

APPENDIX 9A

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APPENDIX 9A

HOPE CREEK GENERATING STATION

APPENDIX R COMPARISON

INTRODUCTION

This report responds to the NRC letter to Mr. R. L. Mittl of PSE&G, dated October 15, 1981, requesting Hope Creek to compare its fire protection program to Appendix R of 10CFR50, specifically identifying and justifying any deviations from Appendix R.

The comparison to NRC Generic Letter 81-12 with clarifications, dated March 25, 1982, is included.

This report is an item by item comparison of the Hope Creek fire protection program to both of the above documents. The specific paragraphs of the guidelines have, in some cases, been divided into sentences or paraphrased for ease in providing responses.

The fire protection evaluation report that PSE&G submitted to the NRC, on October 21, 1977, has not been updated and resubmitted since the basis for the report, Appendix A to BTP APCSB 9.5-1, has been deleted. The Branch Technical Position CMEB 9.5-1 has incorporated the Appendix A guidelines, which are included in Standard Review Plan 9.5.1, Revision 3.

APPENDIX R GUIDELINES AND HOPE CREEK DESIGN COMPARISON

III. Specific Requirements

III.A. Water Supplies for Fire Suppression Systems

III.A.1. Two separate water supplies shall be provided to furnish necessary water volume and pressure to the fire main loop.

Response:

Comply. The Hope Creek fire protection water supply is from two dedicated 100 percent capacity 350,000 gallon fire water storage tanks, of which 328,000 gallons is dedicated to fire protection. (See FSAR Section 9.5.1.2.3.1)

III.A.2. Each supply shall consist of a storage tank, pump, piping, and appropriate isolation and control valves.

Response:

Comply. (See FSAR Sections 9.5.1.2.3.1 and 9.5.1.2.3.2.)

III.A.3. These supplies shall be separated so that a failure of one supply will not result in a failure of the other supply.

Response:

Comply with intent. The fire water supply tanks are valved such that failure of one tank will not result in failure of the other tank. (See FSAR Section 9.5.1.2.3.1)

III.A.4. Each supply of the fire water distribution system shall be capable of providing, for a period of 2 hours, the maximum expected water demands as determined by the fire hazards analysis

for safety-related areas or other areas that present a fire exposure hazard to safety-related areas.

Response:

Comply. The largest system water demand plus hose allowance can be provided for 2 hours.

III.A.5. Requirements for ensuring minimum water volume when storage tanks are used for combined service water/fire water uses.

Response:

Comply. The fire water storage tanks provide both fire protection water and boiler blowdown/demineralizer makeup water. Piping routed outside the storage tank allows boiler blowdown/demineralizer makeup water usage only above the 328,000 gallon level.

III.A.6. Requirements for other water systems used as sources of fire protection water.

Response:

Not applicable. No other systems are used as a source of fire protection water.

III.B. Sectional Isolation Valves

Sectional isolation valves such as post indicator valves or key operated valves shall be installed in the fire main loop to permit isolation of portions of the main fire main loop for maintenance or repair without interrupting the entire water supply.

Response:

Comply. Post indicator valves provide sectionalized control and isolation of portions of the fire main loop. See FSAR Section 9.5.1.2.3.3.

III.C. Hydrant Isolation Valves

Valves shall be installed to permit isolation of outside hydrants from the fire main for maintenance or repair without interrupting the water supply to automatic or manual fire suppression systems in any area containing or presenting a fire hazard to safety-related or safe shutdown equipment.

Response:

Comply. Hydrants are provided with a key operated gate valve with a curb box. See FSAR Section 9.5.1.2.3.3.

III.D. Manual Fire Suppression

III.D.1. Standpipe and hose systems shall be installed so that at least one effective hose stream will be able to reach any location that contains or presents an exposure fire hazard to structures, systems, or components important to safety.

Response:

Comply. All normally accessible areas of the plant can be reached by at least one effective hose stream. See FSAR Section 9.5.1.2.9.

III.D.2. Access to permit effective functioning of the fire brigade shall be provided to all areas that contain or present an exposure fire hazard to structures, systems, or components important to safety.

Response:

Comply. There are no areas that do not have access for fire brigade functioning.

III.D.3. Standpipe and hose stations shall be inside pressurized water reactor (PWR) containments and boiling water reactor (BWR) containments that are not inerted.

Response:

Not applicable. The HCGS drywell is inerted. Therefore, there are no standpipes or hose stations inside the drywell.

III.D.4. For BWR drywells, standpipe and hose stations shall be placed outside the drywell with adequate lengths of hose to reach any location inside the drywell with an effective hose stream.

Response:

Comply. Standpipe with hose stations have been provided. See FSAR Section 9.5.1.2.18.

III.E. Hydrostatic Hose Tests

Fire hose shall be hydrostatically tested at a pressure of 150 psi or 50 psi above maximum fire main operating pressure, whichever is greater. Hose stored in outside hose houses shall be tested annually. Interior standpipe hose shall be tested every three years.

Response:

Comply. Details of procedures are described in the HCGS Fire Protection Surveillance and Periodic Test Program, NC.FP-AP.ZZ-0005(Q).

III.F. Automatic Fire Detection

Automatic fire detection systems shall be installed in all areas of the plant that contain or present an exposure fire hazard to safe shutdown safety-related systems or components. These fire detection systems shall be capable of operating with or without offsite power.

Response:

Comply. All plant areas with a combustible loading greater than 8000 Btu/ft² that present an exposure fire hazard to safe shutdown systems or components have automatic fire detection systems that are capable of operating with or without offsite power. See FSAR Section 9.5.1.2.15.

III.G. Fire Protection of Safe Shutdown Capability

III.G.1a. Fire damage shall be limited so that one train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station is free of fire damage.

Response:

Comply. A fire hazard analysis has been performed on all areas of the Auxiliary Building, Reactor Building and Intake Structure. At least one train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station was shown to be free of fire damage for each fire area therein. See specific exemptions requested to Appendix R, Section III.G and the corresponding deviations granted by the NRC to BTP 9.5-1 in Section 9A.6.

III.G.1b. Fire damage shall be limited so that systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station can be repaired within 72 hours.

Response:

One train of cold shutdown equipment will remain free of fire damage or will be available for use with repairs.

III.G.2. Where redundant safe shutdown cable and equipment, including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, are located in the same fire zone outside of containment, separation of redundant trains shall be provided as follows:

- a. Fire barrier having a 3 hour rating including supporting steel, or
- b. Separation by not less than 20 feet horizontal distance plus automatic suppression and detection, or
- c. Fire barrier having a 1 hour rating plus automatic suppression and detection.

Response:

The response to this guideline is located in Item 1 of the responses to the NRC Generic Letter 81-12, which follows these Appendix R responses. See specific exemptions requested to Appendix R, Section III.G and the corresponding deviations granted by the NRC to BTP 9.5-1 in Section 9A.6.

III.G.2.d,e&f. Alternative means of providing fire protection inside non-inerted containments.

Response:

Not applicable. The HCGS primary containment is inerted.

III.G.3a,b. Provision of alternative or dedicated shutdown capability in certain fire areas plus a fixed fire suppression system.

Response:

The response to this item is given in Item 2 of the responses to the NRC Generic Letter 81-12 which follows these Appendix R responses. See specific exemptions requested to Appendix R, Section III.G and the corresponding deviations granted by the NRC to BTP 9.5-1 in Section 9A.6.

III.H. Fire Brigade

Requirements for the onsite fire brigade.

Response:

Comply. HCGS will comply with the fire brigade organization training and equipment requirements of BTP CMEB 9.5-1, Revision 2, and Appendix R to 10CFR50. The detail discussion of fire brigade organization and equipment is provided in FSAR Section 9.5.1.5.2

III.I. Fire Brigade Training

Requirements for training of fire brigade members.

Response:

Comply. The training program is provided in FSAR Section 9.5.1.5.2.

III.J. Emergency Lighting

Emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment, and in access and egress routes thereto.

Response:

Comply. Eight-hour battery powered lighting is provided for safe shutdown operating areas and access and egress routes.

III.K. Administrative Controls

Establishment of administrative controls to minimize fire hazards.

Response:

Comply. HCGS will comply with the administrative controls requirements of Branch Technical Position (BTP) CMEB 9.5-1, Revision 2, and Appendix R to 10CFR50. The administrative controls procedure is provided in FSAR Section 9.5.1.5.3

III.L. Alternative and Dedicated Shutdown Capability

III.L.1a. The alternative or dedicated shutdown capability provided for a specific fire area shall be able to achieve and maintain subcritical reactivity conditions in the reactor, maintain reactor coolant inventory, achieve and maintain hot shutdown conditions, achieve cold shutdown conditions within 72 hours, and maintain cold shutdown conditions thereafter.

Response:

Comply. The areas for which alternative shutdown capability is provided are listed in Table 1 of the attached responses to NRC Generic Letter 81-12. The reactor shutdown is the same as a normal shutdown from the main control room, but will use controls and instrumentation located at the remote shutdown facility, the diesel generator control panels, and at equipment operating areas.

III.L.1b. During the postfire shutdown, the reactor coolant system process variables shall be maintained within those predicted for a

loss of normal ac power, and the fission product boundary integrity shall not be affected.

Response:

Comply. Process variables for a reactor shutdown from the remote shutdown facility and equipment operating areas will be maintained the same as during a shutdown from the main control room.

III.L.2. Performance goals for the shutdown functions.

III.L.2.a. The reactivity control function shall be capable of achieving and maintaining cold shutdown reactivity conditions

Response:

Comply. Cold shutdown reactivity conditions will be achieved and maintained from the remote shutdown facility. The operational capabilities of the remote shutdown facility are discussed in FSAR Section 7.4.1.4.

III.L.2.b. The reactor coolant makeup function shall be capable of maintaining the reactor coolant level above the top of the core for BWRs, and be within the level indication in the pressurizer for PWRs.

Response:

Comply. The reactor coolant makeup function is capable of maintaining the reactor coolant level above the top of the core, using the controls located at the remote shutdown facility on panel 10C-399. See FSAR Section 7.4.1.4. The analysis for demonstrating that water level remains above the top of the core using the remote shutdown panel controls assumes that RCIC is initiated within ten minutes.

III.L.2.c. The reactor heat removal function shall be capable of achieving and maintaining decay heat removal.

Response:

Comply. The reactor heat removal function can be achieved and maintained using controls and instrumentation located on the remote shutdown facility on panel 10C-399. See FSAR Section 7.4.1.4.

III.L.2.d. The process monitoring function shall be capable of providing direct readings of the process variables necessary to perform and control the above functions.

Response:

Comply. The process monitoring functions provide direct readings of the process variables necessary to perform and control the functions in 2a., 2b., and 2c. above. The readings at the remote shutdown facility panel are as follows:

1. Reactor vessel level
2. Reactor vessel pressure
3. Suppression pool temperature.

Reactor coolant temperature will be inferred from reactor vessel pressure and steam tables located in the remote shutdown facility.

III.L.2.e. The supporting functions shall be capable of providing the process cooling, lubrication, etc. necessary to permit the operation of the equipment used for safe shutdown.

Response:

Comply. The supporting functions required, such as process cooling and lubrication, etc, are available for operation of safe shutdown equipment. Ventilation is required to support certain safe shutdown functions. It is required for the Reactor Building equipment areas

containing the RCIC, HPCI, RHR, SACS, and for the diesel areas containing diesel generators, and safe shutdown electrical equipment rooms.

Ventilation for the Reactor Building safe shutdown equipment areas is provided by unit coolers in each pump room. Ventilation for diesel generator rooms, and diesel area Class 1E battery rooms is provided by the Auxiliary Building Diesel Generator Area Heating, Ventilation, and Cooling System. Both the Reactor Building Equipment Area Cooling Systems (EACS) room coolers, and the Diesel Area Ventilation System coolers are locally controlled and will automatically start on a high room temperature.

Separation for the power to the unit cooler fans and the cooling water circuit is maintained such that, for any given fire, only one safe shutdown division will be affected by the loss of the supporting ventilation systems.

III.L.3. The shutdown capability for specific fire areas may be unique for each such area, or it may be one unique combination of systems for all such areas. In either case, the alternative shutdown capability shall be independent of the specific fire area(s) and shall accommodate postfire conditions where offsite power is available and where offsite power is not available for 72 hours. Procedures shall be in effect to implement this capability.

Response:

Comply. The cable from the remote shutdown panel (RSP) to safe shutdown equipment and process instrumentation cable routing have been verified to be independent of the specific fire areas requiring remote shutdown. The RSP control and instrumentation is available whether offsite power is available or not. Procedures are in effect to implement this capability.

III.L.4.a. If the capability to achieve and maintain cold shutdown will not be available because of fire damage, the equipment and systems comprising the means to achieve and maintain the hot shutdown condition shall be capable of maintaining such conditions until cold shutdown can be achieved.

Response:

Comply. When safe shutdown Method I is utilized, HPCI system is used initially for hot shutdown. HPCI steam consumption will result in reducing reactor pressure. However, HPCI system isolation setpoint is set at 100 psig which is above the operating pressure for RHR shutdown cooling which is set at 82 psig.

In order to ensure the ability to depressurize the plant to the point for shutdown cooling operation, TSC Assist Guidelines Procedure is utilized to implement repair actions for Remote Manual Operation of SRVs.

III.L.4.b. If such equipment and systems will not be capable of being powered by both onsite and offsite electric power systems because of fire damage, an independent onsite power system shall be provided. The number of operating shift personnel, exclusive of fire brigade members, required to operate such equipment and systems shall be onsite at all times.

Response:

Not applicable. The capability to achieve cold shutdown will be available without repairing fire damage.

III.L.5. Equipment and systems comprising the means to achieve and maintain cold shutdown conditions shall not be damaged by fire; or the fire damage to such equipment and systems shall be limited so that the systems can be made operable and cold shutdown can be achieved within 72 hours.

Material for such repairs shall be readily available onsite and procedures shall be in effect to implement such repairs.

If the equipment and systems comprising the means to achieve and maintain cold shutdown conditions (and which are used prior to 72 hours after the fire) will not be capable of being powered by

both offsite and onsite power systems because of fire damage, an independent onsite power system shall be provided.

Response:

Comply. When safe shutdown Method I is utilized, HPCI system is used initially for hot shutdown. HPCI steam consumption will result in reducing reactor pressure. However, HPCI system isolations etpoint is set at 100 psig which is above the operating pressure for RHR shutdown cooling which is set at 82 psig.

In order to ensure the ability to depressurize the plant to the point for shutdown cooling operation, TSC Assist Guidelines Procedure is utilized to implement repair actions for Remote Manual Operation of SRVs. Equipment and material required for this repair are available on site.

III.L.6. Shutdown systems installed to ensure post fire shutdown capability need not be designed to meet Seismic Category I criteria, single failure criteria, or other design basis accident criteria, except where required for other reasons.

Response:

Comply. The safe shutdown systems are designed commensurate with their importance to safety and other safety requirements.

III.L.7. Isolation of safe shutdown equipment and systems from associated non-safety circuits.

Response:

Comply. The response to this guideline is given in Item 2, Associated Circuits of Concern (a through c) of the NRC Generic Letter 81-12 which follows these Appendix R responses.

III.M. Fire Barrier Cable Penetration Seal Qualification

The acceptance criteria for the tests shall include the 3 items listed below:

Response:

Comply. The penetration seals are qualified by tests that are comparable to tests used to rate fire barriers.

III.M.1. The cable fire barrier penetration seal has withstood the fire endurance test without passage of flame or ignition of cables on the unexposed side for a period of time equivalent to the fire resistance.

Response:

Comply. The seals are tested in accordance with the guidelines in BTP CMEB 9.5-1, Revision 2, Section 5.a.3.(a).

III.M.2. The temperature levels recorded for the unexposed side are analyzed and demonstrate that the maximum temperature is sufficiently below the cable insulation ignition temperature.

Response:

Comply. The temperature testing and records are in accordance with SRP 9.5-1, Revision 2, Section 5.a.3.(b).

III.M.3. The fire barrier penetration seal remains intact and does not allow projection of water beyond the unexposed surface during the hose stream test.

Response:

Comply. The material used is in accordance with SRP 9.5-1, Revision 2, Section 5.a.3.(c).

III.N. Fire Doors

Fire doors shall be self-closing, or provided with closing mechanisms, and shall be inspected semiannually to verify that automatic hold open, release, and closing mechanisms and latches are operable.

Response:

Comply.

- a. Fire doors which are not electrically supervised or kept locked closed are inspected daily to verify they are in the proper position, and in the case of doors equipped with automatic hold open and release mechanisms, to verify the door is clear of obstructions.
- b. Unsupervised fire doors which are kept locked closed are inspected weekly to verify they are in the closed position.
- c. Fire doors and associated hardware are inspected semi-annually for operability.
- d. Safety-related areas which are protected by total flooding carbon dioxide suppression systems have electrically supervised self-closing fire doors.

III.O. Oil Collection System for Reactor Coolant Pump

The reactor coolant pump shall be equipped with an Oil Collection System if the containment is not inerted during normal operation.

Response:

Not applicable. The HCGS containment is inerted during normal operation.

FIRE HAZARD ANALYSIS

The following criteria and methodology were used in the fire hazard analysis.

9A.1 GENERAL CRITERIA

Criteria and assumptions used to evaluate the effects of postulated fires in areas, systems, components, and equipment required for safe shutdown for the HCGS fire hazard analysis.

9A.1.1 Only one fire is assumed to occur within the plant at any given time.

