A AND LI-1700A	26020 (1)	DG 21'6" A DIESEL	S	N/A N/A ACTIVE	NO		
2	18	LT-1700B	DG	EDG FO TANK LVL TRANSMITTER FOR FO-LCV-1700B AND LI-1700B	26020 (1)	DG 21'6" B DIESEL	S	N/A N/A ACTIVE	NO		
3	18	LT-1806A	SI	RWST LEVEL	26010 (1)	YD 21'6" RWST	1,97	ON ON ACTIVE	VAC-PNL-A		
3	18	LT-1806B	SI	RWST LEVEL	26010 (1)	YD 21'6" RWST	S	ON ON ACTIVE	VAC-PNL-C		
1	18	LT-401-1	RC	PRESSURIZER LEVEL	26007 (3)	CE	1,97	ON ON ACTIVE	VAC-PNL-A		
1	18	LT-401-2	RC	PRESSURIZER LEVEL	26007 (3)	CE	1,97	ON ON ACTIVE	VAC-PNL-B		
1	18	LT-401-3	RC	PRESSURIZER LEVEL	26007 (3)	CE	1,97	ON ON ACTIVE	VAC-PNL-C		
1	18	LT-401-4	RC	PRESSURIZER LEVEL	26007 (3)	CE 1'6" PZR CABIT	S	ON ON ACTIVE	VAC-PNL-D		
1	18	LT-402	RC	PRESSURIZER LEVEL	6007 (3)	CE 1'6" PZR CABIT	S	ON ON ACTIVE			

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
1		MAN	ELEC AC	MANUAL TRANSFER SWITCH FOR SEMI VITAL ART	30001		S	N/A N/A PASSIVE			
2	1	MCC-12-11	ELEC AC	480V MCC12-11, BUS 12-11	30001	SB 43'6" BSWGR	S	ON ON ACTIVE	BUS 11		
1	1	MCC-13-4	ELEC AC	480V MCC13-4, BUS 13-4	30001	SB 43'6" BSWGR	S	ON ON ACTIVE	BUS 1-4		
1	1	MCC-5-5	ELEC AC	480V MCC5-1, BUS 5-5	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	BUS 1-5		
1	1	MCC-5-6	ELEC AC	480V MCC5-1, BUS 5-6	30001	SB 41'6" A SWGR	S	ON ON ACTIVE	MCC5-5		
2	1	MCC-7-6	ELEC AC	480V MCC7, BUS 7-6	30001	CV 21'6" CABL VAUT	S	ON ON ACTIVE	BUS 1-6		
1	1	MCC-8-5	ELEC AC	480V MCC8, BUS 8-5	30001	AB 21'6" PAB 1FLMD	S	ON ON ACTIVE	BUS 1-5		
2	1	MCC-8-6	ELEC AC	480V MCC8, BUS 8-6	30001	AB 21'6" PAB 1FLMD	S	ON ON ACTIVE	BUS 1-6		
1	7	MS-HICV-1201	MS	ATMOSPHERIC DUMP	26012 (9)	TT 21'6" TERRY TRB	S 10	CLOSED OPEN ACTIVE	AIR		
1	8	MS-PCV-1206A	MS	AFW TURBINE CONTROL	26012 (9)	TT 21'6" TERRY TRB	S 11	CLOSED OPEN ACTIVE	AIR		MS-SOV-1206A

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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
2	8	MS-PCV-1206B	MS	AFW TURBINE CONTROL	26012 (9)	TT 216' TERRY TRB	S	CLOSED OPEN ACTIVE	AIR		MS-SOV-1206B
3OP	7	MS-SV-11	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-12	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
1	7	MS-SV-1216A	MS	"A" AUX FEED PUMP SV	26012 (9)	TT 216' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
2	7	MS-SV-1216B	MS	"B" AUX FEED PUMP SV	26012 (9)	TT 216' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-13	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-14	MS	STEAM GENERATOR PORV	26012 (1)	TT 376' TERRY TRB	S 30	CLOSED OPEN ACTIVE	DC-PNL-A		SOLENOID VALVE
3OP	7	MS-SV-21	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-22	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-23	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		

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S. Reichle / Technical Manager	S P Reichle	12/17/93		Steve Wainio	12/17/93
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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2	7	MS-SV-24	MS	STEAM GENERATOR PORV	26012 (1)	TT 376' TERRY TRB	S 30	CLOSED OPEN ACTIVE	DC-PNL-A		SOLENOID VALVE
3OP	7	MS-SV-31	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-32	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-33	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
2	7	MS-SV-34	MS	STEAM GENERATOR PORV	26012 (1)	TT 376' TERRY TRB	S 30	CLOSED OPEN ACTIVE	DC-PNL-B		SOLENOID VALVE
3OP	7	MS-SV-41	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-42	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
3OP	7	MS-SV-43	MS	STEAM GENERATOR SAFETY VALVE	26012 (1)	TT 376' TERRY TRB	S	CLOSED OPEN ACTIVE	NO		
2	7	MS-SV-44	MS	STEAM GENERATOR PORV	26012 (1)	TT 376' TERRY TRB	S 30	CLOSED OPEN ACTIVE	DC-PNL-B		SOLENOID VALVE
1	8	MS-TV-1211-1	MS	MAIN STEAM TRIP VALVE	26012 (1)	TT 596' UL NORTH	SR	OPEN CLOSED ACTIVE	DC-PNL-A		