9A.1.2 The spread of a fire is assumed to be limited to the fire area in which the fire originates. A fire area is that portion of a structure that is separated from other areas by boundary fire barriers having 3-hour ratings, except that the following conditions are permissible:

1. A fire barrier between adjacent fire areas may contain features having ratings of less than 3 hours, provided that the combustible loading on both sides of the fire barrier is low and that potentially only minor quantities of heat and smoke could pass through the barrier.
2. A larger fire area may be subdivided into two regions that are treated independently in the safe shutdown analyses, if a 20-foot-wide combustible free zone is provided between the two regions.

A fire area is made up of a single room or group of rooms. Rooms are identified on the Architecture GENERAL PLANT FLOOR PLAN drawings A-0201-0 through A-0208-0.

9A.1.3 The combustible material associated with the equipment and cable is identified, and the total heat release is calculated

based on the total inventory of the combustibles. The heat of combustion for the Ethylene Propylene Rubber (EPR), individual conductor, insulation is 10,000 Btu/lb. The EPR is wrapped in a Hypalon jacket to make a control or instrument cable. The Hypalon has a heat of combustion of 8100 Btu/lb. NRC tests documented in, "Program Plan for the Evaluation of the 20-foot Separation Criteria", Appendix 4, dated 2/17/82, have demonstrated a 50 percent total burn efficiency. We have assumed that all cable insulation has a heat of combustion of 10,000 Btu/lb. Therefore, with a 50 percent efficiency, the equivalent heat of combustion used for HCGS cable insulation is 5,000 Btu/lb. The heat of combustion for battery cases is 13,310 Btu/lb, and for carbon absorber media 14,800 Btu/lb. Lube oil and diesel fuel oil heat of combustion is taken as 20,000 Btu/lb (148,000 Btu/gal). The heat of combustion of fiberglass reinforced plastic (FRP) is 12,250 Btu/lb. The heat of combustion used for paper is 8000 Btu/lb. The equivalent fire severity in minutes is extracted from NFPA FIRE PROTECTION HANDBOOK for an equivalent wood fire, i.e., 6 minutes for each 8000 Btu per square foot.

9A.1.3.1 All cable trays are assumed to be filled to the maximum permissible amount. In all cases the actual cable combustible is less than that assumed.

9A.1.4 All components affected by a postulated fire are assumed to be inoperable or misoperated, i.e., hot short, whichever is worse.

9A.1.5 In evaluating the effects of postulated transient and/or in situ exposure fires on safe shutdown equipment and raceways, the following set of assumptions are used.

- a. There is a loss of offsite power (LOP) or not, whichever is worse for alternate shutdown capability from Remote Shutdown Panel or if LOP is caused by fire while shutting down from Control Room. Offsite power may be unavailable for as long as 72 hours after the occurrence of a fire.

- b. There will be no random single failures (other than a single fire and its effects). All equipment not affected by a fire and LOP are assumed to be working normally.
- c. Plant accidents and severe natural phenomena are not assumed to occur concurrently with a postulated fire.
- d. The main control room is the preferred shutdown location.
- e. Q listed, 1E equipment and controls are preferred for hot and cold shutdown.
- f. Spurious operation caused by hot shorts, open circuits or shorts to ground is considered, unless it can be shown in the analysis that such spurious operation will not occur. For spurious signals the following guidelines apply as stated in Generic Letter 85-01.
 - 1. The safe shutdown capability should not be adversely affected by any one spurious actuation or signal resulting from a fire in any plant area; and
 - 2. The safe shutdown capability should not be adversely affected by a fire in any plant area which results in the loss of all automatic function (signals, logic) from the circuits located in the area in conjunction with one worst case spurious actuation or signal resulting from the fire; and
 - 3. The safe shutdown capability should not be adversely affected by a fire in any plant area which results in simultaneous spurious actuation of all valves in high-low pressure interface lines.

9A.1.5.1 The systems that are relied on for achieving safe shutdown from the Remote Shutdown Locations must be capable of

bringing the plant to cold shutdown conditions within 72 hours after the occurrence of a fire.

9A.1.5.2 For any shutdown method that is selected for use after a fire, the systems necessary to achieve and maintain hot shutdown conditions must remain free of fire damage. The systems necessary to achieve and maintain cold shutdown conditions (but not hot shutdown conditions) may be permitted to sustain fire damage, provided that the systems can be repaired within 72 hours.

9A.1.5.3 The types of repair actions that are permitted for cold shutdown systems include replacement of cabling and removal or replacement of fuses. The use of clip leads on replacement cables is not permitted, which means that hard wired terminal lugs must be used. Replacement materials to be used in the repair actions must be stored onsite and written procedures governing the performance of the repairs must be implemented.

9A.1.5.4 Manual operation of valves, circuit breakers, and hand switches is not considered to be a repair action and may be utilized in exercising control over hot shutdown systems as well as cold shutdown systems.

9A.1.6 Manual firefighting techniques only are required for the control room, since the control room is constantly staffed and an alternate shutdown method exists.

9A.1.7 An exposure fire within the primary containment is not credible since the containment is inerted during normal operation.

9A.1.8 Allowable transient combustible loads are quantified in the NBU administrative procedure controlling the fire protection program. The transient combustible loads shown in the individual Fire Hazard Tabulation Sheets in Tables 9A-6 through 9A-84 are transients which are routinely expected (i.e. the quantity of oil required to refill a lubricating (hydraulic oil

reservoir). Permanent storage areas for the fiberglass ladders have been established inside the Power Block at various elevations. Combustible loads for the ladders in the storage areas have not been included in the table for each fire area because of the small amount of combustible material involved, and because the ladders may be removed and used at other locations. The use of ladders in other areas throughout the plant is controlled as a transient combustible as described above. Calculations of combustible loadings and fire severity have been done assuming each storage area contains its maximum complement of ladders. These calculations reveal that the increase in combustible loading is within the design capability of the existing fire protection features for each area. Typically the fire severity increases by only a few seconds, and in no case exceeds two minutes for any room. Additional transient combustible loads have been generically considered, in quantities limited to those stated in the above referenced station administrative procedure. In all cases, the Fire Hazards Analysis remains acceptable, including the maximum allowable transient combustible loads, except for certain specified areas. These specific areas are shown with lower limits in the station administrative procedure, which results in an acceptable Fire Hazards Analysis.

9A.2 ELECTRICAL CRITERIA

Criteria used for electrical cable separation of safe shutdown cabling and associated circuits for the HCGS fire hazard analysis.

9A.2.1 Cables in conduit and metal covered tray are not considered to be combustible since the metal provides a barrier as described in IEEE-384-1981. The cables, however, are assumed to be affected by the fire.

9A.2.1.1 Metal clad, armor clad, flexible conduit, Heliax and Radiax cables are considered as a negligible combustible and are not considered as an intervening combustible or to contribute to the fire area combustible loading.

9A.2.2 Cable initiated fires are not credible.

9A.2.3 The main steam safety relief valves remote actuation are all powered from Division II. All 14 valves are on electrical channel B with the 5 ADS valves additionally powered from channel D. Reference has been made in the Fire Hazard Analysis that redundant division I cable and equipment is used for safe shutdown. The channel B and channel D cable routing are separated such that a single fire outside the MCR, CER or CSR is not likely to affect both channel B and D relief valves. Therefore, relief valve use should be available from the MCR for Division I safe shutdown method I for fires outside the MCR, CER,

or CSR. In the unlikely event that fire induced damage impacts all 14 Safety Relief Valves, repair actions are implemented as part of the cold shutdown strategy to ensure the ability to depressurize the plant to the point for shutdown cooling operation.

9A.2.4 There are no associated circuits of concern as defined by generic letter 81-12 and its clarification letter. All circuits, either safety-related or non-safety-related, are protected by coordinated protection devices, e.g., fuses, circuit breakers, etc. This ensures that the redundant power sources are protected from a fire caused fault in an associated circuit. Refer to Figures 9A-14 through 9A-31 for protective device coordination curves.

9A.2.4.1 High impedance faults have been considered for all associated circuits located in the fire area of concern.

9A.2.5 High-low pressure interface redundant isolation valves and associated cabling (power and control) are reviewed to assure adequate physical and electrical separation so that fire induced failures of the cables (hot short, open circuits, or short to ground) will not cause maloperation or result in a loss-of-coolant accident (LOCA).

9A.2.6 Circuits of equipment, and/or components whose spurious operation would affect the capability to shut down, are provided with means to isolate the equipment from the fire area by the following means:

- a. Provide a means to isolate the equipment and/or components from the fire area prior to the fire, i.e., open circuit breakers
- b. Provide electrical isolation that prevents spurious operation. Potential isolation devices that include circuit breakers, fuses, control switches, isolation relays, and fiber optic couplers

- c. Provide a means to detect spurious operations and then procedures to defeat the maloperation of equipment. Modifications must be achievable prior to the maloperation causing an unrecoverable plant condition.

9A.2.7 An open current transformer (CT) secondary lead has been considered and is not a credible safe shutdown concern.

9A.3 REFERENCE DOCUMENTS

9A.3.1 NRC Generic Letter 81-12 with clarifications

9A.3.2 Appendix R to 10CFR50 Fire Protection Rule

9A.3.3 Fire Protection Handbook, Fourteenth Edition

9A.3.4 Clarification of generic issues, SECY-83-269

9A.3.4 Generic Letter 85-01

9A.4 METHODOLOGY FOR THE FIRE HAZARD ANALYSIS

9A.4.1 The HCGS Fire Hazard Analysis, as required by Section II.B of Appendix R to 10CFR50, used the systematic fire area approach described below.

9A.4.1.1 The first step involved the selection of an appropriate fire area for evaluation. Individual rooms were grouped together to create fire areas so that the majority of the safe shutdown cable and equipment were of one division.

9A.4.1.2 A list of systems required to shutdown the plant was developed. From these systems a list of components required to operate to achieve safe shutdown or whose spurious actuation could affect safe shutdown was developed. These components are listed in Table 9A-2 by system. The table also lists the electrical power division, mechanical shutdown division, room number the

component is located in and piping and instrument diagram the component can be found on. Not included in the table are passive components such as piping, check valves, heat exchangers, rupture disks, manual valves, etc, which can not spuriously change state. Also not included are branch lines whose spurious operation will not affect safe shutdown operation of the system.

9A.4.1.2.1 Table 9A-3 is a list of the same components from Table 9A-2 sorted by fire area with the shutdown method added for each fire area.

9A.4.1.2.2 A list of valves whose spurious operation could affect safe shutdown or cause a LOCA through a high-low pressure interface was then developed. These valves are summarized in the response to Generic Letter 81-12, Item 2.1b and 2.2a, respectively and are included in Tables 9A-2 and 9A-3.

9A.4.1.2.3 A single fire or inadvertent operation of any Fire Protection System in safety-related areas was also analyzed and will not prevent safe shutdown of the plant. Automatic preaction or wet pipe sprinkler systems located in safety-related areas are of the type that have fusible heads. These systems cannot be actuated in the absence of a significant heat source in the vicinity of the sprinkler heads. For safety-related areas where manual deluge systems are located, the safety-related equipment has been designed such that operation of the deluge system will not prevent operation of the equipment for safe shutdown.

Automatic preaction sprinkler systems serving safety-related equipment have an arrangement (normally closed deluge valve, air supervised piping and closed sprinkler heads) to preclude a single fire protection system failure from causing a malfunction of safety-related equipment.

9A.4.1.2.4 The automatic CO₂ systems serving safety related areas have seismically qualified components to avoid inadvertent discharge of medium during a seismic event. The worst inadvertent

operation of a single CO₂ system will affect only a single channel of equipment, i.e. 1 diesel room or 1 diesel fuel oil storage tank room. Inadvertent operation of the control equipment mezzanine CO₂ system will not affect the electrical cable or shutdown capability from the MCR or RSP.

9A.4.1.3 All the Class 1E raceways within the fire area boundaries are highlighted by color on raceway drawings. Channels A, B, C and D are colored green, purple, blue and orange, respectively. Computer printouts of the cable associated with each 1E raceway, for each fire zone within a fire area are made.

9A.4.1.4 With the above, a detailed analysis is made of the fire area. A check is made to make sure that enough equipment in Table 9A-2 is available for safe shutdown. The majority and minority cable Division for each area is identified. The Division associated with the majority cable is assumed to be lost due to the fire. The minority division is assumed to be used for shutdown.

The equipment associated with the minority cables in that area are then analyzed for spurious operation, misoperation or failure to operate, whichever is worse, and its subsequent effects on safe shutdown.

9A.4.1.5 The possibility of fire spreading from one area to another is analyzed. If the walls, floor, ceiling, doors or penetrations are rated less than three hour barriers, then the fire's influence is assumed to extend into the adjacent area. Cable and equipment within this adjacent zone of influence is analyzed for spurious operation and the effects on safe shutdown. The results of this analysis is presented in Section 9A.6.

9A.4.1.5.1 A wall, ceiling or floor is considered fire rated if it is designed to maintain its integrity when exposed to a standard fire test. Each element of a barrier including doors, penetrations and hatches that penetrate the barrier, as well as

structural elements supporting it, are qualified to meet the fire resistance rating of the barrier by standard fire tests as identified in BTP CMEB 9.5-1, ASTM E-119, and ASTM E-814, as appropriate. Deviations are identified in Section 9.5.1 and 9A.6.

9A.4.1.6 The effects on safe shutdown for a fire area are arrived at by reviewing the effects of fire on safe shutdown equipment and cable in that fire area. The shutdown method used in the analysis for each fire area is stated in Section 9A.6. If any deviations from the stated method, fixes or manual actions are assumed for cold shutdown they are stated there. The effects of fire on safe shutdown and combustible loading in each fire area are written up in the Fire Hazard Analysis Tabulation and Summary Tables starting at Table 9A-6. For fire areas made up of more than one room, the analysis assumed the equipment and cable for all rooms were affected by the fire, i.e., the walls within the fire area boundary were considered not to exist. Fire Hazard Analysis Tabulations are provided for each room within the fire area. The parameters listed in 9A.4.2 are included on these sheets.

9A.4.1.7 The Fire Hazard Analysis summary Table 9A-1 lists by room, the description of the room, the safe shutdown equipment and cable. In addition, the amount of combustibles, fire load in Btu/ft², fire detection and suppression features, are listed.

9A.4.1.8 Lube oil is stored in fireproof cabinets in selected locations throughout the plant. Each location contains no more than three cabinets, each of which contains no more than 120 gallons, in accordance with NFPA 30, Section 4.3.1. The cabinets are administratively controlled via locked cages.

9A.4.2 FIRE HAZARD ANALYSIS TABULATION SHEET PARAMETERS

The Fire Hazard Analysis tabulation sheets contain the following information:

9A.4.2.a. Fire area number, room number, room name, building and floor elevation.

9A.4.2.b. Safe shutdown equipment and components in each room including:

1. Cable trays and conduit
2. Panels
3. Mechanical components such as pumps and fans
4. Instrumentation racks and controls.

The mechanical safe shutdown division is listed for each of the above equipment and components. Non-safe shutdown cable or equipment are sometimes listed for information only.

9A.4.2.c. Combustible materials present. Materials are listed as follows:

1. Cable insulation in pounds
2. Lube oil in gallons
3. Other. This category includes combustibles such as battery cases, paper, etc
4. Transient. This category allows for the combustibles that may be temporarily stationed in a fire zone due to maintenance. See Section 9A.1.8.

9A.4.2.d. Room area, ft²

9A.4.2.e. Equivalent fire severity given in minutes of burn. Refer to Section 9A.1.3.

9A.4.2.f. Fire detection types

9A.4.2.g. Fire suppression types

9A.4.2.h. Emergency lights

9A.4.2.i. Construction. All walls, floors and ceilings enclosing a room are listed to show fire rating. In addition, the fire rating of doors, hatches, and other penetrations are listed. Refer to Section 9A.4.1.5.1 for explanation of rated or unrated walls, ceiling or floor.

9A.4.2.j. Effects of fire on safe shutdown. The effects of fire on safe shutdown for each fire area are stated per Section 9A.4.1.6. For areas with more than one room, the effects of fire on safe shutdown are stated on the Fire Hazard Analysis Tabulation Summary for that fire area. For individual rooms within a larger fire area, the effects of fire on safe shutdown is stated on the Fire Hazard Analysis Tabulation for that room and is for the equipment within that room only. This room effect would be a subset of the effects of fire for the entire fire area. Safe shutdown methods assumed for the analysis are listed below. Other combinations of equipment can be used for safe shutdown and if used are stated explicitly in the analysis.

9A.5 SAFE SHUTDOWN METHODS

Various plant systems, both safety-related, and non-safety-related, could be used in a wide variety of combinations to achieve plant shutdown; however, it is necessary to define a limited number of shutdown methods that involve specific combinations of systems and components, in order to facilitate a detailed analysis of the potential effects of postulated fires on the shutdown methods.

Two of the shutdown methods (designated as methods I and II) are operable using controls that are located primarily in the control

room. The third shutdown method involves shutdown from outside the control room, using controls that are located primarily on the remote shutdown panel.

Hope Creek mechanical design consists of two divisions of mechanical equipment (Division I and II) for use during Design Basis Accident or other postulated accident. These two mechanical divisions are supported by four electrically independent channels (A, B, C, and D). The electrical channels A and C supply Division I, and B and D, supply Division II.

Because of the assumption that offsite power may be unavailable for as long as 72 hours after a fire, the components used in the shutdown methods have been selected so that the shutdown methods are operable using onsite power only. The divisions of Class 1E electric power that are needed in order to make shutdown methods I and II operable are as follows:

1. Shutdown Method I - Division I electrical channels A and C
(both ac and dc)
2. Shutdown Method II - Division II electrical channels B and D
(both ac and dc)

Although most of the components controlled from the remote shutdown panel are powered from Division II, several components are powered from Division I. However, only the Class 1E electric power for Division II and some Division I instrumentation are needed in order to shut the plant down using the remote shutdown panel.

9A.5.1 Shutdown Method I

After closure of the Main Steam Isolation Valves (MSIVs) the HPCI system is used to supply makeup water to the reactor vessel. The condensate storage tank is the preferred source of makeup and will be used if available. Transfer from the CST to the torus suction

is assumed to be done manually. The operation of the HPCI system also removes energy from the reactor in the form of steam used to drive the HPCI turbine. During the period in which steam is generated at a rate greater than the consumption of the HPCI system, steam is relieved to the suppression pool by the automatic actuation of the SRVs, which open when reactor pressure reaches the valve setpoint. Heat is removed from the suppression pool by operating loop A of the RHR system in the suppression pool cooling mode. In this mode, water from the suppression pool is circulated through an RHR heat exchanger and then returned to the suppression pool. To initiate operation of the shutdown cooling mode of the RHR system, it is necessary to depressurize the reactor below a nominal pressure of 100 psig. Normally, the SRVs would be used to decrease reactor pressure to the point where RHR shutdown cooling can be used. Since all the SRVs are powered from Division II dc power, then, in the unlikely event that fire induced damage affects all 14 Safety Relief Valves, repair actions are implemented as part of the cold shutdown strategy to repair and provide the capability to manually operate SRVs and ensure the ability to depressurize the plant to the point for shutdown cooling operation to reduce reactor pressure. When the reactor has been depressurized below the RHR shutdown cooling mode setpoint, the RHR system is switched from the suppression pool cooling mode to the shutdown cooling mode. Heat is removed from the RHR heat exchanger by the Safety Auxiliary Cooling System (SACS), which in turn dissipates heat into the Station Service Water System (SSWS). The shutdown cooling mode of RHR will maintain the reactor in a cold shutdown condition.

As an alternative, after the reactor pressure has decreased to a nominal 295 psig, the makeup water can be supplied from the suppression pool by operating loop C of the RHR system in the LPCI mode or loop A of the Core Spray System. Depressurization can continue to be through the HPCI turbine or the SRVs if available. Heat is removed from the suppression pool by operating loop A of the RHR suppression pool cooling mode. When the reactor has been depressurized to below a nominal 100 psig, RHR loop A is switched to the shutdown cooling mode. Shutdown cooling suction valve BC-HV-F008 is powered from Division II. In the event that control of that valve is affected by the fire, then the valve motor operator can be disabled and the valve opened manually.

If offsite power is lost, RHR shutdown cooling is isolated from the reactor vessel and the above procedure is modified as follows: When the reactor has been depressurized to below a nominal 100 psig, the alternate shutdown cooling mode is used in lieu of RHR A shutdown cooling. The alternate shutdown cooling mode, described in Section 15.2.9, uses Core Spray or the LPCI C mode of RHR to fill up the reactor until the steam lines are flooded. One or more SRVs are opened so water flows out the relief valve and back to the suppression pool. RHR A suppression pool cooling mode cools the suppression pool as before.

9A.5.2 Shutdown Method II

After closure of the main steam isolation valves (MSIVs), the RCIC system is used to supply makeup water to the reactor vessel. The condensate storage tank is the preferred source of makeup and will be used if available. Transfer from the CST to the torus is assumed to be done manually. The operation of the RCIC system also removes energy from the reactor in the form of steam used to drive the RCIC turbine. During the period in which steam is generated at a rate greater than the consumption of the RCIC system, steam is relieved to the suppression pool by the automatic actuation of the main steam line safety/relief valves, which open when reactor pressure reaches the valve setpoint. Heat is removed from the suppression pool by operating loop B of the RHR system in the suppression pool cooling mode. In this mode, water from the suppression pool is circulated through the B RHR heat exchanger and then returned to the suppression pool. To initiate operation of the shutdown cooling mode of the RHR system, it is necessary to depressurize the reactor below a nominal pressure of 100 psig. This is accomplished by using the main steam safety/relief valves (SRVs) to discharge steam to the suppression pool. When the reactor has been depressurized below 100 psig, operation of the RCIC system is terminated and the RHR system is switched from the suppression pool cooling mode to the shutdown cooling mode. In both of these modes, heat is removed from the RHR heat exchanger by the Safety Auxiliaries Cooling System (SACS) which in turn dissipates heat into the Station Service Water System (SSWS). The shutdown cooling mode of RHR will maintain the reactor in a cold shutdown condition.

Shutdown cooling suction valve BC-HV-F009 is powered from Division I. In the event that control of this valve is affected by the fire or if shutdown cooling is isolated due to a loss of offsite power, then an alternate shutdown path can be used. The alternate shutdown cooling mode in lieu of RHR B shutdown cooling mode is as follows: Core spray or LPCI D mode of RHR is used to fill up the reactor until the steam lines are flooded. With one or more SRVs open, water flows out the relief valve and back to

the suppression pool. RHR B suppression pool cooling mode cools the suppression pool as before.

9A.5.3 Remote Shutdown Method

The remote shutdown method can be found in the FSAR Appendix 9A under response to NRC Generic Letter 81-12, Item 1.e. In addition, depressurization by use of 3 SRVs and use of the B LPCI is available from the RSP.

9A.5.4 Spurious Signal Analysis Results

A complete review of spurious signals per section 9A.1.5.f was performed. The circuits requiring separation were identified and fixes, i.e., cable rerouting, fire walls, etc., have been included in the plant design. No cable tray fire wrapping is required. No wire cutting or fuse pulling operations are required.

The alternate shutdown mode was used in the reactor building and electrical access areas due to the logic and electrical channels associated with the RHR shutdown cooling valves. These valves are BC-HV-F008, BC-HV-F009, BC-HV-F015A and BC-HV-F015B. In addition, due to the large number of trips associated with the RCIC and HPCI, manual depressurization and low pressure injection systems were relied on. These shutdown methods have been included in the plant operating procedures. However, it may be desirable to manually establish RHR shutdown cooling or one of the high pressure injection systems to avoid the normally less desirable alternate shutdown path and/or fast depressurization to use LPCI or CS.

High-low pressure valve interface problems were identified as discussed in the response to Generic Letter 81-12, Item 2.

Hope Creek is a single spurious signal/actuation plant, in that fire-induced hot shorts, open circuits, or shorts to ground are taken on-at-a-time, not simultaneously, and therefore their effects are analyzed individually, not in a combined manner. An Engineering Evaluation was performed to document the plant licensing basis with respect to fire induced spurious operations. Consistent with the guidance provided in RG 1.189 Revision 2 and NEI 00-01, Revision 2, Hope Creek evaluated the impact of Multiple Spurious Operation (MSO) on the plant's post-fire Safe Shutdown capability.

9A.5.5 Cold Shutdown Capabilities

When either of the safe shutdown methods is utilized (Method I, II, or Remote Shutdown), plant transition to cold shutdown would require the ability to depressurize in order to initiate Shutdown Cooling Mode of RHR or alternate shutdown cooling. Depressurization is achieved via operation of the SRVs (Method II) or through steam consumption of HPCI System turbine exhaust (Method I).

In accordance with the circuit analysis and cable routing data, the ability to depressurize and transition to cold shutdown may be impacted. The following provides a summary of the issues and an assessment of the plant safe shutdown capability:

- A. Power and control circuitry for all SRVs are from Channel B (Div II) and ADS valves are from Channel B and D (Div II). Suppression Pool Level Indicators are powered from Channel A and C (Div I). In plant areas where shutdown Method II is credited, there is a potential for fire induced failure of Channels A and C which could affect suppression pool level indication and the Operator's ability to actuate SRVs to discharge steam to the suppression pool.

There are no postulated fire induced failures that would cause flow diversions resulting in significant changes in suppression pool water level. Since suppression pool water level is maintained by Technical Specifications, it is assumed that at the time of the fire the water level is within the band prescribed by the EOPs. Additional options that could be used to provide reasonable assurance that suppression pool level was within the required band include:

- 1) Obtain suppression pool level indication from the Remote Shutdown Panel recorder BJ-LR-4805-2,
- 2) Indirect indications such as Condensate Storage Tank level and ECCS room flooded alarms,
- 3) If spuriously closed, operators would manually open either valves BJ-HV-4803 and BJ-HV-4804, or BJ-HV-4865 and BJ-HV-4866, if required to allow process flow to suppression pool level instruments,
- 4) Dispatch an operator to any Core Spray or RHR pump room to obtain a reading from the local pump suction pressure indication (BC-PI-R002A-D for RHR, BE-PI-R001A-D for Core Spray) as prescribed by the EOPs.

B. When Method I is utilized, HPCI system is used initially for hot shutdown.

HPCI steam consumption will result in reducing reactor pressure. However, HPCI system trips are set at about 100 psig which is above the operating pressure for RHR shutdown cooling.

In order to ensure the ability to depressurize the plant to the point for Shutdown Cooling mode of RHR operation, when applicable, post fire Procedures include steps for implementation of emergency repair actions for Remote Manual Operation of ADS/SRV's.

9A.6 FIRE AREAS AND EXEMPTION REQUESTS

Fire areas for the purposes of comparing HCGS to 10CFR50 Appendix R requirements are defined below. Deviations are noted from the definition of fire area given in Generic Letters 83-33 and 85-01. Since HCGS was requested to identify and justify any deviations from Appendix R, where HCGS fire protection program deviates an exemption is requested below. The exemption request is based on specific fire hazard analysis and effects on safe shutdown discussed with each deviation. A cross-reference between fire area and room numbers is given in Tables 9A-4 and 9A-5. The fire area boundaries are shown on Plant Drawings M-5119 through M-5124. Additional information for specific fire zones (architectural rooms) within the fire area and Fire Area Summary can be found in the Fire Hazard Analysis Tabulation Sheets, Tables 9A-6 through 9A-102. Also refer to the Fire Protection and Detection Plan drawings for different plant elevations, Plant Drawings M-5001 through M-5012.

The plant is broken down into the following general fire areas, which are further defined in the sections indicated:

TB1. Turbine Building, 9A.6.1

AB3. Auxiliary Building, Radwaste Area, 9A.6.2

AB2. Electrical Access Area Division II, 9A.6.3

AB1. Electrical Access Area Division I, 9A.6.4

CD1- Auxiliary Building Control and Diesel Areas, 9A.6.5 CD85

RB7. Reactor Building Drywell, 9A.6.6

RB5. Reactor Building elevation 132 and above, 9A.6.7

RB1. Reactor Building Division I, 9A.6.8

- RB2. Reactor Building Division II, 9A.6.9
- RB3. Reactor Building Torus room, 9A.6.10
- RB4. Reactor Building Main Steam Tunnel, 9A.6.11
- RB6. Technical Support Center, 9A.6.12
- AB4. Remote Shutdown Panel Room, 9A.6.13
- IS1. Service Water Intake Division I, 9A.6.14
- IS2. Service Water Intake Division II, 9A.6.15
- IS3. Traveling Screen Motor Room, 9A.6.16
- Miscellaneous Areas, 9A.6.17

9A.6.1 TURBINE BUILDING, FIRE AREA TB1

The entire Turbine Building from Elevation 54 ft-0 in. to the roof, including the Administrative Facility and the turbine side of the steam tunnel, is one fire area. The architectural room numbers for rooms in this fire area are 1XXX, 1XX, 2XX and unoccupied space. There is no safe shutdown equipment or cable in this fire area. The fire area TB1 is defined by a rated wall adjacent to the Auxiliary Building and 2-hour and unrated exterior walls elsewhere. The stairwells are part of this fire area.

9A.6.2 RADWASTE AREA, FIRE AREA AB3

The 3,000 series architectural rooms make up this fire area plus room 5619 but excluding those 3,000 series rooms in fire areas: AB2, Section 9A.6.3; AB4, Section 9A.6.13; and RB6, Section 9A.6.12. This is primarily the radwaste portion of the Auxiliary Building from Elevation 54 to the roof. There is safe shutdown cable in rooms 3605, 3606, 5619, 3442, 3444, and 3414 of this fire

area. This area is defined by fire barriers except as follows:

- a. The boundary walls between the fire area RB2 and this fire area varies from unrated, 1 hour and 2 hour ratings.
- b. These walls do not separate redundant safe shutdown equipment.
- c. Exterior walls or ceiling are not rated.

9A.6.2.1 Exemption Requests

- a. This fire area contains both divisions of cable in conduit. Channel C at Elevation 153 and channel B & D at Elevation 124. The slab at elevation 153/155 separating these two areas is 2-hour rated. The slab at elevation 137 is a sealed 2-hour fire barrier for insurance purposes. There is an early warning smoke detection system at Elevations 124, 137, and 153/155'-3". An Automatic Sprinkler System is installed at Elevation 137. Therefore, we are in compliance with III.G.2.C and no exemption was requested.
- b. The rated floor slab supporting room 5619 is not supported by fireproofed beams due to inaccessibility and interferences. Safe shutdown cable from the Division I main control room HVAC system penetrates through this slab to the Division I fire area AB1 below (room 5501). Since this slab does not separate redundant safe shutdown cabling no exemption was requested.

9A.6.2.2 Shutdown Method

Shutdown Method II can be used for a fire at Elevation 153. Shutdown Method I can be used for a fire at Elevation 124. Either Shutdown Method I or II can be used at any other elevation.

9A.6.3 ELECTRICAL ACCESS AREA DIVISION II, FIRE AREA AB2

Several corridors between the Auxiliary Building and Reactor Building are used as cable access. The corridors carrying the Division II electrical cable are lumped into fire area AB2. This fire area is made up of the following architectural rooms covering several floors. Refer to Plant Drawings M-5001 through M-5005.

Elevation 54; 3110, 3110-1, and 5106

Elevation 77; 3204 and 5207

Elevation 102; 3301, 3301A, 3302, 3303, 3304, 3314, 3342, and 5301

Elevation 124; 3425 and 5401

Elevation 130; 5423

Partial coverage by automatic suppression systems are provided in this area over cable concentrations in 3204, 5207, 3425, and 5401. This area is defined by fire barriers except as follows:

- a. The boundary walls between fire area AB3 and this fire area range from unrated, 1-hour, and 2-hour fire barriers. These walls do not separate safe shutdown equipment.
- b. The ceiling above room 5423 is an unrated exterior ceiling and does not separate safe shutdown equipment.
- c. The south wall of room 5423 is an unrated exterior wall and does not separate safe shutdown equipment.
- d. The Reactor Building personnel access door and equipment access doors between 3314 and 4301 are pressure tight doors not qualified as 3-hour fire barriers by UL. This wall separates redundant electrical divisions.

- e. Two electrical bus ducts penetrate the 3-hour fire barrier between 5301 and 5339 without a fire stop. This wall separates redundant safe shutdown cable.
- f. The west wall of 5106 is an unrated exterior wall below grade.
- g. The stairwells are separate fire areas surrounded by 2-hour fire barriers.
- h. The floor slab supporting rooms 5401 and 5423 between columns Q and U is rated but the structural steel supporting the slab is not fireproofed.
- i. Two electrical bus ducts penetrate the two hour rated east wall between 5301 and 3310/3311 without a fire stop. This wall does not separate redundant safe shutdown cable.

9A.6.3.1 Exemption Requests

- a. An exemption from Appendix R, Section III.G.2 was requested for the non-UL rated pressure tight doors between 3314 and 4301. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a was granted for the use of non-UL rated pressure tight doors and is documented in Hope Creek's SER pages 9-35 and 9-36. The doors involved are a single pressure tight personnel access door, which is in series with a second pressure tight door, and the adjacent double wide pressure tight doors used for equipment access. They are located at approximately columns Md and 22 on Plant Drawing M-5003.

These doors and other doors like them at HCGS have been fabricated in accordance with Underwriters Laboratories (UL) approved procedures for 3-hour-fire-rated doors. Certificates from the manufacturer are on file that verify the construction of the doors. They are not labeled because modifications necessary to satisfy pressure loadings are not incorporated into UL

procedures. Pressure tight doors are required for overriding safety considerations to assure proper building venting. Photoelectric detectors, a water hose and an automatic suppression system are provided in the Reactor Building. Ionization and photoelectric detectors and a water hose are provided in the electrical corridor.

Figure 9A-11 shows the outline of the pressure tight door used on HCGS. It is similar to doors accepted by the NRC staff as providing an equivalent level of fire protection to labeled fire doors.

The equivalent fire loading for the radwaste building corridor is approximately 38 minutes and for the reactor building corridor is 42 minutes. Fire area RB1, room 4301 contains an automatic sprinkler system in the area adjacent to the above pressure tight doors.

- b. An exemption from Appendix R, Section III.G.2, was requested for the two electrical bus ducts penetrating the three hour fire barrier between fire area AB1, room 5339 and this fire area, room 5301. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.b was granted for two electrical bus ducts penetrating 3 hour fire barriers and is documented in Hope Creek's SSER-5 page 9-7. Room 5339 contains an automatic sprinkler system and therefore will prevent the spread of fire between the fire areas without the need for a fire stop inside the bus duct. Four nozzles of the suppression system are aimed directly at the ducts near the penetrations.
- c. The offsite bus ducts penetrate the 2 hour east wall between 5301 and fire area AB3, rooms 3310/3311 without a fire seal inside the bus duct qualified as a 2-hour fire barrier. The 2-hour fire barrier does not separate redundant safe shutdown divisions since the same channel of cable exists on both sides of the wall. Therefore no exemption was requested.