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S. Reichle / Technical Manager	S. Reichle	12/17/93		Steve Maino	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
1	8	MS-TV-1211-2	MS	MAIN STEAM TRIP VALVE	26012 (1)	TT 59'6" UL NORTH	SR	OPEN CLOSED ACTIVE	DC-PNL-A		
1	8	MS-TV-1211-3	MS	MAIN STEAM TRIP VALVE	26012 (1)	TT 59'6" UL SOUTH	SR	OPEN CLOSED ACTIVE	DC-PNL-A		
1	8	MS-TV-1211-4	MS	MAIN STEAM TRIP VALVE	26012 (1)	TT 59'6" UL SOUTH	SR	OPEN CLOSED ACTIVE	DC-PNL-A		
1OP	R	MS-V-1574A	MS	MANUAL PYPASS FOR MS-PCV-1206A	26012 (9)	TT 21'6" TERRY TRB	N/A	CLOSED OP/CL ACTIVE			
2OP	R	MS-V-1574B	MS	MANUAL PYPASS FOR MS-PCV-1206B	26012 (9)	TT 21'6" TERRY TRB	N/A	CLOSED OP/CL ACTIVE			
1		NE-12	NI	SOURCE RANGE INDICATION			NA 22	ON ON ACTIVE			
2		NE-13	NI	SOURCE RANGE INDICATION			NA 22	ON ON ACTIVE			
2	5	P-10-1A	CVCS	CHARGING PUMP AUX L.O. PUMP A	26018 (4)	AB 15'6" A PMP CUB	BR	OFF ON ACTIVE	MCC8-6		
2OP	5	P-10-1B	CVCS	CHARGING PUMP AUX L.O. PUMP B	26018 (4)	AB 15'6" B PMP CUB	BR	OFF ON ACTIVE	MCC8-5		
1	5	P-109-1A	DG	EDG FUEL OIL TRANSFER PUMP	26020 (1)	DG 21'6" A DIESEL	SR 18	OFF ON/OFF ACTIVE	EGG-2A		

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S. Reichle / Technical Manager	S C Reichle	12/17/93		Steve Waimon	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
2	5	P-109-1B	DG	EDG FUEL OIL TRANSFER PUMP	26020 (1)	DG 21'6" B DIESEL	SR 18	OFF ON/OFF ACTIVE	EGG-2B		
1	5	P-11-1A	CVCS	CHARGING METERING PUMP	26018 (4)	AB 15'6" MT PP CUB	SR	OFF ON ACTIVE	BUS 11 DC-BUS-B	30008 (2)	
1	5	P-13-1A	CC	COMPONENT COOLING PUMP	26008 (3)	AB 21'6" WEST HALL	SR 24	ON/OFF ON ACTIVE	BUS 1-4 DC-BUS-A DC-PNL-A	30008 (1)	
1	5	P-13-1B	CC	COMPONENT COOLING PUMP	26008 (3)	AB 21'6" WEST HALL	SR 24	ON/OFF ON ACTIVE	BUS 1-6 DC-BUS-BX DC-PNL-B	30008 (1)	
1	5	P-13-1C	CC	COMPONENT COOLING PUMP	26008 (3)	AB 21'6" WEST HALL	SR 24	ON/OFF ON ACTIVE	BUS 11 DC-BUS-B	30008 (1)	
2	5	P-149-1A	CVCS	CHARGING PUMP MAIN L.O. PUMP	26018 (4)	AB 15'6" CH PP CUB	BR	OFF OFF/ON ACTIVE	MCC5-6		
2OP	5	P-149-1B	CVCS	CHARGING PUMP MAIN L.O. PUMP	26018 (4)	AB 15'6" CH PP CUB	BR	OFF OFF/ON ACTIVE	MCC5-6		
2	5	P-18-1A	CVCS	CHARGING PUMP	26018 (4)	AB 15'6" CH PP CUB	SR 6	OFF/ON OFF/ON ACTIVE	BUS 9 DC-BUS-B	30008 (2)	P-149-1A, P-10-1A
2OP	5	P-18-1B	CVCS	CHARGING PUMP	26018 (4)	AB 15'6" CH PP CUB	SR 6	OFF/ON OFF/ON ACTIVE	BUS 8 DC-BUS-A	30008 (1)	P-149-1B, P-10-1B
3	5	P-29-1A	PWS	PW TRANSFER PUMP	26046 (1)	AB 21'6" LL SE COR	SR	OFF OFF/ON ACTIVE	MCC8-5		

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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3OP	5	P-29-1B	PWS	PW TRANSFER PUMP	26046 (1)	AB 21'6" LL SE COR	SR	OFF OFF/ON ACTIVE	MCC8-6		
1	5	P-32-1A	MS	AUX S/G FEED PUMP	26012 (9)	YD 21'6" TERRY TRB	S	OFF ON ACTIVE	STEAM		
2	5	P-32-1B	MS	AUX S/G FEED PUMP	26012 (9)	YD 21'6" TERRY TRB	S	OFF ON ACTIVE	STEAM		
1	6	P-37-1A	SW	SERVICE WATER PUMP	26014 (2)	CW 8'0" LL-7102	SR	OFF/ON ON ACTIVE	BUS 1-4 DC-BUS-A		
1	6	P-37-1B	SW	SERVICE WATER PUMP	26014 (2)	CW 8'-0" LL-7102	SR	OFF/ON ON ACTIVE	BUS 1-5 DC-BUS-A		
2	6	P-37-1C	SW	SERVICE WATER PUMP	26014 (2)	CW 8'-0" LL-7104	SR	OFF/ON ON ACTIVE	BUS 1-6 DC-BUS-B		
2	6	P-37-1D	SW	SERVICE WATER PUMP	26014 (2)	CW 8'-0" LL-7104	SR	OFF/ON ON ACTIVE	BUS 11 DC-BUS-B		
2	6	P-4-1A	FP	ELEC DRIVEN FIRE PMP	26056 (1)	CW 21'6" UL NW	SR	OFF ON ACTIVE	BUS 1-4 DC-BUS-A		
1	6	P-5-1A	FP	DIESEL DRIVEN FIRE PUMP	26056 (1)	CW 21'6" UL SOUTH	SR	OFF ON ACTIVE			
3	18	PI-1201-1B	FW	S/G E-6-1 PRESSURE	26013 (10)	CB 59'6" MCB/F	S	ON ON ACTIVE			PT-1201-1B