- d. This fire area contains partial coverage by automatic water suppression systems in areas of high cable concentrations. Since this area does not utilize Appendix R, Section III.G.2.b, c or III.G.3 to justify safe shutdown, no exemption for partial coverage was requested.

9A.6.3.2 Shutdown Method

Shutdown Method I will be used for a fire in fire area AB2. Since control and power cables associated with shutdown cooling valves BC-HV-F008 (suction) and BC-HV-F015A (return) are routed in this fire area, the alternate shutdown method can be used or the affected valves can be opened manually to establish shutdown cooling

9A.6.4 ELECTRICAL ACCESS AREA DIVISION I, FIRE AREA AB1

The following architecture rooms combine to form one fire area covering several floors. Refer to Plant Drawings M-5002 through M-5005.

Elevation 77, electrical access 5237

Elevation 102, electrical access 5339,

Elevation 124, electrical vault in 5401 connecting 5339 below to 5501 above.

Elevation 130, electrical access and diesel intake 5450 (west of 5423)

Elevation 137, corridor 5501.

This fire area contains Division I safe shutdown cable and is completely defined by fire barriers as defined in NRC Generic Letter 83-33 except as noted below.

- a. Deleted.
- b. The ceiling above 5450 is an unrated exterior ceiling and does not separate safe shutdown equipment.
- c. The south wall of zone 5450 is an unrated exterior wall and does not separate safe shutdown equipment.
- d. Two electrical bus ducts penetrate the 3-hour fire barrier between 5339 and fire area AB2, room 5301, without a fire stop. This wall separates redundant safe shutdown cable.
- e. The west wall of 5450 is an unrated exterior wall and does not separate safe shutdown equipment.
- f. The west wall of 5237 is an unrated exterior wall below grade.
- g. The stairwells are separate fire areas surrounded by 2-hour fire barriers.
- h. The structural steel above room 5339 and below 5401 and 5423 is a 3-hour fire barrier but the structural steel is not fireproofed.
- i. The structural steel above 5501 and below 5619 (fire area AB3) is not fireproofed.
- j. The ceiling above 5501 is unrated. Most of it is an exterior ceiling except the east end which separates 5501 from 5619 (fire area AB3) and is rated 2 hours.

9A.6.4.1 Exemption Requests

- a. An exemption from Appendix R, Section III.G.2 was requested in 9A.6.3.1.b for the two electrical bus ducts penetrating the 3-hour fire barrier between zones 5339 and 5301. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.b was granted for two electrical bus ducts penetrating 3 hour fire barriers and is documented in Hope Creek's SSER-5 page 9-7.
- b. This fire area contains partial coverage by automatic water suppression systems in areas of high cable concentrations. Since Appendix R, Section III.G.2.b, c or III.G.3 are not used to justify safe shutdown in this fire area, no exemption for partial coverage was requested.
- c. The east end of 5501 separates this fire area from fire area AB3, room 5619. This portion of the ceiling is a two hour fire barrier, however, since it does not separate redundant shutdown divisions, fireproofing has not been provided on the support beams. Since this does not separate redundant shutdown divisions it is not required to be rated and no exemption was requested.

9A.6.4.2 Shutdown Method

Shutdown Method II can be used for shutdown following a fire in this fire area.

If RHR shutdown cooling valve BC-HV-F009 is affected, then the alternate shutdown path can be used.

9A.6.5 AUXILIARY BUILDING, CONTROL AND DIESEL FIRE AREAS, FIRE AREAS CD1 THROUGH CD85

Table 9A-5 lists the rooms or group of rooms which make up each fire area in the control and diesel area. This table also lists the shutdown method used in each fire area. Each fire area is defined by rated barriers as defined in NRC Generic Letter 83-33, except for corridors and barriers which border the building exterior. All stairwells and elevator shafts are fire areas from top to bottom.

9A.6.5.1 Exemption Requests

- a. An exemption from the Appendix R, Section III.G.3, requirement for a fixed fire suppression system was requested for the control equipment room (CER), fire area CD26, room 5302.

The NRC acknowledged that PSEG requested approval for an exemption from Appendix R, Section III.G.3 fixed suppression system requirements to the extent that a fixed suppression system is required in an area for which alternate shutdown capability is provided. However, the NRC stated that because the staff is evaluating the Hope Creek Fire Protection Program to the guidelines in BTP CMEB 9.5-1, Revision 2, and because no such requirement exists in this guideline for fixed suppression, therefore no deviation exists or needs to be granted. The NRC goes further to state "Therefore, those fire areas provided with an alternate shutdown capability that is physically and electrically independent of the fire area are in conformance with the staff's guidelines" and is documented in Hope Creek's SSER-5, page 9-11.

Auxiliary Building control equipment room 5302 contains both divisions of control panels and cable. Figure 9A-19 shows the equipment layout of this room. Alternative shutdown capability via the remote shutdown panel is provided for a fire in this area. The RSP controls and local equipment operating areas can achieve and maintain hot and subsequent cold shutdown independently from the fire or effects of the fire in 5302.

Fire area CD26 could contain a maximum of 31,368 lb of cable insulation for a total burning time of 21 minutes. There are no power cables in this fire area. The cables are fire retardant qualified per IEEE-383. Area 5302, in combination with corridor 5303, defines a combined fire area surrounded by 3-hour fire barriers (walls, ceiling, floor, openings, etc). Both ionization and photoelectric detection are provided for these areas. The CER is accessible for manual firefighting; the cable trays are above the rows of panels. Suppression can be by water hose and/or portable

extinguishers. Addition of a fixed suppression system covering the cable tray areas can be detrimental to the solid state logic and may compound a safe shutdown from the main control room (requiring use of the RSP) and therefore result in a decrease in plant safety.

The alternate shutdown capability provides assurance that one train of equipment necessary to achieve hot and subsequent cold shutdown is free of fire damage. Since the fire load is low and accessible for manual suppression, the addition of a fixed fire suppression system required by III.G.3 will not enhance fire protection safety above that provided by the existing configuration.

- b. An exemption from Appendix R, Section III.G.3 requirement for a fixed suppression system was requested for the main control room, fire area CD46. This fire area encompasses rooms 5509, 5510 and 5511, the watch engineers room, main control room and ready room, respectively.

The NRC acknowledged that PSEG requested approval for an exemption from Appendix R, Section III.G.3 fixed suppression system requirements to the extent that a fixed suppression system is required in an area for which alternate shutdown capability is provided. However, the NRC stated that because the staff is evaluating the Hope Creek Fire Protection Program to the guidelines in BTP CMEB 9.5-1, Revision 2, and because no such requirement exists in this guideline for fixed suppression, therefore no deviation exists or needs to be granted. The NRC goes further to state "Therefore, those fire areas provided with an alternate shutdown capability that is physically and electrically independent of the fire area are in conformance with the staff's guidelines" and is documented in Hope Creek's SSER-5, page 9-11.

Fire area CD46, room 5510, contains both safe shutdown divisions of panels, control cable, and instrumentation cable. This area is continuously staffed. The safe shutdown cable is not exposed, but is contained below the MCR panels. Transient combustibles are administratively controlled. Alternate shutdown capabilities are provided in the Remote Shutdown Panel. The RSP controls can achieve and maintain hot and subsequent cold shutdown independently from a postulated fire or effects of a fire in the MCR. Fire area CD46 is defined by 1-hour and 3-hour fire barrier walls and 3-hour fire barrier floor and ceiling. The in-situ combustibles are limited to paper, carpeting, rubber hoses and similar transient materials. The equivalent burn time is less than 6.34 minutes. This fire area has ionization detection. Detectors are also located in the main console and vertical board 10C650, 10C651,

respectively. Suppression can be handled by portable extinguishers and/or water hose. In the unlikely event a fire occurs in the control console pit area beneath the control console which can not be handled by portable extinguishers and/or water hose, a fixed pipe, manually actuated, halon suppression system is installed. The bottles are mounted in the Computer Room and piped through the Control Room wall. High pressure hoses are used to connect the cylinder piping with the piping within the console. The HVAC is manually turned off during halon use.

The alternate shutdown capability provides assurance that one train of equipment necessary to achieve hot and subsequent cold shutdown is free of fire damage. This is not a large quantity of combustibles and the area is continually staffed. Therefore, the addition of a fixed fire suppression system required by III.G.3 will not enhance fire protection safety above that provided by the existing configuration.

- c. An exemption from the requirements of Appendix R, Section III.G.3 for a fixed suppression was requested for the 1E panel room, fire area CD61. This fire area is at Elevation 163 ft-6 in. of the Auxiliary Building Diesel area and encompasses rooms 5605 and 5631.

The NRC acknowledged that PSEG requested approval for an exemption from Appendix R, Section III.G.3 fixed suppression system requirements to the extent that a fixed suppression system is required in an area for which alternate shutdown capability is provided. However, the NRC stated that because the staff is evaluating the Hope Creek Fire Protection Program to the guidelines in BTP CMEB 9.5-1, Revision 2, and because no such requirement exists in this guideline for fixed suppression, therefore no deviation exists or needs to be granted. The NRC goes further to state "Therefore, those fire areas provided with an alternate shutdown capability that is physically and electrically independent of the fire area are in conformance with the staff's guidelines" and is documented in Hope Creek's SSER-5, page 9-11.

Fire Area CD61 contains logic cabinets for the main control room and the radiation monitoring system computer. Figure 9A-13 shows the equipment layout of this room. Both divisions of redundant logic and instrumentation are in panels therein. The panels have less than 20 feet of separation between redundant divisions. All cable are bottom entry. The in situ and transient combustibles in this area consist of the RMS computer and its peripheral equipment, paper, and a small amount of cable. The computer, peripherals, and its

cables are separated from the 1E panels by a gypsum wallboard partition for HVAC and dust control considerations. The total combustibles is less than 2 minutes for the entire fire area. The RMS computer is non-1E and loss of the computer will not effect safe shutdown. The cable is bottom entry to the computer and peripherals. The cable is completely surrounded and separated from the remainder of CD61 by the wallboard partition. Transient combustibles are administratively controlled.

Alternate shutdown capabilities are provided in the RSP. The RSP controls can achieve and maintain hot and subsequent cold shutdown independently from a postulated fire or effects of a fire in fire area 5605. This fire area is defined by 3-hour fire barrier walls, floor and ceiling, and an unrated exterior wall. Both ionization and photo-electric type detection cover this area. Suppression can be handled by portable extinguishers and/or water hose. Addition of a fixed suppression system covering the panels can be detrimental to the solid state logic and may compound a safe shutdown from the main control room (requiring use of the RSP) and therefore result in a decrease in plant safety.

The alternate shutdown capability provides assurance that one train of equipment necessary to achieve hot and subsequent cold shutdown is free of fire damage. There are negligible combustibles in this area. Therefore, the addition of a fixed fire suppression system required by III.G.3 will not enhance fire protection safety above that provided by the existing configuration.

- d. An exemption from the requirements of Appendix R, Section III.G.3 for a fixed suppression system or Section III.G.2 for separation plus suppression was requested for the HVAC equipment room and corridors, fire area CD60. This area, room 5620, 5611, 5604, 5702 and 5706 is at Elevation 163 ft-6 in. and 178 ft of the Auxiliary Building diesel

The NRC acknowledged that PSEG requested approval for an exemption from Appendix R, Section III.G.3 fixed suppression system requirements to the extent that a fixed suppression system is required in an area for which alternate shutdown capability is provided. However, the NRC stated that because the staff is evaluating the Hope Creek Fire Protection Program to the guidelines in BTP CMEB 9.5-1, Revision 2, and because no such requirement exists in this guideline for fixed suppression, therefore no deviation exists or needs to be granted. The NRC goes further to state "Therefore, those fire areas provided with an alternate shutdown capability that is physically and electrically independent of the fire area are in conformance with the staff's guidelines" and is documented in Hope Creek's SSER-5, page 9-11.

area. This fire area is defined by 3-hour fire barrier walls, floor and ceiling and an unrated exterior wall in 5620 and 3-hour walls and unrated floor and ceiling in the corridors.

This area contains both divisions of air handling units for the equipment on Elevation 163 ft-6 in. and their associated control panels (AVH408, BVH408, AC486 and BC486). The corridors also include cable for the chiller pumps which cool these air handling units. The only 1E equipment required for safe shutdown located on Elevation 163 ft-6 in. are the switchgear room unit coolers (rooms 5606 and 5629) and the 1E panels in room 5605. The switchgear room unit coolers do not rely on AVH408 or BVH408 for cooling. Loss of the 1E panel room is backed up by use of the remote shutdown panel. See deviation 9A.6.5.1.c.

The air handling units are approximately 14 feet apart and are metal construction. The in situ combustibles are contained in two Division II cable trays. These could contain a maximum of 2257 lbs of insulation or less than 3 minutes of equivalent burn time. The corridors could contain a maximum of 12,240 lbs. of insulation or less than 25 minutes of equivalent burn time. Both ionization and photoelectric detection is used in this area and suppression can be by water hose or portable extinguishers. The congestion is light and the addition of a fixed suppression system will not enhance fire fighting capabilities.

If loss of both air handling units is assumed due to a transient fire in this area, it will not have an immediate effect on safe shutdown logic or instrumentation in the 1E panel room. If the 1E panel logic is eventually affected by high ambient temperatures, the unaffected instrumentation and/or controls on the RSP can be utilized. Temperature indication is provided in the 1E panel room in order to monitor room ambient temperature. Temporary fans will be used in an attempt to maintain room ambient temperatures below EQ levels.

The RSP provides assurance that one train of equipment necessary to achieve hot and subsequent cold shutdown is free of fire damage. There are very few combustibles in this area. Therefore, separation of the equipment or addition of a fixed fire suppression system will not enhance fire protection safety above that provided by the existing configuration.

An unrated floor of Rooms 5604 and 5611 separates Fire Area CD60 from CD10. In addition, there is an equipment hatch in the West side of the corridor that extends from the floor elevation 102'-0" to 171'-0" between these two fire areas. Fire area CD60 contains Division I and II safe shutdown cables. Rooms 5611 (Elevation 163'-0", CD60) and 5537 (Elevation 146'-0", CD10 directly below the hatch) do not contain any safe shutdown equipment or cables. The only safe shutdown cables in fire area CD10 are located on elevation 77' (Room 5215). The area adjacent to 5611 (Room 5604) contains safe shutdown cables that are routed in conduits and are more than 15 feet from the hatch. The corridors within CD10 and 60 are large with low combustible loads. The potential for a fire that would propagate and challenge the unrated floors barrier is very low and while not rated, the barrier does provide a level of fire resistance. This configuration was reviewed and accepted by the NRC as documented in SSER 5 Page 9-11.

- e. An exemption from the requirements of Appendix R, Section III.G.2 for separation plus suppression and Section III.G.3 for fixed suppression was requested for the diesel area HVAC equipment room, fire area CD84, elevation 178 ft-0 in. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the configuration and protection of systems in the diesel HVAC equipment room and is documented in Hope Creek's SSER-5 page 9-11. This fire area encompasses rooms 5703, 5704, 5105 and 5617. This fire area is defined by a 3-hour fire barrier wall, floor and ceiling and unrated exterior walls. Refer to Plant Drawings M-5001, M-5006 and M-5007.

The Air Handling Units AVH407 and BVH407 are enclosed in metal casing, are connected by both HVAC supply and return duct, and are physically separated by 6 ft. Loss of these VH407 units would cause a loss of air conditioning to the Control Room HVAC rooms 5602 and 5630, electrical access area 5501, control equipment mezz. 5403, control equipment room 5302, cable spread room 5202, battery and equipment rooms 5105, 5128, 5102, 5103, 5104, 5126, and corridors 5525, 5404, 5303.

The Diesel Generator HVAC panels provide control and instrumentation for the D-G air handling units at Elevation 77 ft of the diesel area and the switchgear room coolers. There are 20 ft of separation between the divisionalized DG HVAC panels B&DC483 and A&CC483 and their associated conduit with negligible intervening combustibles. In addition, a partial height wall of 1-hour fire barrier construction is installed with a wing section. This barrier is installed as a radiation shield to protect at least one Division of panels from a single fire.

The chillers (K403) supply chilled water to the air handling units in room 5620, the Technical Support Center (TSC) air handling unit and the Remote Shutdown Panel (RSP) room air handling unit. There is 4 ft between chiller skids.

Fire area CD84 is defined mostly by 5703 and 5704, a very large room, 7161 ft², with very low congestion. The maximum in situ cable loading could be 2580 lbs in two non-1E cable trays with an equivalent fire burn time of 1.0 minute. The area is monitored by both ionization and photoelectric detection. Suppression can be by water hose or portable extinguishers. All walls, floor or ceiling are either 3-hour fire barriers or adjacent to the outside. All cables are routed in conduit, except for the non-1E cable trays as stated above. There are no other combustibles on this floor. Transient combustibles are administratively controlled to limit access to this area. There are no maintenance activities which involve more than small quantities of hand held grease or oil lubrication in this area. There are no oil bath lubrication systems which would require transit of oil changes at this elevation.

Rooms 5105 and 5617 are connected to 5703 with duct. The Ruskin 3 hour fire dampers in the ducts have been shown to be not qualified to fully close against the design air flow rates even with the maximum listed springs installed. Room 5105 contains the RPS M-G sets and failure of this

equipment is fail safe (causes a SCRAM). Room 5617 contains channel A & C cable in conduit from equipment located in 5703. Therefore, by combining these rooms into one fire area, the 3-hour fire barrier and the dampers between the rooms are not required. The consequences of a fire in 5105 or 5617 are bounded by the consequences of a fire in 5703/5704.

Four dampers located in the slab at Elevation 178', Diesel Building, separating fire areas containing redundant safe shutdown equipment cannot be qualified to close under the design airflow conditions. As a result, the ductwork from each nonqualified damper is wrapped with a mat material from the floor penetration sleeve to the next qualified damper in the area boundary, which in this case is a vertical damper. The total length of wrapped duct is approximately 150 linear feet. The wrap material is 10 layer 3M E-50A mat system. The E-50A mat has been tested as a 3-hour cable tray wrap, and an analysis of the fire test indicates that utilization of this wrap system on HVAC ductwork will yield the same acceptable results, considering the lack of combustibles internal to the duct and the zero airflow once the qualified vertical damper has closed. The 3M test report number is R10125-3. The test adequately proves that the 3M E-50A 10 layer mat system will perform as a 3-hour fire barrier and limit cold side temperatures to 325°F or less. This is in compliance with the requirement of BTP-CMEB 9.5-1 for separation of redundant safe shutdown divisions.

The four unacceptable horizontal fire dampers are left in place since they will partially close and provide some restriction to the passage of fire.

Conservative assumptions were used in analyzing the effects of a postulated fire on safe shutdown and/or radioactive release.

1. Transient combustibles of sufficient quantity are temporarily stationed there which when ignited could affect equipment on this floor.
2. No fire watch.
3. Offsite power lost or available, whichever is worse.
4. High outside ambient air temperature.
5. Conservative, computer generated, heat transfer calculations.
6. Solid state electronics fail (includes spurious actuation at their qualification limit of 104°F room temperature).

Based on this, the following summarizes the effects of loss of certain combinations of equipment (based on their proximity to each other).

If a fire disabled both air handling units' power cable, temperature would start to rise and may eventually affect the control equipment room panels. No effect on cabling or use of batteries is postulated since the cable is not temperature sensitive and the batteries load will become zero after the Diesel Generators start (assuming LOP). The heat load into 5630 is very small and therefore loss of Control room HVAC is not postulated. Control and instrumentation from the remote shutdown panel will be available to aid the main control room operators. Loss of RSP air handling unit is not postulated since its

motor is cooled by itself. Temperature indication is provided in the Control Equipment Room, Main Control Room, Remote Shutdown Panel Room and 1E inverter room in order to monitor room ambient temperatures.

If a fire took out both chillers, it may affect equipment on Elevation 163 ft-6 in. due to a lack of chilled water to VH408. Depending on seasonal temperatures, this may eventually heat up the 1E panel room (5605), and eventually affect the solid state logic used for main control room instrumentation. Remote Shutdown Panel instrumentation and controls would not be affected for more than 24 hours.

This is based on a calculation which assumed total loss of HVAC to the Remote Shutdown Panel room. Since, in this scenario, air flow to the RSP room would not be interrupted, then the actual time limit to reach the qualification limit of 104°F will be longer. This is more than ample time for a safe orderly shutdown. Control Room habitability will not be affected during this period.

A transient fire which affects D-G HVAC Division I panels will eventually affect operation of Division I diesel generators. The same fire is not postulated to affect the Division II panels and subsequently Division II diesel generators since the panels and associated cable are greater than 20 feet apart and a barrier is installed with the height at least 1 foot higher than the panel, between the panels.

If a fire affected both air handling units and both chillers, the effect would be no different than loss of both chillers as described above.

If the fire were to affect the A&C Diesel Generator HVAC panels and both chiller units, the effect would be the

same as loss of both chillers, as described above, except that loss of the RSP HVAC (on the A diesel) is also postulated.

Loss of both air handling units and the Division II D-G HVAC panels would only be a concern on high ambient temperature days. This concern would be for the long term heat up of the control equipment room (CER) at Elevation 102 and the possible effect on the solid state electronics therein. Temporary fans will be used in an attempt to maintain the CER ambient temperatures below EQ levels. Major Division I equipment can be controlled from the switchgear room for use in long term shutdown outside the main control room if this scenario were to come about.

A fire in this area would be of limited severity and duration and the dual detection system provides an early warning system. The probability is very low that an exposure fire of sufficient magnitude to damage redundant safe shutdown divisions could occur prior to response of the fire brigade. The installation of a fixed fire suppression system will not significantly enhance the safe shutdown capability.

- f. An exemption from Appendix R, Section III.G.2.a was requested for the bus duct penetrations in fire areas CD28, CD29, CD30 and CD31, the diesel generator rooms. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a was granted for bus duct penetrations and is documented in Hope Creek's SSER-5 page 9-7. The seal inside the bus duct 3-hour fire barrier qualification report shows the cold side temperature exceeds 325°F by 2°F.

There are no combustibles present in the zone where the temperature exceeds 325°F. In addition, if the duct collapsed into the diesel generator room proper, the sealant will not pull out. There is a structural support plate imbedded in the wall which holds the bus bars and the sealant in place.

- g. An exemption was requested from Appendix R Section III.G.2.a for the Ruskin 3-hour fire damper, 1GMD279D6 which is part of the fire area boundary between the duct chase (part of CD84) and corridor 5111 (part of CD10) at Elevation 54. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a was granted for the 3-hour Ruskin fire damper that may not fully close under air flow and is documented in Hope Creek's SSER-5 page 9-13. This fire damper has been shown to be not qualified to fully close against the design air flowrates even with the maximum listed springs installed. Fire area CD10 contains channel B and D cable from the service water at elevation 77. Fire area CD84 contains all four channels of diesel generator emergency HVAC as discussed in 9A.6.5.1.e. A second unqualified Ruskin fire damper is installed at Elevation 178 where the HVAC penetrates the floor slab into the HVAC chase. There are no combustibles in corridor 5111. Both ionization and photoelectric detection and two water hose stations serve this area. The combination of distance (separation in excess of 100 feet between redundant shutdown divisions), partially effective fire dampers, detection, suppression, and lack of combustibles provides a level of protection equivalent to that specified in Section III.G.2. Additional fire protection features will not enhance fire protection safety above that provided by the existing configuration.
- h. An exemption was requested from Appendix R Section III.G.2.a for the Ruskin 3-hour fire dampers which penetrate between the unoccupied areas (formally, Unit 2) and Unit 1 fire areas. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a was granted for the 3-hour Ruskin fire damper that may not fully close under air flow and is documented in Hope Creek's SSER-5 page 9-13. These dampers are 1GMD140, 1GMD459, 1GMD178, 1GMD172 and 1GMD686D3. These dampers are horizontal Ruskin fire dampers which have been shown to be not qualified to fully close against the design air flow rates. There are no combustibles or transient combustible materials in the unoccupied areas of the former Unit 2 diesel areas. The vertical dampers which penetrate from the unoccupied area back to Unit 1 fire areas are qualified fire dampers. The horizontal

fire dampers are in the slab between rooms at 163 feet -6 inches and Elevation 178 feet. Since there are no combustibles in the unoccupied areas and the vertical dampers in the same HVAC duct run are qualified, then additional fire protection features will not enhance fire protection above that provided by the existing configuration.

9A.6.5.2 Shutdown Method

The shutdown method used for each of the fire areas in the auxiliary control and diesel area is listed in Table 9A-5.

9A.6.6 REACTOR BUILDING DRYWELL, FIRE AREA RB7

The drywell and wetwell together form one fire area. The boundaries of this fire area are defined by the drywell wall and the torus and connecting piping. These walls are not rated by UL as a fire barrier. The drywell boundary is sealed, however, to maintain the primary pressure boundary in case of accidents. Since the drywell is inerted, a fire in the drywell is not postulated.

9A.6.6.1 Exemption Request

An exemption from Appendix R, Section III.G.2 was requested for drywell penetrations. Drywell penetrations are sealed for containment of radiation and pressure but not fire. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the drywell penetration seals and is documented in Hope Creek's SSER-5 page 9-10. Since the containment is inerted during normal operation, a fire is not postulated to spread to the containment or start inside containment.

9A.6.6.2 Shutdown Method

No fires are postulated during normal operation in the drywell. Therefore, both Shutdown Method I or II can be used.

9A.6.7 REACTOR BUILDING ELEVATION 132 AND ABOVE, FIRE AREA RB5

The Reactor Building, all rooms at Elevation 132 and above, are considered as one fire area RB5, except the stairwells. This fire area is defined by the drywell wall on the inside, the unrated exterior wall and floor, the 3-hour technical support center wall, the 3-hour steam tunnel boundaries and the stairwell/elevator 2-hour boundaries. The fire area extends from Elevation 132 to the unrated ceiling/dome above elevation 201. The architecture room numbers are 44XX through 47XX except for the Technical Support Center defined in Section 9A.6.12, and the pipe chases 4402, 4409, and 4505 which are part of the torus compartment fire area.

The equipment or cable in this fire area are not needed for safe shutdown. The unrated floor of this fire area does touch two redundant fire areas at Elevation 102. It also touches the torus compartment fire area unrated pipeway and steam vent at Elevation 132 and 145.

Generic Letter 86-10 Engineering Evaluations were performed to analyze plant safe shutdown capability due to the unrated fire barriers between Fire Area RB5 and Fire Areas RB1 and RB2. These Engineering Evaluations concluded that there is no impact on the shutdown capability due to a fire scenario that propagates between Fire Areas RB5 and RB1 or RB2.

9A.6.7.1 Exemption Request

- a. An exemption from Appendix R, Section III.G.2 was requested for the lack of 3-hour fire barrier between this fire area and the torus compartment fire area (RB3N & RB3S), reactor building Division I fire area (RB1), and the reactor building Division II fire area (RB2) in paragraphs 9A.6.10.1.f, 9A.6.10.1.g, 9A.6.8.1.k, and 9A.6.9.1.k respectively. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the torus compartment fire area and is documented in Hope Creek's SSER-5 page 9-11.

9A.6.7.2 Shutdown Method

The fire area RB5 was analyzed assuming shutdown would use Division II equipment. Based on this assumption as a minimum, manual depressurization plus use of low pressure systems and the normal shutdown path can be used.

9A.6.8 REACTOR BUILDING DIVISION I, FIRE AREA RB1

The northern half of the Reactor Building, Elevations 54, 77, and 102, contains Division I safe shutdown equipment and cable and is fire area RB1. Refer to Plant Drawings M-5001, M-5002 and M-5003. This fire area contains the following architecture rooms:

Elevation 54; 4111, 4112, 4113, 4114, 4115, 4116, 4117, & 4118

Elevation 77; 4209, 4210, 4211, 4212, 4213, 4214, 4215, 4216, 4218, & 4219.

Elevation 102; 4301, 4309, 4310, 4311, 4313, 4315 (separates fire areas without a wall), 4326, 4328, 4330, 4331, 4332 & 4333.

The elevator and stairwells are separate fire areas and are not part of this fire area. Fire area RB1 is defined by fire barriers except as noted below. This fire area contains partial coverage by automatic suppression systems in rooms 4201 and 4301 over high cable concentration areas.

- a. The equipment and personnel access doors between rooms 4301 and 3314 are not UL labeled.
- b. The equipment access panel between SACS room 4309 and the equipment airlock 4323 is not UL labeled.
- c. The equipment access panel between SACS room 4309 and 4307 is not UL labeled. This wall separates redundant divisions.
- d. The door between SACS rooms 4309 and 4307 is not UL labeled.
- e. The HVAC duct penetrating the 3-hour barrier between 4309 and 4323 does not contain a fire damper.

- f. The door between 4328 and 4323 is not UL labeled.
- g. The HVAC duct penetrating the 3-hour barrier between 4326 and 4323 is not UL labeled.
- h. The barrier surrounding 4327 and 4329 contains HVAC duct supply and return which does not have UL qualified fire dampers and non-UL rated doors.
- i. The door between 4331 and the steam tunnel 4316 is not UL labeled.
- j. Corridor 4315 separates fire areas RB1 and RB2 without a fire barrier.
- k. The 3-hour rated floor slab at Elevation 102 is supported by steel which has not been fireproofed.
- l. The door between 4218 and the torus area 4117/4102 is not UL labeled.
- m. The fire barrier between 4218 and 4201 contains an unrated door and HVAC ducts without fire dampers.
- n. The fire barrier between 4209 and 4207 contains two HVAC ducts without fire dampers and a non-UL rated door.
- o. The HVAC duct isolation dampers between 4215 and 4102 are not UL labeled.
- p. The door between 4118 and 4101 is not UL rated.
- q. The pressure blowout panel between 4113 and 4102 is not UL rated.
- r. The pressure blowout panel between 4111 and 4102 is not UL rated.

- s. The door between 4111 and 4110 is not UL rated.
- t. The west boundary is an exterior wall.
- u. The 3-hour floor slab at Elevation 77 ft is supported by steel which is not fireproofed.
- v. The upper boundary (ceiling) between Elevation 102 and fire area RB5 is not a fire rated barrier.

9A.6.8.1 Exemption Request

- a. An exemption from Appendix R, Section III.G.2 was requested for the non-UL rated pressure tight doors which bound this fire area. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a was granted for the use of non-UL rated pressure tight doors and is documented in Hope Creek's SER pages 9-35 and 9-36. These doors are between rooms: 4111 and 4110, 4118 and 4101, 4209 and 4207, 4218 and 4217, 4309 and 4307, 4301 and 3314, 4328 and 4323, 4331 and 4316, 4328 and 4329, and 4328 and 4327. Refer to the exemption requested in 9A.6.3.1.a for a discussion of the type of doors used for pressure tightness on HCGS. The equivalent fire loading for rooms adjacent to the doors are given in Table 9A-1. The equivalent fire load is less than 30 minutes in most rooms adjacent to the doors.
- b. An exemption from Appendix R, Section III.G.2 requirements was requested for the equipment access panel between safety auxiliary cooling system rooms, 4307 (Fire Area RB2) and 4309 (Fire Area RB1). A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. This panel is a pressure tight panel and is not qualified as a 3-hour fire barrier by UL. The panel is fabricated out of heavy gage steel. The outline of the panel is shown on Figure 9A-10. Adjacent to the panel, on both sides, are areas of greater than 20 feet of clear space without combustibles. The panel is 10" x 22", and does not extend up to the ceiling. The 6 feet between the top of the panel and the ceiling is a reinforced concrete 3-hour-rated fire barrier. This 6-foot section is a hot

gas barrier and retards the effects of the fire from affecting the redundant division. Fire loading on either side of the barrier is low; 16 minutes and 8 minutes in 4309 and 4307, respectively. The pressure tight (leak tight) panel is required for overriding safety considerations of flood protection. Photoelectric type detectors, water hose and portable extinguishers cover both areas. The separation distance between redundant division components is greater than 35 feet through the equipment access panel.

The combination of clear space, gas trap, low fire loading, detection and fire brigade action assures that one train of equipment necessary to achieve hot shutdown will be free from damage. Any additional modifications to upgrade the access panel would not enhance fire protection safety above that provided by the existing configuration.

- c. An exemption from Appendix R, Section III.G.2 was requested for the unrated equipment access panel and for the HVAC duct without fire damper in the 3-hour fire barrier between the SACS room, 4309, and the equipment airlock, fire area RB2, room 4323. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. Refer to Plant Drawing M-5003.

The redundant safe shutdown cable are approximately 70 feet apart through two walls and a normally empty equipment airlock. The equivalent fire loading is low, less than 17 min. in each room. The equipment airlock is used mostly during shutdown; however, a small amount of combustibles may pass through this room during routine maintenance. Photoelectric detection is provided over both rooms. Water hose and portable extinguishers are available for suppression.

Because of the wide separation, both rated and unrated wall, low in situ fire loading, clear space and early fire detection system, there is low probability that an exposure fire can damage redundant safe shutdown equipment prior to response to the fire brigade. The existing fire protection provided for this area provides a level of safety equivalent to the technical requirements of Section III.G.2.

- d. An exemption from Appendix R, Section III.G.2 was requested for the HVAC duct without fire damper in the 3-hour fire barrier between rooms 4326 and 4323, the equipment airlock. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. This exemption is identical with 9A.6.8.1.c. This is the same duct which penetrates from 4309 to 4323 then from 4323 to 4326. This duct is a supply duct from the Reactor Building Ventilation System and is not required for safe shutdown. The equivalent fire loading is less than 23 minutes in 4326. Photoelectric detection is provided over both areas. Water hose and portable extinguishers are available for suppression.

The redundant safe shutdown cables are at least 70 feet apart through two walls and a normally empty equipment airlock. The equipment airlock is used primarily during shutdown; however, a small amount of combustibles may pass through this room during routine maintenance.

- e. An exemption from Appendix R, Section III.G.2, was requested for the HVAC supply and return duct to the pipeways (part of fire area RB3N) rooms 4327 and 4329, which do not contain UL rated fire dampers. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. The HVAC duct is made from 12 and 14 inch diameter steel pipe with two series valves serving as redundant pressure tight isolation dampers. The isolation dampers are controlled by redundant pipe break detection temperature elements in the pipeways. The pipeway duct penetrations are located

below 125.5 feet elevation. The equivalent fire load is less than 22 minutes. There is photoelectric detection, and water hoses or portable extinguishers are used for suppression. These pipe ducting, redundant pressure tight isolation dampers, and redundant actuation temperature elements required for overriding safety reasons provide a level of fire stop equivalent to the technical requirements of Appendix R.