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

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3	18	PI-1201-2B	FW	S/G E-6-2 PRESSURE	26013 (10)	CB 59'6" MCB/F	S	ON ON ACTIVE			PT-1201-2B
3	18	PI-1201-3B	FW	S/G E-6-3 PRESSURE	26013 (11)	CB 59'6" MCB/F	S	ON ON ACTIVE			PT-1201-3B
3	18	PI-1201-4B	FW	S/G E-6-4 PRESSURE	26013 (11)	CB 59'6" MCB/F	S	ON ON ACTIVE			PT-1201-4B
1	18	PI-401-1A	RC	PRESSURIZER PRESSURE	26007 (3)	CB 59'6" MCB/C	S	ON ON ACTIVE			PT-401-1
1	18	PI-401-2	RC	PRESSURIZER PRESSURE	26007 (3)	CB 59'6" MCB/C	S	ON ON ACTIVE			PT-401-2
1	18	PI-401-3	RC	PRESSURIZER PRESSURE	26007 (3)	CB 59'6" MCB/C	S	ON ON ACTIVE			PT-401-3
1	18	PI-401-4	RC	PRESSURIZER PRESSURE	26007 (3)	CB 59'6" MCB/C	S	ON ON ACTIVE			PT-401-4
1	18	PI-403	RCS	RCS PRESSURE	26007 (1)		S	ON ON ACTIVE			PT-403
1	18	PI-403A	RCS	RCS PRESSURE	26007 (1)	CB 59'6" MCB/D	S	ON ON ACTIVE			PT-403
1	18	PI-403N	RCS	RCS PRESSURE	26007 (1)	CB 59'6"	S	ON ON ACTIVE			PT-403N

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1	18	PI-404	RCS	RCS PRESSURE	26007 (2)		S	ON ON ACTIVE			PT-404
1	18	PI-404A	RCS	RCS PRESSURE	26007 (2)	CB 59'6" MCB/D	S	ON ON ACTIVE			PT-404
1	18	PI-404N	RCS	RCS PRESSURE	26007 (2)	CB 59'6"	S	ON ON ACTIVE			PT-404N
2	7	PR-AOV-568	RC	PRESSURIZER PORV	26007 (3)	CE 48'6" PRESS TOP	S 2	CLOSED CL/OP ACTIVE	SVAC-PNL-2	32112 (70)	PR-SOV-568, RV-838A
2	7	PR-AOV-570	RC	PRESSURIZER PORV	26007 (3)	CE 48'6" PRESS TOP	S 2	CLOSED CL/OP ACTIVE	SVAC-PNL-2	32112 (70A)	PR-SOV-570, PRV-838B, TK-80-1A
1	8	PR-AOV-573	RC	PRESSURIZER SPRAY VALVE	26007 (3)		R	OPEN CLOSED ACTIVE			
1	8	PR-AOV-574	RC	PRESSURIZER SPRAY VALVE	26007 (3)		R	OPEN CLOSED ACTIVE			
1	8	PR-MOV-567	RC	PZR PORV BLOCK VALVE	26007 (3)	CE 48'6" CHG FLR	R	CLOSED CLOSED PASSIVE	MCC5-5		
2	8	PR-MOV-567	RC	PZR PORV BLOCK VALVE	26007 (3)	CE 48'6" CHG FLR	SR	CLOSED OPEN ACTIVE	MCC5-5		
1	8	PR-MOV-569	RC	PZR PORV BLOCK VALVE	26007 (3)	CE 48'6" PRESS TOP	R	CLOSED CLOSED PASSIVE	MCC5-6		

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S. Reichle / Technical Manager	S P Reichle	12/17/93	Steve Waimo	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
2	8	PR-MOV-569	RC	PZR PORV BLOCK VALVE	26007 (3)	CE 48'6" PRESS TOP	SR	CLOSED OPEN ACTIVE	MCC5-6		
1	8	PR-MOV-596	RC	LTOP RELIEF ISOLATION	26007 (3)	CE 48'6" PRESS TOP	R 7	CLOSED CLOSED PASSIVE	MCC5-6		
1	8	PR-MOV-597	RC	LTOP RELIEF ISOLATION	26007 (3)	CE 48'6" PRESS TOP	R 7	CLOSED CLOSED PASSIVE	MCC5-5		
2	7	PR-RV-587	RC	LTOP RELIEF	26007 (3)	CE 48'6" PRESS TOP	S 8	CLOSED CL/OP ACTIVE	NO		
2	7	PR-RV-588	RC	LTOP RELIEF	26007 (3)	CE 48'6" PRESS TOP	S 8	CLOSED CL/OP ACTIVE	NO		
2	8	PR-SOV-568	RC	SOV FOR PR-AOV-568	26007 (3)		BR	CLOSED OP/CL ACTIVE	SVAC-PNL-2		
2	8	PR-SOV-570	RC	SOV FOR PR-AOV-570	26007 (3)		BR	CLOSED OP/CL ACTIVE	SVAC-PNL-2		
2OP	7	PR-SV-584	RCS	PRESSURIZER CODE SAFETY VALVE	26007 (3)	CE 48'6" PZR TOP	S	CLOSED OPEN ACTIVE	NO		
2OP	7	PR-SV-585	RCS	PRESSURIZER CODE SAFETY VALVE	26007 (3)	CE 48'6" PZR TOP	S	CLOSED OPEN ACTIVE	NO		
2OP	7	PR-SV-586	RCS	PRESSURIZER CODE SAFETY VALVE	26007 (3)	CE 48'6" PZR TOP	S	CLOSED OPEN ACTIVE	NO		