- f. An exemption from Appendix R, Section III.G.2, was requested for corridor 4315, which separates redundant division cable and fire areas without a fire barrier wall. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. Fire area RB1, rooms 4326, 4328, and 4331 contain Division I safe shutdown cable tray. Fire area RB2 rooms 4317, 4320, and 4322 contain Division II safe shutdown cable trays. These areas are separated from each other by room 4315. Refer to Plant Drawing M-5003.

Room 4315 provides an effective fire barrier separating the different divisions and fire areas. Room 4315 is approximately 60 feet long with negligible intervening combustibles. It has a low ceiling at Elevation 119'-4-1/2" versus the high ceiling of adjacent rooms 4317 and 4331, at 129'-6". This tends to create a gas trap which precludes hot gases from a fire which might affect one division from affecting the other division as well. Channels C and D are greater than 100 feet apart. Channels A and B, which contain the majority of safe shutdown cable, are separated by greater than 280 feet around the circumference. The combustibles in this fire area are mostly made up of cable insulation. The fire load is less than 1-hour in rooms 4326, 4328, 4331, 4315, 4317, 4320 and 4322.

Each fire area has photoelectric type detectors and water hose and portable extinguishers can be used for suppression.

Appendix R accepts a 3-hour fire barrier or automatic suppression plus detection over areas containing redundant divisions. The physical configuration of distance between divisions, clear space and heat trap (low ceiling in 4315) creates a fire barrier between redundant divisions. This, in combination with the low fire loading of in situ and transient combustibles plus fire retardant cable per IEEE-383 and detection, provides an effective alternative to Appendix R, Section III.G requirements. The equipment necessary to achieve hot and cold shutdown from the main control room will be free of fire damage. Additional modifications would not enhance fire protection safety above that provided by the existing condition.

- g. An exemption from Appendix R, Section III.G.2 was requested for the HVAC ducts without fire dampers and unrated door in the fire barrier between rooms 4218 and 4201. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 pages 9-6 and 9-10.

Elevation 77 of the Reactor Building, room 4218, is part of fire area RB1 and contains Division I safe shutdown cable. Room 4201 contains Division II safe shutdown cable. These rooms are separated by a 12-inch thick reinforced concrete wall with pipe, conduit and cable tray penetrations sealed for 3-hour fire barriers. The penetrations include a hollow metal core door and two HVAC duct which do not provide a 3-hour fire barrier. There are greater than 30 feet of horizontal distance without intervening combustibles or fire hazards in room 4201. The Division II 1E cable, located at the south end

of 4301, is covered by an automatic water suppression system because of a cable concentration. There are greater than 120 feet horizontal distance plus the wall between the redundant 1E divisions. There are 13,506 lbs (34 minutes) of combustibles in 4201, and 10,251 lbs (20 minutes) of combustibles in 4218. Both rooms contain photoelectric detection and, in addition to the auto suppression, water hose and portable extinguishers are available for suppression.

The wall penetrations are sealed, therefore, the wall acts like a heat trap. Since the fire loading is low, partial auto suppression is provided, and the distance between 1E cable is great, the existing wall, door and HVAC duct will provide an adequate fire stop. The wall allows time for operator action to safely shutdown and time for fire brigade action to suppress the fire. The auto suppression system protects the closest Division II 1E cable. Therefore, at least one train of equipment necessary to achieve hot shutdown from the main control room will be free of fire damage. Any additional modifications will not enhance fire protection safety above that provided by the existing configuration.

- h. An exemption from Appendix R, Section III.G.2 was requested for the two HVAC ducts without fire dampers which penetrate the fire barrier between room 4209, in the fire area RB1, and 4207. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. The wall is 12 inches thick reinforced concrete and has 3-hour fire barrier sealant in the penetrations. Room 4207 is a passageway which does not contain any 1E cable. Refer to Plant Drawing M-5002.

Division I cable is located at the far North end of the RACS heat exchanger area in passage 4213. Division II cable is located in the Motor Control Center Area, 4205. Therefore, the redundant safe shutdown cable is

greater than 150 feet apart through the fire barrier containing these HVAC duct and through another unrated wall.

Photoelectric detection is provided and water hose or portable extinguishers are available for suppression. The equivalent fire load is 16 minutes (16,850 lbs), 64 minutes (3,300 lbs) and 19 minutes (7000 lbs) for rooms 4209/4211/4213, 4207 and 4205, respectively. The 38 x 26 inch duct and the 32 x 16 inch duct penetrate the wall at 87 and 91 foot elevation, respectively. The ceiling is at Elevation 100 feet, therefore, there will be a hot gas trap above the duct of greater than seven feet.

This combination of wide separation, low in situ fire loading, gas trap and sealed penetrations in one wall, a second unrated wall, and early warning fire detection throughout, provides a low probability that an exposure fire can damage redundant safe shutdown equipment prior to the response of the fire brigade.

- i. An exemption from Appendix R, Section III.G.2, was requested for the non-UL rated isolation damper in the HVAC duct penetrating the fire barrier between MCC area 4215, part of fire area RB1, and fire area RB3N, room 4102. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. This Reactor Building Ventilation System return duct is steel pipe with redundant pressure tight isolation valves of the same configuration as discussed in 9A.6.8.1.e. The 26 inch pipe penetrates at Elevation 86.5 feet. This provides a gas trap of greater than 12 ft. Photoelectric detection covers 4215 and water hose or portable extinguishers are available for suppression. The equivalent fire load is 31 minutes in 4215. This pipe ducting, redundant pressure tight isolation dampers and redundant actuation temperature elements required for overriding safety reasons, provide a level of fire stop equivalent to the technical requirements of Appendix R.

- j. An exemption from Appendix R, Section III.G.2, was requested for the pressure relieving blowout panels between the RHR room 4113, the HPCI pump room 4111, and fire area RB3, room 4102. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. Rooms 4113 and 4111 are part of this fire area. The barrier between these rooms is otherwise rated as a 3-hour fire barrier.

An outline of the 1/4 inch thick steel blowout panels is shown on Figure 9A-16. There are no redundant safe shutdown cables in the torus compartment which can be reached by a 20-foot diameter fire in either the RHR or HPCI rooms. Even if a fire were to affect both the HPCI and RCIC cabling or valves inside the torus compartment, shutdown method 3 or 4 using ADS and RHR could be used. The panels only open with the higher pressure in the pump room. The fire load in the RHR and HPCI, rooms with blowout panels in them is 28 and 20 minutes, respectively. Photoelectric detectors are located in these rooms. Water hose or portable extinguishers can be used in these rooms and inside the torus compartment to suppress the fire.

Based on the high ceiling of the torus compartment (to elevation 99 ft-9 inches), and the separation of redundant cable, a fire in the RHR or HPCI room will not affect safe shutdown using the redundant Division II.

- k. The boundary between fire area RB1 and fire area RB5 is an unrated reinforced concrete slab at Elevation 132. Refer to Section 9A.6.7. The fire area RB5 also touches the fire area RB2 via an unrated slab at Elevation 132 and

touches fire area RB3S via an unrated wall to the pipeway at Elevation 132. Therefore, an exemption was requested from Appendix R, Section III.G.2 for the unrated barriers between redundant fire areas above Elevation 132 of the Reactor Building. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for this unrated concrete slab and is documented in Hope Creek's SSER-5 page 9-11. These unrated barriers will have no effect on safe shutdown because of a fire.

9A.6.8.2 Shutdown Method

Shutdown Method II can be used in all areas. In most areas RCIC can be used as the primary source of makeup water. However, in all areas manual depressurization and use of low pressure makeup is available. The automatic suppression and detection systems installed over the Division II cable in room 4301 protects that cable per an equivalent III.G.2.b separation from a fire in fire area RB1.

9A.6.9 REACTOR BUILDING DIVISION II, FIRE AREA RB2

The southern half of the reactor building, elevations 54, 77 and 102, contain Division II safe shutdown equipment and cable. This fire area contains the following architectural rooms.

Elevation 54; 4101, 4103, 4104, 4105, 4106, 4107, 4108, 4109 and 4110.

Elevation 77; 4201, 4202, 4203, 4205, 4206, 4207 and 4208.

Elevation 102; 4303, 4304, 4305, 4307, 4315 (both Division I and II fire areas) 4317, 4318, 4320, 4322, 4323 and 4324.

The elevator and stairwells are separate fire areas and are not part of this fire area. This Reactor Building fire area is defined by fire barriers except as noted below.

- a. The equipment access panel between SACS Room 4309 and the equipment airlock 4323 is not UL labeled.
- b. The equipment access panel between SACS rooms 4309 and 4307 is not UL labeled. This wall separates redundant divisions.
- c. The door between SACS rooms 4309 and 4307 is not UL labeled.
- d. The HVAC duct penetrating the 3 hour barrier between 4309 and 4323 does not contain a fire damper.
- e. The door between 4328 and 4323 is not UL labeled.
- f. The HVAC duct penetrating the 3-hour barrier between 4326 and 4323 is not UL labeled.
- g. The barrier surrounding 4319 and 4321 contains HVAC duct supplies which do not have UL qualified fire dampers and contain non-UL rated doors.
- h. Corridor 4315 separates fire areas RB1 and RB2 without a fire barrier.
- i. The 3-hour rated floor slab at Elevation 102 is supported by steel which has not been fireproofed.
- j. The door between 4205 and the torus area 4104/4102 is not UL labeled.
- k. The fire barrier between 4218 and 4201 contains an unrated door and HVAC ducts without fire dampers.
- l. The fire barrier between 4209 and 4207 contains two HVAC ducts without fire dampers and a non-UL rated door.

- m. The HVAC duct isolation dampers between 4201 and 4102 are not UL labeled.
- n. The door between 4118 and 4101 is not UL rated.
- o. The pressure blowout panel between 4109 and 4102 is not UL rated.
- p. The pressure blowout panel between 4110 and 4102 is not UL rated.
- q. The pressure tight door between 4110 and 4111 is not UL rated.
- r. The 3-hour rated floor slab at Elevation 77 is not supported by steel which is fireproofed.
- s. The upper boundary (ceiling) between this fire area and the fire area RB5 at Elevation 132 is not a rated fire boundary.
- t. The West and South fire area boundary is an unrated exterior wall.

9A.6.9.1 Exemption Requests

- a. An exemption from Appendix R, Section III.G.2, has already been requested in 9A.6.8.1.a, for several non-UL rated pressure tight doors which bound this fire area. These doors are between rooms: 4110 and 4111, 4101 and 4118, 4207 and 4209, 4307 and 4309. In addition, an exemption from Appendix R, Section III.G.2 is requested for the remaining pressure tight doors bounding this fire area. These doors are between rooms 4328 and 4323, 4319 and 4320, 4321 and 4320, 4205 and 4204/4102. The justification for these doors is as presented in Section 9A.6.8.1.a.

- b. The exemption from Appendix R, Section III.G.2, has been requested in 9A.6.8.1.b. for the equipment access panel between SACS rooms 4307 and 4309.
- c. An exemption from Appendix R, Section III.G.2, has been requested in 9A.6.8.1.c for the unrated equipment access panel and for the HVAC duct without fire damper in the 3-hour fire barrier between SACS room, 4309, and the equipment airlock 4323.
- d. An exemption from Appendix R, Section III.G.2, has been requested in 9A.6.8.1.d for the HVAC duct without fire damper in the 3-hour fire barrier between rooms 4326 and 4323, the equipment airlock.
- e. An exemption from Appendix R, Section III.G.2, was requested for the HVAC supply duct to the pipeways, rooms 4319 and 4321, which do not contain UL rated fire dampers. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. These two supply pipes are identical with those discussed in 9A.6.8.1.e and 9A.6.8.1.i. The duct is 14 inch diameter steel pipe with two series valves serving as redundant pressure tight isolation dampers. The pipe and valve configuration, temperature control, elevations, detection and suppression are the same as discussed in Section 9A.6.8.1.e. The equivalent fire load is less than 12 minutes in 4320 and 17 minutes in 4322. There is no fire load in the pipeways. This configuration provides a level of fire stop equivalent to the technical requirements of Appendix R.
- f. An exemption from Appendix R, Section II.G.2, has been requested in Section 9A.6.8.1.f for the corridor 4315 which separates redundant division cable, and fire areas, without a fire barrier wall.
- g. An exemption from Appendix R, Section III.G.2, has been requested in Section 9A.6.8.1.g. for the HVAC duct without

fire dampers and unrated door in the fire barrier between rooms 4201 and 4218.

- h. An exemption from Appendix R, Section III.G.2, has been requested in Section 9A.6.8.1.h for the two ducts without fire dampers which penetrate the fire barrier between rooms 4207 and 4209.
- i. An exemption from Appendix R, Section III.G.2, was requested for the non-UL rated isolation dampers for the HVAC duct penetrating the fire barrier between corridor 4201, part of fire area RB2, and fire area RB3S, room 4102. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. This Reactor Building Ventilation System supply duct is steel pipe with redundant pressure tight isolation valves of the same configuration discussed in Section 9A.8.1.e. The 26 inch pipe penetrates at Elevation 95 feet. An Automatic Water Suppression System covers the cable concentration and this duct and dampers (pipe and valves). Photoelectric detection provides early detection and in addition to the auto suppression, water hose and portable extinguishers are available. This pipe ducting, redundant pressure tight isolation dampers (valves), redundant actuation temperature elements and auto suppression, provide a level of fire stop equivalent to the technical requirements of Appendix R.
- j. An exemption from Appendix R, Section III.G.2, was requested for the pressure relieving blowout panels between the RHR room 4109, the RCIC pump room 4110 and fire area RB3S, room 4102. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-UL rated fire barriers and is documented in Hope Creek's SSER-5 page 9-10. Rooms 4109 and 4110 are part of this fire area. The barrier between these rooms is otherwise rated as 3-hour fire barrier.

An outline of the 1/4 inch thick steel

blowout panel is shown in Figures 9A-15 and 9A-16. There are no redundant safe shutdown cables in the torus compartment which can be reached by a 20-foot diameter fire in either the RHR or RCIC rooms. Even if a fire were to affect both the HPCI and RCIC cabling or valves inside the torus compartment, shutdown method 3 or 4 using ADS and RHR could be used. The panels only open with the higher pressure in the pump room. The fire load in the RHR and RCIC rooms with blowout panels in them is 9 and 22 minutes, respectively. Photoelectric detectors are located in these rooms. Water hose or portable extinguishers can be used in these rooms and inside the torus compartment to suppress the fire.

Based on the high ceiling of the torus compartment, room 4102 (to elevation 99 feet-9 inches), and the separation of redundant cable, a fire in the RHR or RCIC room will not affect safe shutdown using the redundant Division II equipment.

- k. The boundary between this fire area and fire area RB5 at Elevation 132 and above is an unrated reinforced concrete slab at Elevation 132. Refer to 9A.6.7. Fire area RB5 also touches fire area RB1 via an unrated slab at elevation 132 and it touches fire area RB3S via an unrated wall to the pipeway at elevation 132. Therefore, an exemption was requested in 9A.6.8.1.k from Appendix R, Section III.G.2, for the unrated barriers between redundant fire areas. These unrated barriers will have no effect on safe shutdown because of a fire.
- l. An exemption from Appendix R, Section III.G.2, was requested for the unrated wall separating the airlock 4323 from the steam vent which is part of fire area RB3S. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for this unrated wall and is documented in Hope Creek's SSER-5 page 9-11. The

steam vent is completely empty and is open to the torus room below. The equipment airlock is normally empty. There are no penetrations through the 24 inch reinforced concrete wall. Therefore, this barrier is the same as a rated 3-hour fire barrier.

9A.6.9.2 Shutdown Method

Shutdown Method I utilizing HPCI will be relied upon for safe shutdown. A fire in 4203, 4205 or 4207 could result in spurious closure or fail as is of the Condensate Storage Tank test return valves BJ-HV-F008 and/or AN-HV-F011. Valve BJ-HV-F008 is normally throttled to control water makeup to the vessel while using HPCI. However, manual or automatic starting of HPCI on low level and stopping on high level is not affected and therefore the HPCI is considered to be still available.

In addition, use of manual depressurization and low pressure systems may be available. The cable for the SRVs, however, is located in this fire area, one floor up and in rooms to the Northeast from the rooms that contain BJ-HV-F008 and AN-HV-F011.

9A.6.10 REACTOR BUILDING TORUS ROOM, FIRE AREA RB3 (NORTH AND SOUTH)

The BWR Mark I containment torus is contained in a cylindrical room. This room, its vestibules and connecting pipeways and steam vent, is fire area RB3. The architecture room numbers are 4102, 4204, 4217, 4319, 4321, 4327, 4329, 4402, 4409, and 4505. Refer to Plant Drawings M-5001 through M-5005. Because of the enormity of the torus room and its connecting rooms, it was analyzed as two separate areas. The north half of 4102 plus 4217, 4327, 4329 and 4409 is taken as fire area RB3N. The southern half of 4102 plus 4204, 4319, 4321, 4402 and 4505 is the other area designated RB3S.