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S. Reichle / Technical Manager	S Reichle	12/17/93	Steve Waimio	12/17/93
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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
1OP	7	PRV-278	BU AIR 1	PRESSURE REG. FOR AIR BOTTLE 278A	26018 (4)	AB 21'6" PMP A CUB	S	N/A N/A ACTIVE	NO		
1OP	7	PRV-279	BU AIR 1	PRESSURE REG. FOR AIR BOTTLE 278B	26018 (4)	AB 21'6" PMP A CUB	S	N/A N/A ACTIVE	NO		
	N/A	PRV-836A	RC	RELIEF VALVE FOR PR-AOV-568	26054	CE 48'6" PRESS TOP	B	CLOSED CLOSED PASSIVE			
	N/A	PRV-836B	RC	RELIEF VALVE FOR PR-AOV-570	26054	CE 48'6" PRESS TOP	B	CLOSED CLOSED PASSIVE			
3	18	PT-1201-1B	FW	PRESSURE TRANSMITTER FOR S/G E-6-1 PI-1201-1B	26013 (10)	CE 22'0" 1 CAR FAN	S	ON ON ACTIVE	SVAC-PNL-1		
3	18	PT-1201-2B	FW	PRESSURE TRANSMITTER FOR S/G E-6-2 PI-1201-2B	26013 (10)	CE 22'0" 2 CAR FAN	S	ON ON ACTIVE	SVAC-PNL-1		
3	18	PT-1201-3B	FW	PRESSURE TRANSMITTER FOR S/G E-6-3 PI-1201-3B	26013 (11)	CE 22'0" 3 CAR FAN	S	ON ON ACTIVE	SVAC-PNL-1		
3	18	PT-1201-4B	FW	PRESSURE TRANSMITTER FOR S/G E-6-4 PI-1201-4B	26013 (11)	CE 22'0" 4 CAR FAN	S	ON ON ACTIVE	SVAC-PNL-1		
1	18	PT-401-1	RC	PRESSURIZER PRESSURE TRANSMITTER FOR PI-401-1A	26007 (3)	CE 1'6" PZR CAB	S	ON ON ACTIVE	VAC-PNL-A		
1	18	PT-401-2	RC	PRESSURIZER PRESSURE TRANSMITTER FOR PI-401-2	26007 (3)	CE 1'6" PZR CAB	S	ON ON ACTIVE	VAC-PNL-B		

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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	18	PT-401-3	RC	PRESSURIZER PRESSURE TRANSMITTER FOR PI-401-3	26007 (3)	CE 1'6" PZR CAB	S	ON ON ACTIVE	VAC PNL C		
1	18	PT-401-4	RC	PRESSURIZER PRESSURE TRANSMITTER FOR PI-401-4	26007 (3)	CE 1'6" PZR CAB	S	ON ON ACTIVE	VAC PNL D		
1	18	PT-403	RCS	RCS PRESSURE TRANSMITTER FOR PI-403 & 403A	26007 (1)	CE 22'0" LOOP 4 AREA	B	ON ON ACTIVE			RACK 28803-1A
1	18	PT-403N	RCS	RCS PRESSURE TRANSMITTER FOR PI-403N	26007 (1)	CE 22'0" LOOP 4 AREA	B	ON ON ACTIVE			RACK 28803-1A
1	18	PT-404	RCS	RCS PRESSURE TRANSMITTER FOR PI-404 & 404A	26007 (2)	CE 22'0" LOOP 4 AREA	B	ON ON ACTIVE			RACK 28803-1B
1	18	PT-404N	RCS	RCS PRESSURE TRANSMITTER FOR PI-404N	26007 (2)	CE 22'0" LOOP 4 AREA	B	ON ON ACTIVE			RACK 28803-1B
3	R	PW-V-111	PWS	PRI WTR TRANSFER	26046 (1)		-	CLOSED OPEN ACTIVE	NO		
	18	RACK 28803-1A		INSTRUMENT/TRANSMITTER RACK FOR PT-403 AND PT-403N		CE 1'6" LLOA	S				
	18	RACK 28803-1B		INSTRUMENT/TRANSMITTER RACK FOR PT-404 AND PT-404N		CE 1'6" LLOA	S				
	20	RACK AF		POWER SUPPLY - RPS RACK AF		CB 59'6" RACK AF	S 31				

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S. Reichle / Technical Manager	S P Reichle	12/17/93		Steve Wainio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-DRAWI .3 NUMBER	BUILDING FLOOR EL ROOM/GRID	EVAL. NOTES	NORM STATE REQD STATE EQ FUNCTION	POWER REQD. CONTROL PWR	SUPPORTING SYSTEM DRAWINGS	REQUIRED SUPPORT SYSTEMS AND COMPONENTS
	20	RACK AR					S 31				
	20	RACK BF		POWER SUPPLY - RPS RACK BF		CB 59'6" RACK BF	S 31				
	20	RACK BR					S 31				
	20	RACK CF		POWER SUPPLY - RPS RACK CF		CB 59'6" RACK CF	S 31				
	20	RACK CR					S 31				
	20	RACK DF		POWER SUPPLY - RPS RACK DF		CB 59'6" RACK DF	S 31				
3	8	RC-MOV-501	RC	RC LOOP 4 HOT LEG ISOLATION	26007 (2)		R	OPEN OPEN PASSIVE	MCC5-6		
3	8	RC-MOV-512	RC	RC LOOP 4 COLD LEG ISOLATION	26007 (2)		R	OPEN OPEN PASSIVE	MCC5-6		
3	8	RC-MOV-513	RC	RC LOOP 3 HOT LEG ISOLATION	26007 (2)		R	OPEN OPEN PASSIVE	MCC5-6		
3	8	RC-MOV-524	RC	RC LOOP 3 COLD LEG ISOLATION	26007 (2)		R	OPEN OPEN PASSIVE	MCC5-6		

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

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3	8	RC-MOV-526	RC	RC LOOP 2 HOT LEG ISOLATION	26007 (1)		R	OPEN OPEN PASSIVE	MCC5-5		
3	8	RC-MOV-537	RC	RC LOOP 2 COLD LEG ISOLATION	26007 (1)		R	OPEN OPEN PASSIVE	MCC5-5		
3	8	RC-MOV-538	RC	RC LOOP 1 HOT LEG ISOLATION	26007 (1)		R	OPEN OPEN PASSIVE	MCC5-5		
3	8	RC-MOV-546	RC	RC LOOP 1 COLD LEG ISOLATION	26007 (1)		R	OPEN OPEN PASSIVE	MCC5-5		
3	8	SI-MOV-24	SI	RWST OUTLET ISOLATION	26010 (1)	YD 24'8" YD-RWST	R 3	OPEN OPEN PASSIVE	MCC5-5		
3	7	SV-1-1	FW	FEEDWATER REGULATING VALVE FW-FCV-13 -1 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-1-2	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-2 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
	7	SV-1-3	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-3 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
,	7	SV-1-4	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-4 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-2-1	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-1 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		