The torus room and connecting rooms are designed as a pressure

tight compartment. Blowout panels in the HPCI, and RCIC rooms relieve pressure to the torus compartment in the event of a high pressure line break in one of these rooms. The torus compartment in turn has blowout panels to relieve pressure to the outside to prevent overpressurization of the torus compartment.

This fire area is defined by fire barriers except as noted below:

- a. Four (4) non-fire rated blowout panels are provided in the rated fire barrier between the torus area 4102, and the RHR, HPCI, RCIC and RHR pump rooms.
- b. The torus room access doors are non-UL rated pressure tight doors between 4204 and 4205 and between 4217 and 4218.
- c. The Reactor Building ventilation ducts do not contain UL rated fire dampers. Penetrations are between 4102 and 4201, and between 4201 and 4215.
- d. The doors to pipeways 4319, 4321, 4327 and 4329 are non-UL rated pressure tight doors.
- e. The HVAC penetrations to 4319, 4321, 4327 and 4329 do not contain UL rated fire dampers.
- f. The steam vent walls are not rated between the steam vent and the equipment airlock 4323.
- g. The steel supporting the 3-hour fire barrier above the torus compartment, 4102, is not fireproofed.
- h. The barrier surrounding the pipeway 4402 at Elevation 132, and 4505 at Elevation 145, is unrated. This includes pressure tight doors, HVAC ducts and pipe penetrations.
- i. The steam vent walls are not rated at Elevation 132, 145, and 163 feet-6 in. This includes the steam blowout panels between the steam vent and outside atmosphere.

- j. The ceiling above the steam vent and pipeway 4505 are not rated fire barriers.

9A.6.10.1 Exemption Request

- a. An exemption from Appendix R, Section III.G.2, was requested for the pressure blowout panels between the RHR, HPCI, RCIC and RHR pump rooms. Refer to Sections 9A.6.8.1.j. and 9A.6.9.1.j.
- b. An exemption from Appendix R, Section III.G.2, was requested for the non-UL rated pressure tight doors which bound this fire area below Elevation 132. An exemption was requested for the door between 4204 and 4205 in Section 9A.6.9.1.a. An exemption was requested for the doors between 4217 and 4218, 4319 and 4320, and 4321 and 4322 in Section 9A.6.8.1.a. The remainder of the doors are pressure tight type in non-UL rated walls between rooms 4402 and 4401, 4409 and 4408 and between 4505 and 4504. Refer to Plant Drawings M-5004 and M-5005. The justification for these doors being treated as fire barriers is given in Section 9A.6.3.1.a.
- c. An exemption from Appendix R, Section III.G.2, was requested for the Reactor Building ventilation ducts with non-UL rated dampers. These ducts are pressure tight pipe with dual isolation valves for dampers. The exemptions are requested in Section 9A.6.8.1.e, 9A.6.8.1.i, 9A.6.9.1.e, and 9A.6.9.1.i. Additional HVAC duct of the same type penetrate the barrier into the pipeways 4402 and 4505.
- d. An exemption from Appendix R, Section III.G.2, was requested for the non-UL rated fire barrier between the steam vent and fire area RB2, in Section 9A.6.9.1.1.
- e. An exemption from Appendix R, Section III.G.2, was requested for the unrated walls and penetrations

separating this fire area pipe way from fire area RB5 at Elevation 132 and above. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for the use of these non-rated fire barriers and is documented in Hope Creek's SSER-5 pages 9-10 and 9-11. The walls involved surrounded rooms 4402, at elevation 132, and 4505, at Elevation 145. These walls are minimum 24 inch thick reinforced concrete. The HVAC is piping with isolation valves the same as in Section 9A.6.8.1.e. The doors are pressure tight doors, the same as in Section 9A.6.8.1.a and 9A.6.3.1.a. All penetrations are sealed to maintain the pressure boundary of the torus compartment. The walls do not directly separate safe shutdown equipment or cable since there is no safe shutdown equipment or cable at Elevation 132 and 145. However, indirectly, through the unrated slab at 132, both divisions of shutdown cable could be reached.

This is not a credible event however. Photoelectric detection is located in fire area RB5. Fire hose is used for suppression. This combination of pressure tight barriers, low fire loading, early warning fire detection and fire brigade action assures that one train of equipment necessary to achieve hot shutdown will be free from damage.

- f. An exemption from Appendix R, Section III.G.2, was requested for the unrated fire barrier between fire area RB3N steam vent and fire area RB5 at Elevation 132 and above. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for this area and is documented in Hope Creek's SSER-5 page 9-11. The walls, penetrations and doors are those surrounding room 4409 on Elevation 132 and corresponding wall at Elevation 145 and 162. This wall is 24 inches thick, reinforced concrete, which is the equivalent to a 3-hour fire barrier wall. The penetrations are sealed to maintain the pressure boundary of the torus compartment. The door is a pressure type door as discussed in Section 9A.6.8.1.a and 9A.6.3.1.a. The walls do not directly separate safe shutdown equipment or cable since there is no safe shutdown equipment or cable

in fire area RB5, 132 and above fire area. However, indirectly, through the unrated slab at 132, both divisions of shutdown cable could be reached. This is not a credible event.

Photoelectric detection is located in fire area RB5. Fire hose is used for suppression. This combination of pressure tight barrier, low fire loading, early warning fire detection and fire brigade action assures that one train of equipment necessary to achieve hot shutdown will be free from damage.

- g. An exemption from Appendix R, Section III.G.2, was requested for fire area RB3, room 4102, which contains both divisions of safe shutdown cable. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for this area and is documented in Hope Creek's SSER-5 page 9-11. The torus room 4102, is a cylindrical room with an OD of 82.5 feet and ID of 35.5 feet. It is 46 feet high and contains the suppression pool torus. The torus has a mean diameter of 56.3 feet, its centerline is at 72.3 feet, and it sits 3 feet off the floor. The room also contains pipe, valves and four channels of 1E cable trays. Refer to Plant Drawings M-5001 and M-5002.

RHR A and B, core spray, HPCI, and RCIC cables are routed through this room. The redundant Class 1E channels are widely separated, however, with a very low overall in situ congestion. At the closest point, redundant division cable trays are greater than 30 feet apart with negligible intervening combustibles. There are no transient stored combustibles in this area. There is very little usable space for storage. Access is via one of the locked doors at Elevation 77 feet, a catwalk and stairs. The torus compartment is a high radiation area and thus only limited access is allowed. This reduces the availability for using this area for storage.

The cables are fire retardant per IEEE-383 and the majority are located below elevation 72 feet. The high ceiling virtually eliminates the possibility of heat flux affecting redundant cables. The cables are concentrated as follows: Channel C, 1955 lbs, @NNE; Channel A, 1190 lbs, @ENE, and 1445 lbs, @WNW; Channel B, 3683 lbs, @ESE; and Channel D, 1275 lbs, @SSE. The equivalent fire load is less than 3 minutes.

Analyzing the Division II cable and equipment in the predominantly Division I northern half, there are no spurious actuations which could prevent safe shutdown using Division I. However, loss of RHR shutdown cooling suction valve HV-F008 will cause loss the normal RHR shutdown cooling mode. This valve can be manually opened by hand or the alternate shutdown mode, utilizing Core Spray and SRVs can be used. A fire in 4109 (RHRB), 4113 (RHRA), 4111 (HPCI) or 4110 (RCIC) or an exposure fire in the torus area adjacent to the blowout panels has been analyzed. The fire will not jeopardize more than one safe shutdown division. A transient fire of approximately 22 foot diameter could possibly render HPCI and RCIC inoperable. If this were to occur, Division I and II Core Spray are more than 120 feet away and in conjunction with channel D SRVs and Division I and II RHR suppression pool cooling, can be used to achieve cold shutdown.

Analysis of the predominantly Division II southern half of 4102 shows that there are no spurious actuations which could prevent safe shutdown using Division I in conjunction with the SRVs in channel D. Loss of the normal shutdown cooling path is postulated with loss of RHR valve HV-F015A or HV-F008. However, the alternate shutdown path using SRVs, Core Spray and RHR suppression pool cooling is still available.

A fire in the area closest to the core spray suction valves should not affect both divisions of core spray since they are separated by 40 feet. However, if both core spray loops were assumed to be affected, both divisions of RHR, HPCI and RCIC are greater than 120 feet away and can be used for safe shutdown.

Appendix R, Section III.G.2, accepts an automatic suppression system with greater than 20 feet of separation without intervening combustibles plus detection for this situation. HCGS has heat actuated detectors in the horizontal 1E trays to detect a challenge to the Class 1E cable. Water hose stations are provided for suppression in the torus compartment.

The high ceilings and physical horizontal separation limit propagation of heat damage to one channel of one division. Therefore, at least one train of equipment necessary to achieve cold shutdown will be free from damage. The level of safety provided in the torus compartment is equivalent to the technical requirements of Section III.G. Additional modifications required to meet III.G.2 will not enhance fire protection safety above that provided by the existing configuration.

9A.6.10.2 Shutdown Method

The torus room and its adjoining rooms in this fire area do not have one shutdown method for a fire anywhere in this fire area. However, there is more than sufficient separation to rely on different shutdown equipment depending on the portion of the fire area a postulated fire occurs. For a fire in the northern rooms, defined in 9A.6.10, Shutdown Method II utilizing Division II Core Spray, RHR, and SRVs can be used. For a fire in the southern rooms, Shutdown Method I utilizing Division I Core Spray, RHR and the Division II SRVs (Channel D) can be used.

9A.6.11 REACTOR BUILDING MAIN STEAM TUNNEL, FIRE AREA RB4

The main steam tunnel fire area RB4, consists of the steam tunnel room 4316 up to the ventilation barrier at the boundary of the Reactor Building. The remainder of the steam tunnel and vent stacks are part of the Turbine Building fire area TB1. The steam tunnel is designed for pressure tightness. The emergency vent stack contains blowout panels to the outside and provides overpressure protection of the main steam tunnel in the case of a high pressure line break. There are no combustibles in this area and because of high radiation, detectors are not qualified for this area. Therefore, only the redundant pipe break detection temperature elements are used to annunciate abnormalities in this area. Refer to Plant Drawings M-5003 and M-5009.

This fire area is defined by 3-hour fire barriers except as noted below. There are no combustibles in this fire area.

- a. The steam tunnel fire barrier support steel is not fireproofed.
- b. The doors at Elevation 102 and at 132 are not UL rated fire doors.
- c. The ventilation barrier between the Reactor Building and Turbine Building portions of the steam tunnel is a pressure relieving panel and is not a rated fire barrier.
- d. The south wall adjacent to the outside is not a rated fire barrier.

9A.6.11.1 Exemption Requests

- a. An exemption from Appendix R, Section III.G.2, was requested for the pressure tight door at Elevation 102. Refer to Section 9A.6.8.1.a. An exemption from

Appendix R, Section III.G.2, was requested for the pressure tight door at Elevation 132. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a was granted for the use of non-UL rated pressure tight doors and is documented in Hope Creek's SER pages 9-35 and 9-36. Refer to the exemption requested in 9A.6.3.1.a for a complete discussion of the door type and justification.

- b. The ventilation barrier and the outside walls do not separate redundant divisions, therefore no exemption is requested.

9A.6.11.2 Shutdown Method

Shutdown Method I using HPCI or manual depressurization can be used for safe shutdown in this fire area. The HPCI feedwater injection valve BJ-HV-8278 can only affect one of the two HPCI injection paths and will not affect use of the HPCI for adequate makeup.

9A.6.12 TECHNICAL SUPPORT CENTER, FIRE AREA RB6

The technical support center, fire area RB6 is defined by the following architecture room numbers:

Elevation 132; 4415, 4416, 4417, 4418, 4419, 4420

Elevation 145; 4514, 4515, 4516, 4517

Elevation 153; 3613

The two stairwells and vestibules are a part of the fire area.

There are no safe shutdown cables or equipment in this fire area. The fire area is bounded by 3-hour fire barrier walls, ceiling, and floor except for outside walls and the boundary around the HVAC room, 3613. However, the floor slab at Elevation 132 is not supported by steel which has been fireproofed. The TSC functionally is part of the Auxiliary Building although it is built on top of the Reactor Building.

9A.6.12.1 Exemption Request

- a. The floor slab does not separate redundant safe shutdown divisions. The failure of the floor slab would only affect one safe shutdown division in the fire area RB1 below. Therefore, no exemption is requested for the lack of fireproofing.
- b. The TSC HVAC room, 3613, walls do not separate safe shutdown divisions. Therefore no deviation is requested.

9A.6.12.2 Shutdown Method

Both Shutdown Method I and II can be used for safe shutdown due to fire in this area.

9A.6.13 REMOTE SHUTDOWN PANEL ROOM, FIRE AREA AB4

The remote shutdown panel room, 3576, is fire area AB4. This fire area is defined by 3-hour barriers on all sides and 2-hour on the floor and ceiling. The Division I and II cables in this area do not meet Section III.G.2 separation. Shutdown can be accomplished using Division I safe shutdown equipment controlled from the main control room. The MCR separation from the RSP room meets Section III.G.2.a requirements. Therefore, no exception is requested.

9A.6.13.1 Exemption Request

None.

9A.6.13.2 Shutdown Method

Shutdown Method I utilizing the alternate shutdown path can be used as a minimum.

9A.6.14 SERVICE WATER INTAKE DIVISION I, FIRE AREA IS1

Service water intake structure fire area IS1 contains the Unit I, Division I service water pumps and auxiliaries and the adjacent unoccupied area, between column lines 6 and 8. This fire area consists of the following architectural room numbers:

Elevation 71 feet 6 inches; 101, 102, 103

Elevation 79 feet 8 inches; 106, 107, 108

Elevation 87 feet 8 inches; 112, 113

Elevation 93 feet 0 inches; 203, 204, 205, 206

Elevation 107 feet 0 inches; panel area

Elevation 122 feet 0 inches; 304, 305, 306, 307, 308

This fire area is defined by fire barriers except for barriers adjacent to the exterior, which are designed as flood and soil pressure barriers, and the barrier adjacent to fire area IS3, the traveling screen motor area.

9A.6.14.1 Exemption Request

- a. An exemption from Appendix R, Section III.G.2, was requested in 9A.6.16.1.a for the unrated wall between fire areas. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for this area and is documented in Hope Creek's SSER-5 page 9-11.

9A.6.14.2 Shutdown Method

Shutdown Method II can be used for safe shutdown for a fire in this area.

9A.6.15 SERVICE WATER INTAKE DIVISION II, FIRE AREA IS2

Service water intake structure Division II fire area IS2 contains the Unit 1, Division II service water pumps and auxiliaries. This fire area consists of the following architectural room numbers:

Elevation 79 ft - 8 inches; 110
Elevation 87 ft - 8 inches; 114
Elevation 93 ft - 0 inches; 207, 208
Elevation 107 ft - 0 inches; panel area
Elevation 122 ft - 0 inches; 310, 311, 312

This fire area is defined by fire barriers except for barriers adjacent to the exterior which are designed for flood and soil pressure barriers and the barrier adjacent to fire IS3, the traveling screen motor area.

9A.6.15.1 Exemption Request

- a. An exemption from Appendix R, Section III.G.2, was requested for the unrated wall between fire areas in 9A.6.16.1.a. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for this area and is documented in Hope Creek's SSER-5 page 9-11.

9A.6.15.2 Shutdown Method

Shutdown Method I can be used for safe shutdown for a fire in this area.

9A.6.16 TRAVELING SCREEN MOTOR ROOM, FIRE AREA IS3

Fire area IS3 is made up of the intake structure traveling screen motor room. This area is defined by exterior walls and unrated wall between this fire area and adjacent fire areas IS1, IS2 and unoccupied area fire area. See Plant Drawings M-5011 and M-5012, Elevation 114 ft.

9A.6.16.1 Exemption Request

- a. An exemption from Appendix R, Section III.G.2, was requested for fire area IS3. A deviation from Branch Technical Position CMEB 9.5-1, Section C.5.a and C.5.b was granted for this area and is documented in Hope Creek's SSER-5 page 9-11. This area, Elevation 114, contains all four service water pump intake traveling screen motors (S501) and both supply fans (V558) for the

traveling screen motor areas. This area also separates the Division I equipment in fire area IS1 from the Division II equipment in fire area IS2 without a rated fire barrier. Refer to Plant Drawings M-5011, M-5012, P-0013-1 (Section A-A), and P-0071-0.

The Traveling Screen assemblies are enclosed with fiberglass reinforced plastic (FRP) covers of nominal 3/16" or 1/4" thickness. Each of the Traveling Screens is provided with a means to allow entrapped fish to return to the river via a series of FRP troughs. The arrangement of the fish return system is such that the Division I and Division II Traveling Screens are interconnected by two 22" diameter semi-circular FRP troughs. There are approximately 8496 pounds of fiberglass installed in this area. The total combustible loading in this area is less than 1-hour equivalent fire severity.

Failure of this equipment does not have an immediate impact on the service water pump's ability to supply cooling water. All the cable for power, instrumentation and control are routed in conduit. The floor grating will not contain a liquid (flammable or otherwise) and the motors are 5 hp. Access is by ladder, which tends to preclude use of the area for storage. Suppression is by portable extinguishers. Smoke detection is accomplished by an air sampling incipient fire detector (IFD).

Under normal plant operation, the troughs are filled with several inches of water. The environment within the Traveling Screen Room is of a high relative humidity. There is no ignition source to create an exposure fire in this area. Because of the high ignition temperature of the FRP, the fiberglass is not easily ignitable, and with the added benefit of water contact on one side, propagation of flame is judged to be difficult.