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CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3	7	SV-2-2	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-2 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-2-3	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-3 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-2-4	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-4 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-3-1	FW	FEEDWATER REGULATING VALUE FW-FCV-1301-1 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-3-2	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-2 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-3-3	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-3 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
3	7	SV-3-4	FW	FEEDWATER REGULATING VALVE FW-FCV-1301-4 SOV	26013 (9)	TB 37'6" S EAST	B 15	OPEN CLOSED ACTIVE	SVAC-PNL-1		
1	14	SVAC-PNL-1	ELEC AC	120V AC SEMIVITAL PANEL 1	30001	SB 59'6" BEHIND CB	S 32	ON ON ACTIVE	MCC5-5		
1	14	SVAC-PNL-2	ELEC AC	120V AC SEMIVITAL PANEL 2	30001	SB 59'6" BEHIND CB	S 32	ON ON ACTIVE	SVAC-PNL-1		
1	8	SW-FCV-129	SW	SW FLOW CONTROL VLV FOR D/G EG-2A	26014 (8)	DG 21'6" A DIESEL	S 1	CLOSED OPEN ACTIVE	NO	32113 (32)	SW-SOV-129

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S. Reichle / Technical Manager	S P Reichle	12/17/93			
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ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
2	8	SW-FCV-130	SW	SW FLOW CONTROL VLV FOR D/G EG-2B	26014 (8)	DG 21'6" B DIESEL	S 1	CLOSED OPEN ACTIVE	NO	32113 (33)	SW SOV-130
1	8	SW-MOV-1	SW	EAST SW HEADER SUPPLY	26014 (2)	TB 21'6" NO EAST	SR	OPEN CLOSED ACTIVE	MCC5-5		
1	8	SW-MOV-2	SW	WEST SW HEADER SUPPLY	26014 (2)	TB 21'6" NO EAST	SR	OPEN CLOSED ACTIVE	MCC5-5		
3	8	SW-MOV-3	SW	COMPONENT COOLING Hx 1A OUTLET	26014 (5)	AB 21'6" LL CC Hx	SR 16	OPEN OP/CL ACTIVE	MCC5-6		
3	8	SW-MOV-4	SW	COMPONENT COOLING Hx 1B OUTLET	26014 (5)	AB 21'6" LL CC Hx	SR 16	OPEN OP/CL ACTIVE	MCC5-6		
2	8	SW-MOV-5	SW	SW SUPPLY TO 1A RHR Hx	26014 (6)	AB 21'6" AB	SR 16	CLOSED OP/CL ACTIVE	MCC5-5		
1	8	SW-MOV-6	SW	SW SUPPLY TO 1B RHR Hx	26014 (6)	AB 21'6" AB	SR 16	CLOSED OP/CL ACTIVE	MCC5-6		
2	8	SW-MOV-837A	SW	ADAMS FILTER 1A BYPASS	26014 (6)	AB 35'6" SE PAB	R 21	CLOSED CLOSED PASSIVE	MCC12-11		
1	8	SW-MOV-837B	SW	ADAMS FILTER 1B BYPASS	26014 (6)	AB 35'6" SE PAB	R 21	CLOSED CLOSED PASSIVE	MCC13-4		
2	R	SW-PCV-606	SW	TRAVELING WATER SCREEN SUPPLY	26014 (1)	CW 8'0" PUMPWELL	N/A 2	CLOSED CLOSED PASSIVE		32001 (6DE)	SW-SOV-606

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S. Reichle / Technical Manager	S. Reichle	12/17/93		Glenn Wainio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	8	SW-SOV-129	SW	SOV FOR SW FCV-129	26014 (8)	DG 215' A DIESEL	BR	OPEN CLOSED ACTIVE	LP-D1		
2	8	SW-SOV-130	SW	SOV FOR SW FCV-130	26014 (8)	DG 215' B DIESEL	BR	OPEN CLOSED ACTIVE	LP-D2		
1	8	SW-SOV-2210	SW	SOV FOR SW-TV-2210	26014 (5)	AB 35'6" 2ND FLOOR	BR	OPEN CLOSED ACTIVE	VAC-PNL-A DC-PNL-A DC-PNL-B	32J01 (5E)	
1	8	SW-SOV-2365A	SW	CONTROL VALVE FOR SW-TV-2365A	26014 (5)	AB	R	ACTIVE			
1	8	SW-SOV-2365B	SW	CONTROL VALVE FOR SW-TV-2365B	26014 (5)	AB	R	ACTIVE			
2	8	SW-SOV-606	SW	SOV FOR SW-PCV-606	26014 (1)	CW	BR	OP/CL CLOSED PASSIVE			
1	7	SW-TV-2210	SW	S/G BLOWDOWN CONDENSERS	26014 (5)	AB 35'6" 2ND FLOOR	S 2	OPEN CLOSED ACTIVE	AIR	32001 (11BA)	SW-SOV-2210
1	7	SW-TV-2365A	SW	NORTH SW HDR SUPPLY TRIP VALVE TO S/G BLOWDOWN CONDENSERS	26014 (5)	AB 35'6" 2ND FLOOR	S 2	OPEN CLOSED ACTIVE	AIR	26102 (8)	SW-SOV-2365A
2	7	SW-TV-2365B	SW	SOUTH SW HDR SUPPLY TRIP VALVE TO S/G BLOWDOWN CONDENSERS	26014 (5)	AB 35'6" 2ND FLOOR	S 2	OPEN CLOSED ACTIVE	AIR	26012 (8)	SW-SOV-2365B
1	R	SW-V-103A	SW	NORTH SW HEADER ISOLATION	26014 (2)		-	OPEN CLOSED ACTIVE	NO		

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

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CONNECTICUT YANKEE
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1	R	SW-V-103B	SW	SOUTH SW HEADER ISOLATION	26014 (2)		-	OPEN CLOSED ACTIVE	NO		
2	R	SW-V-602	SW	SCREENWASH SPRAY ISOLATION	26014 (1)		-	OPEN CLOSED ACTIVE	NO		
1	4	T-485	ELEC AC	4160/480V TRANSFORMER	30001	SB 436' A DIESEL	S	ON ON ACTIVE	BUS 8		
2	4	T-4911	ELEC AC	4160/480V TRANSFORMER	30001	SB 436' B DIESEL	B	ON ON ACTIVE	BUS 9		
2	4	T-496	ELEC AC	4160/480V TRANSFORMER	30001	SB 436' A DIESEL	S	ON ON ACTIVE	BUS 9		
2	4	T-IV-1C	ELEC AC	TRANSFORMER FOR 120V AC VITAL BUS INVERTER IV-1C	30001	SB 415' B SWGR	S	ON ON ACTIVE			
2	4	T-IV-1D	ELEC AC	TRANSFORMER FOR 120V AC VITAL BUS INVERTER IV-1D	30001	SB 415' B SWGR	S	ON ON ACTIVE			
3	19	TE-411A	RC	HOT LEG LOOP 1 TEMP	26007 (1)	CE 1'6" #1	S	ON ON ACTIVE	VAC-PNL-A		
3	19	TE-411B	RC	COLD LEG LOOP 1 TEMP	26007 (1)	CE 1'6" 1TC VLV	S	ON ON ACTIVE	VAC-PNL-A		
3	19	TE-412A	RC	HOT LEG LOOP 1 TEMP	26007 (1)	CE 1'6" 1TC VLV	S	ON ON ACTIVE	VAC-PNL-A		

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TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
3	19	TE-412B	RC	COLD LEG LOOP 1 TEMP	26007 (1)	CE 1'6" 1TC VLV	S	ON ON ACTIVE	VAC-PNL-A		
3	19	TE-413A	RC	HOT LEG LOOP 1 TEMP	26007 (1)	CE	1.97	ON ON ACTIVE	VAC-PNL-A		
3	19	TE-413B	RC	COLD LEG LOOP 1 TEMP	26007 (1)	CE	1.97	ON ON ACTIVE	VAC-PNL-A		
3	19	TE-421A	RC	HOT LEG LOOP 2 TEMP	26007 (1)	CE 1'6" #2	S	ON ON ACTIVE	VAC-PNL-B		
3	19	TE-421B	RC	COLD LEG LOOP 2 TEMP	26007 (1)	CE 1'6" 2S/G SKRT	S	ON ON ACTIVE	VAC-PNL-B		
3	19	TE-422A	RC	HOT LEG LOOP 2 TEMP	26007 (1)	CE 1'6" S/G SKRT	S	ON ON ACTIVE	VAC-PNL-B		
3	19	TE-422B	RC	COLD LEG LOOP 2 TEMP	26007 (1)	CE 1'6" 2TC VLV	S	ON ON ACTIVE	VAC-PNL-B		
3	19	TE-423A	RC	HOT LEG LOOP 2 TEMP	26007 (1)	CE	1.97	ON ON ACTIVE	VAC-PNL-B		
3	19	TE-423B	RC	COLD LEG LOOP 2 TEMP	26007 (1)	CE	1.97	ON ON ACTIVE	VAC-PNL-B		
3	19	TE-431A	RC	HOT LEG LOOP 3 TEMP	26007 (2)	CE 1'6" #3	S	ON ON ACTIVE	VAC-PNL-C		

CERTIFICATION:

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S. Reichle / Technical Manager	S. Reichle	12/17/93		Steven Waivio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
3	19	TE-431B	RC	COLD LEG LOOP 3 TEMP	26007 (2)	CE 1'6" 3TC VLV	S	ON ON ACTIVE	VAC-PNL-C		
3	19	TE-432A	RC	HOT LEG LOOP 3 TEMP	26007 (2)	CE 1'6" 3S/G SKRT	S	ON ON ACTIVE	VAC-PNL-C		
3	19	TE-432B	RC	COLD LEG LOOP 3 TEMP	26007 (2)	CE 1'6" 3TC VLV	S	ON ON ACTIVE	VAC-PNL-C		
3	19	TE-433A	RC	HOT LEG LOOP 3 TEMP	26007 (2)	CE	1,97	ON ON ACTIVE	VAC-PNL-C		
3	19	TE-433B	RC	COLD LEG LOOP 3 TEMP	26007 (2)	CE	1,97	ON ON ACTIVE	VAC-PNL-C		
3	19	TE-441A	RC	HOT LEG LOOP 4 TEMP	26007 (2)	CE 1'6" #4	S	ON ON ACTIVE	VAC-PNL-D		
3	19	TE-441B	RC	COLD LEG LOOP 4 TEMP	26007 (2)	CE 1'6" 4TC VLV	S	ON ON ACTIVE	VAC-PNL-D		
3	19	TE-442A	RC	HOT LEG LOOP 4 TEMP	26007 (2)	CE 1'6" 4S/G SKRT	S	ON ON ACTIVE	VAC-PNL-D		
3	19	TE-442B	RC	COLD LEG LOOP 4 TEMP	26007 (2)	CE 1'6" 4TC VLV	S	ON ON ACTIVE	VAC-PNL-D		
3	19	TE-443A	RC	HOT LEG LOOP 4 TEMP	26007 (2)	CE	1,97	ON ON ACTIVE	VAC-PNL-D		

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S. Reichle / Technical Manager	S Reichle	12/17/93	Steve Waimis	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
3	19	TE-443B	RC	COLD LEG LOOP 4 TEMP	26007 (2)	CE	1,97	ON ON ACTIVE	VAC PNL D		
1	21	TK-101-2AA	DG	D/G AIR FLASK	26020 (2)	DG 21'6" A DIESEL	3	N/A N/A PASSIVE	NO		
1	21	TK-101-2AB	DG	D/G AIR FLASK	26020 (2)	DG 21'6" A DIESEL	S	N/A N/A PASSIVE	NO		
1	21	TK-101-2AC	DG	D/G AIR FLASK	26020 (2)	DG 21'6" A DIESEL	S	N/A N/A PASSIVE	NO		
1	21	TK-101-2AD	DG	D/G AIR FLASK	26020 (2)	DG 21'6" A DIESEL	S	N/A N/A PASSIVE	NO		
1	21	TK-101-2AE	DG	D/G AIR FLASK	26020 (2)	DG 21'6" A DIESEL	S	N/A N/A PASSIVE	NO		
1	21	TK-101-2AF	DG	D/G AIR FLASK	26020 (2)	DG 21'6" A DIESEL	S	N/A N/A PASSIVE	NO		
2	21	TK-101-2BA	DG	D/G AIR FLASK	26020 (2)	DG 21'6" B DIESEL	S	N/A N/A PASSIVE	NO		
2	21	TK-101-2BB	DG	D/G AIR FLASK	26020 (2)	DG 21'6" B DIESEL	S	N/A N/A PASSIVE	NO		
2	21	TK-101-2BC	DG	D/G AIR FLASK	26020 (2)	DG 21'6" B DIESEL	S	N/A N/A PASSIVE	NO		

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S. Reichle / Technical Manager	S Reichle	12/17/93	Steven Mannio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103 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 AND COMPONENTS
2	21	TK-101-2BD	DG	D/G AIR FLASK	26020 (2)	DG 21'6" B DIESEL	S	N/A N/A PASSIVE	NO		
2	21	TK-101-2BE	DG	D/G AIR FLASK	26020 (2)	DG 21'6" B DIESEL	S	N/A N/A PASSIVE	NO		
2	21	TK-101-2BF	DG	D/G AIR FLASK	26020 (2)	DG 21'6" B DIESEL	S	N/A N/A PASSIVE	NO		
3	21	TK-2-1A	CVCS	BORIC ACID TANK	26108 (3)	AB 21'6" 1ST FL	S	N/A N/A PASSIVE	NO		
3	21	TK-20-1A	PWS	PWST	26046 (1)	YD 21'6" INSD RCA	S	N/A N/A PASSIVE	NO		
3	21	TK-25-1A	AFW	CWST	26013 (13)	YD 21'6" OTSD RCA	S	N/A N/A PASSIVE	NO		
1	21	TK-25-1B	AFW	CONDENSATE STORAGE TANK	26013 (13)	YD 21'6" OTSD RCA	S	N/A N/A PASSIVE	NO		
1	21	TK-33-2A	DG	EDG FUEL OIL STORAGE TANK	26020 (1)	YD 18'6" NO. YARD	S	N/A N/A PASSIVE	NO		
2	21	TK-33-2B	DG	EDG FUEL OIL STORAGE TANK	26020 (1)	YD 18'6" NO. YARD	S	N/A N/A PASSIVE	NO		
3	21	TK-4-1A	SI	RWST	26010 (1)	YD 21'6" INSD RCA	S	N/A N/A PASSIVE	NO		

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S. Reichle / Technical Manager	S P Reichle	12/17/93	Steve Waimio	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

ATTACHMENT B
CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TRAIN	EQ CL	EQUIPMENT ID NUMBER	SYSTEM	EQUIPMENT DESCRIPTION	16103-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 AND COMPONENTS
1	21	TK-5-1A	CC	COMP COOL WTR SURGE TANK	26008 (3)	AB 35'6" GND FL	S	N/A N/A PASSIVE	NO		
1	21	TK-53-1A	FP	DIESEL FIRE PUMP FUEL OIL STORAGE TANK	26056 (1)	CW 21'6"	S	N/A N/A PASSIVE			
2OP	21	TK-80-1A	CA	PORV (PR-AOV-568 & 570) AIR RECEIVER	26054	CE 48'6" CTMT	S	N/A N/A PASSIVE	NO		
1	14	VAC-PNL-A	ELEC AC	120V AC VITAL PANEL A	30001	SB 59'6" MCB/A	S	ON ON ACTIVE	IV-1A		
1	14	VAC-PNL-B	ELEC AC	120V AC VITAL PANEL B	30001	SB 59'6" MCB/A	S	ON ON ACTIVE	IV-1B		
2	14	VAC-PNL-C	ELEC AC	120V AC VITAL PANEL C	30001	SB 59'6" MCB/A	S	ON ON ACTIVE	IV-1C		
2	14	VAC-PNL-D	ELEC AC	120V AC VITAL PANEL D	30001	SB 59'6" MCB/A	S	ON ON ACTIVE	IV-1D		

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S. Reichle / Technical Manager	S. Reichle	12/17/93		Steve Weinis	12/17/93
Print or Type Name/Title	Signature	Date	Print or Type Name/Title	Signature	Date

NUSCO SQUG PROJECT - CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
NOTES

Note No.	Description
1	Valve fails open (FO) on loss of air.
2	Valve fails closed (FC) on a loss of air.
3	Power supply breaker for valve is racked out and valve is disabled open per Technical Specifications.
4	Backup air supply filter required to open valve if instrument air is not available. Failure mode of CH-AOV-278 needs to be determined
5	This filter should receive the same review as a tank or heat exchanger to ensure the integrity of the system pressure boundary.
6	Either carging pump P-18-1A or P-18-1B may be used in conjunction with the backup (B) train.
7	Power to valves is removed during normal operations by locking open the respective supply breakers.
8	The LTOP relief valves will need to be placed in service prior to placing the RHR system into service, or when the Pressurizer steam phase temperature has decreased below 450F.
9	This manual valve can be used as a backup means of establishing flow if necessary.
10	Backup air supply bottles available at valve.
11	(Note no longer used in this SSEL)
12	Power removed from valve motor operator via isolation switch in the Main Control Room.
13	ABT normally receives power from Train 1 but can switch to Train 2.
14	Valve is locked and blocked in the closed position.
15	A relay review of the contacts associated with this solenoid valve was included with the review of the valve identified in the "Equipment Description" field.
16	Valve may need to be closed depending upon the number of Service Water Pumps available.
17	This manual valve can be used as a backup means of securing flow if necessary.
18	This pump, if located on the diesel engine skid, may be qualified under the "Rule of the Box".
19	Valve needs to remain closed to isolate boric acid recovery equipment that has not been seismically qualified using the SQUG guidelines.
20	Filters are not required to maintain CAR fans operable, but are included on the SSEL to ensure that the service water system is not breached by a seismic event.
21	Valve may be used to bypass filter and supply water to CAR fan coolers should the filter become clogged.

NUSCO SQUG PROJECT - CONNECTICUT YANKEE
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
NOTES

Note No.	Description
22	Nuclear instrumentation was seismically reviewed when replaced and consists of solid state circuitry (See Impell letter 0240-099-029, dated 6/5/92). No other reviews were performed for this project.
23	Filter should be seismically reviewed to ensure that fluid will not be lost from system should it fail.
24	Only one Component Cooling Water pump is required to be running for system operability.
26	Valve is locked and blocked in the open position.
27	Required for pressure boundary maintenance only.
28	All relays that might be associated with the generator have been included with either the Diesel Engine (EG-2A or 2B), or the gererator output breaker (BKR-8-1 or 9-1) relay evaluations.
29	(Note no longer used in this SSEL)
30	The pilot operated relief valves and their associated SOVs were seismically evaluated as part of PDCR-1316.
31	This component (i.e. panel) was added to the SSEL as a result of the relay evaluation effort. These panels contain relays required to support the operation of safe shutdown equipment and require a seismic evaluation.
32	This semi-vital panel can also be powered from Train 2 via ABT device.
33	A relay review of the diesel generator air start valves DA-SOV-133 through 136 was included with the review of EG-2A or EG-2B.
34	The control loop for this valve is all pneumatic with no electrical control element or associated contact device.

ATTACHMENT C

Plant Operating Procedures

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

Connecticut Yankee's Operations Department stated that in the event of an earthquake that required a plant shutdown, the operators would utilize the Westinghouse Owners Group (WOG) procedures. These WOG procedures for shutting down the reactor and bringing the plant to a safe shutdown condition, have been developed into plant specific procedures. In addition to the WOG procedures, 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 Proceudres 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 Connecticut Yankee. 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.

In addition to identifying the main steps of each procedure, the Figure 1also identifies additional operator actions called out in the SSEL report that are not addressed in existing procedures.

SUMMARY OF PROCEDURES AND STEPS REQUIRED FOR SHUTDOWN
ATTACHMENT C

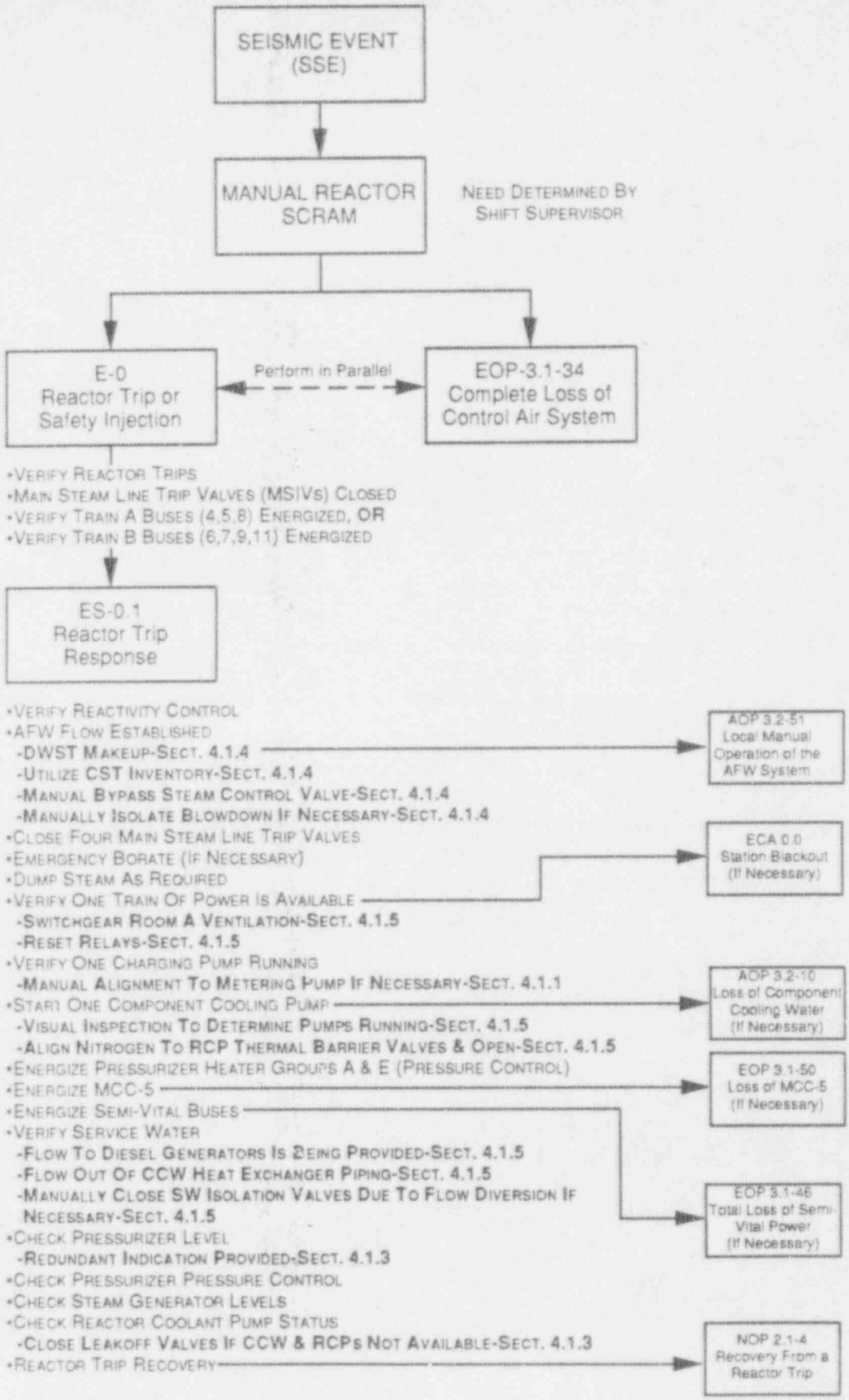

FIGURE 1

For details of Operator Actions in bold-faced print, refer to the referenced section in report.