Because of the greater than 25 feet of separation between redundant traveling water screen motors and an early fire detection system, there is a low probability that an exposure fire can damage redundant safe shutdown equipment prior to response of the fire brigade. Even if all the traveling water screen motors failed, there is an additional low probability that, because of the intake structure location, high debris load will be present to sufficiently plug the screens and affect the ability of both divisions of service water pumps to deliver the required cooling water flow. Therefore the existing fire protection program for this area provides a level of safety equivalent to the technical requirements of Section III.G.

9A.6.16.2 Shutdown Method

Shutdown Method I or II can be used following a fire in this area.

9A.6.17 MISCELLANEOUS AREAS, NO FIRE AREA DESIGNATION

The remaining intake structure fire area is an unoccupied area. This area does not contain any safe shutdown equipment or cable. The other miscellaneous buildings throughout the site each form their own fire area, except the fire water pump house. The fire water pump house is separated into two fire areas. There are no safe shutdown equipment or cables in these areas.

9A.7 WALKDOWN VERIFICATION

A walkdown was performed by personnel knowledgeable in fire protection and nuclear safety after a significant portion of the HCGS plant features and equipment had been completed. The purpose of this walkdown was to verify compliance to Appendix R commitments and make necessary enhancements.

9A.8. FIREPROOFING PROGRAM

9A.8.1 Steel Supporting BTP 9.5-1 Fire Barriers

Structural steel forming a part of or supporting BTP 9.5-1 required fire barriers are reviewed to determine the requirement for fireproofing. An analysis of beam and column temperatures due to a fire involving in situ combustibles is performed. The analyses are performed by Professional Loss Control, Inc., (PLC) or equivalent using a methodology, computer program and acceptance criteria reviewed and accepted on the Limerick Generating Station docket.

Areas with obviously negligible combustible loading such as abandoned, unoccupied Unit 2 areas, will not be fireproofed based on the lack of a threat to the structural steel load carrying capability. This is only applied to BTP barriers that are not Safe Shutdown Divisional Separation Barriers.

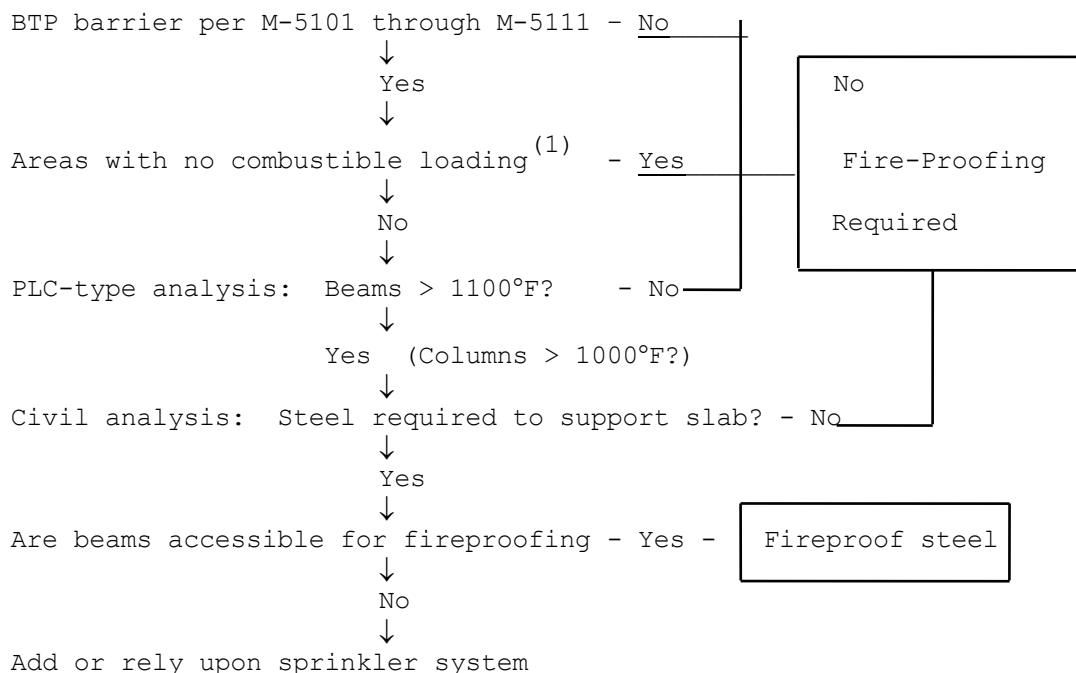
Support steel which exceeds 1100°F (1000°F for columns) is assumed to carry no load. Based on this assumption the structural capability of the fire barrier is determined assuming support by the remaining support steel, if any, and a room temperature as determined by the PLC analysis. The results of this analysis will determine those structural steel components required to be protected in order to support the fire barrier. No credit is taken for manual firefighting in reducing fire temperatures or duration. Beams (or columns) thus identified are fireproofed or if fireproofing is not possible, an automatic suppression system is relied on.

9A.8.2 Steel Not Supporting BTP 9.5-1 Fire Barriers

For steel that does not support BTP 9.5-1 fire barriers, the fire brigade action is assumed to reduce both the duration and temperature of a postulated fire. In addition, the fire is assumed to affect equipment or circuits on the floor above the fire. No fireproofing is provided on these barriers, which are rated primarily for code and insurance purposes.

9A.8.3 Fireproofing Flow Chart

The fireproofing flow chart presented below reiterates the program presented in Sections 9A.8.1 and 9A.8.2.



- (1) This step is not applicable to Safe Shutdown Divisional Separation Barriers.

9A.8.4 Fireproofing Program Results

Architectural Drawings A-0241-0 through A-0248-0 categorize the fireproofing, or lack thereof, in rooms that contain exposed structural steel which supports BTP CMEB 9.5-1 fire barriers as follows:

- a. Room contains steel not fireproofed or partially fireproofed because of a PLC analysis.
- b. Room contains steel not fireproofed or partially fireproofed because of a civil/structural analysis.
- c. Room contains steel not fireproofed because of a combination of PLC and civil/structural analyses.
- d. Room contains steel not fireproofed because of inaccessibility and an automatic suppression system is relied on.
- e. Room with steel fireproofed (complies with BTP).

In addition, rooms containing negligible combustible loading will not have exposed structural steel fireproofed. For example, an unoccupied or abandoned Unit 2 area, or a stairwell, would fit into this category. This only applies to barriers which do not separate safe shutdown divisions.

All other rooms not categorized on the Drawings do not support BTP fire barriers and do not require fireproofing.

9A.8.5 The Drawings described in 9A.8.4 show deviations from the BTP. Individual deviations are not repeated in the specific fire areas deviation (exemption) requests.

Comparison of HCGS to NRC Generic Letter 81-12
With Clarification Dated March 25, 1982

Request for additional information concerning design modification to meet the requirements of Section III.G.3 of Appendix "R".

1. Identify those areas of the plant that will not meet the requirements of Section III.G.2 of Appendix R and either alternative shutdown or an exemption from the requirements of Section III.G.2 of Appendix R will be provided. Additionally, provide a statement that all other areas of the plant are or will be in compliance with Section III.G.2 of Appendix R.

Response:

Section 9A.6. identifies all fire areas for which a deviation from Appendix R, Section III.G.2 or III.G.3 are requested. All other areas of the plant are or will be in compliance with Section III.G.2 of Appendix R.

Section 9A.6. also provides a fire hazard analysis justifying the alternative fire protection configuration.

TABLE 1

FIRE AREA FOR WHICH ALTERNATE SHUTDOWN IS USED AND COMPLIANCE
WITH APPENDIX R, SECTION, III.G.3 OR DEVIATIONS REQUESTED

<u>Fire Area</u>	<u>Description</u>	<u>Meets III.G.3</u>	<u>Deviations Requested</u>	<u>Suppression Deviation Only</u>
CD16	Cable spreading room	Yes	No	NA
CD26	Control equipment room	No	Yes	Yes
CD35	Control equipment room mezz.	Yes	No	NA
CD46	Main control room	No	Yes	Yes
CD61	Class 1E panel room	No	Yes	Yes
CD60	1E panel room HVAC	No	Yes	Yes
CD84	Diesel Area HVAC	No	Yes	No

For each of those fire areas of the plant requiring an alternative shutdown system(s), provide a complete set of responses to the following requests for each fire area:

Response:

Table 1 lists those fire areas for which alternate shutdown is used and whether it complies with III.G.3 or whether a deviation has been requested in 9A.6.0 from III.G.3 requirements.

1.a. List the system(s), or portions thereof, used to provide the shutdown capability with the loss of offsite power.

Response:

Shutdown using the RSF involves the same equipment as a shutdown from the main control room, with the exception that only the mechanical safe shutdown Division II equipment is used. Transfer switches at the RSF provide isolation for control from the main control room, cable spreading room, and control equipment rooms. Instrumentation located in the remote shutdown facility is independent of the main control room.

The following systems are used to provide shutdown capability with the loss of offsite power (LOP):

SYSTEM

Residual Heat Removal (RHR)
Safety Auxiliaries Cooling (SACS)
Reactor Core Isolation Cooling (RCIC)
Station Service Water (SSWS)
Standby Diesel Generator (SDG)
Reactor Vessel Instrumentation
Main Steam Safety/Relief Valves (SRV)
Ventilation Support Systems

1.b. For those systems identified in 1a., for which alternative or dedicated shutdown capability must be provided, list the equipment and components of the normal shutdown system in the fire area and identify the functions of the circuits of the normal shutdown system in the fire area (power to what equipment, control of what components and instrumentation). Describe the system(s) or portions thereof used to provide the alternative shutdown capability for the fire area and provide a table that lists the equipment and components of the alternative shutdown system for the fire area.

Response:

Equipment and components, including circuits of the normal shutdown systems for which alternative shutdown capability is provided, are listed on the fire hazard analysis tabulation sheets. The equipment is limited to control and instrumentation panels and control cables. There is no communication either mechanical or electrical between systems controlled from the RSF and any of the fire zones for which alternative shutdown capability is provided.

1.b.1 For each alternative system, identify the function of the new circuits being provided. Identify the location (fire zone) of the alternative shutdown equipment and/or circuits that bypass the fire area, and verify that the alternative shutdown equipment and/or circuits are separated from the fire area in accordance with Section III.G.2.

Response:

The RSF provides isolation for safe shutdown control circuits from the areas requiring alternate shutdown. No new circuits are provided. The control cable routing from the fire areas for which alternative shutdown is provided is to the RSF panel (transfer switches), and then to the hot and cold shutdown equipment. The fire area for the RSF is AB4. Once the transfer switches on the RSF panel 10C399 are moved to the emergency position, the circuits

terminate at the panel and are no longer connected to the fire areas for which alternative shutdown is provided. The circuits from the remote shutdown panel to the hot and cold shutdown equipment have III.G.2 separation from the fire area.

1.c. Provide drawings of the alternative shutdown system(s) which highlight any connections to the normal shutdown systems (P&IDs for piping and components, elementary wiring diagrams of electrical cabling). Show the electrical location of all breakers for power cables, and isolation devices for control and instrumentation circuits for the alternative shutdown systems for that fire area.

Response:

P&IDs that show the control and instrumentation connections from the normal shutdown systems to the RSF panel 10C399 are as follows:

FSAR		
Figure		
<u>Number</u>	<u>P&ID</u>	<u>Title</u>
9.2-13	M-08-1	Condensate and refueling water storage
Sh 1 of 2		and transfer
9.2-2	M-10-1	Service water
9.2-3		
9.2-4	M-11-1	Safety auxiliaries cooling Reactor Bldg
Sh 1 of 3		
5.1-3	M-41-1	Nuclear boiler
Sh 1 of 2		
Sh 2 of 2		
5.1-4	M-42-1	Nuclear boiler vessel instrumentation
Sh 1 of 2		
5.4.1-2	M-43-1	Reactor Recirculation System
Sh 1 of 2		
5.4.6-1	M-49-1	Reactor core isolation cooling
5.4.6-2	M-50-1	RCIC pump turbine

FSAR

Figure

<u>Number</u>	<u>P&ID</u>	<u>Title</u>
5.4-13	M-51-1	Residual heat removal
Sh 2 of 2		
9.4-4	M-83-1	Reactor Building Supply Control System
9.4-5	M-84-1	Reactor Building Exhaust Control System
9.2-15	M-90-1	Chilled Water System-control area
Sh 2 of 3		
Sh 3 of 3		

There are no circuit breakers for power cable in fire zones for which alternatives shutdown is required. Therefore, no location drawings are provided.

Isolation devices for remote shutdown panel control circuits are shown on the following drawings:

	<u>Drawing</u>	<u>FSAR Figure</u>
1. RSP scheme dwg index	E-6604-0, Sh 1	9A-1
2. RSP elect schematic details	E-6604-0, Sh 3	9A-2
3. RSP elect schematic details	E-6604-0, Sh 4	9A-3

Typical electrical schematic drawings for remote shutdown panel 10C-399 devices are as follows:

	<u>Drawing</u>	<u>FSAR Figure</u>
1. SACS pump BP210	E-0217, Sh 5&6	9A-4
2. SACS isolation valve HV 2520B (to RHR pump)	E-0219, Sh 2	9A-5
3. RSP transfer switch contact use	E-6603-0	9A-6
4. Standby diesel generator circuit breaker indicating light	E-0085-0	9A-7

1.d. Verify that changes to safety systems will not degrade safety systems; (e.g., new isolation switches and control switches should meet design criteria and standards in the FSAR for electrical equipment in the system that the switch is to be installed; cabinets that the switches are to be mounted in should also meet the same criteria (FSAR) as other safety-related cabinets and panels; to avoid inadvertent isolation from the control room, the isolation switches should be keylocked or alarmed in the control room if in the "local" or "isolated" position; periodic checks should be made to verify that the switch is in the proper position for normal operation; and a single transfer switch or other new device should not be a source of a failure which cause loss of redundant safety systems).

Response:

Remote shutdown electrical equipment and controls are Class 1E and Seismic Category I unless otherwise stated. No changes to safety systems were made to satisfy Appendix R rules.

The RSF is capable of operating independently of the equipment in the main control room, cable spreading room, or control equipment rooms. Electrical faults in these areas will not interact with the RSF operation.

Transfer devices for the RSF conform to the following requirements:

1. Operation of any transfer device will cause an alarm in the main control room. However, faults in the alarm circuit will not affect the RSF operation.
2. Indication in the control room will be available to determine when the transfer of controls is switched to the RSF.
3. Manual control of the plant from the RSF will not be possible unless the transfer devices are operated.
4. The access to the transfer devices and their operations will be controlled to prevent unauthorized use of the controls. During power failure, access to the room is by the use of a key.

1.e. Verify that licensee procedures have been or will be developed that describes the tasks to be performed to affect the shutdown method. Provide a summary of these procedures outlining operator actions.

Response:

Procedures describing the tasks to be performed to affect the alternate shutdown methods are in the plant operating procedures.

A summary of the procedures for shutdowns from the RSF is presented below.

SUMMARY OF REACTOR SHUTDOWN FROM REMOTE SHUTDOWN FACILITY

1.e.1 Hot Shutdown

The reactor hot shutdown sequence described below is for hazardous events, such as a fire that may render the equipment in the MCR, CSR and CER inoperable and thereby prevent a safe shutdown from the MCR.

1.e.1.1 Operator activates the RPS Mode Switch at the MCR as (s)he leaves the control room or scrams the reactor from remote locations.

1.e.1.2 After the reactor is scrammed, operator proceeds to the RSF to manually operate all transfer switches on panel 10C399. Systems controlled from the RSF are completely isolated from MCR, CER and CSR.

1.e.1.2.a If the reactor was not scrammed and the MSIVs are still open, the operator will scram the plant by de-energizing the RPS busses, and close the MSIVs by de-energizing the RPS power distribution circuit breakers.

1.e.1.2.b The operator monitors Reactor Vessel Level at the RSP and if the rate of rise of RPV level indicates that HPCI is injecting, prior to exceeding the high level trip (level 8) the operator will trip HPCI by opening the circuit breaker at the 125V distribution panel AD417.

1.e.1.2.c If High Pressure Coolant Injection (HPCI) system fails to trip on reactor high level, the reactor level will rise and water will reach main steam line nozzels and fill the main steam lines and RCIC steam line. HPCI is manually tripped. Water starts to drain through HPCI and RCIC drain lines when their respective drain pot levels reach their set-points. When the CRD pump continues to inject water in the reactor vessel, the RCIC steam line is drained before the RCIC system auto-starts on level 2. When CRD pumps are not available, the reactor level may drop to level 2 and automatically start the RCIC system before the RCIC steam line is completely drained and the left-over water would be injected into the RCIC turbine.

1.e.1.3 The operator starts the RCIC & RHR systems from the panel to proceed with hot shutdown. The main steam line safety/relief valves are operated from the panel to maintain desired steam pressure in the reactor.

1.e.1.4 While actuating relief valves, reactor level, reactor pressure, suppression pool temperature and suppression pool level are monitored. The reactor cooldown rate is controlled in accordance with limits given in the technical specification. Reactor temperature is determined from reactor pressure and steam tables which are located in the RSF.

1.e.1.5 The RHR system, with one pump and one heat exchanger, and the associated SACS and SSWS are used to cool the suppression pool.

1.e.1.6 If the offsite power is affected, the above procedure is modified as follows:

1.e.1.7 The diesel generators will start automatically upon loss of offsite power. The diesel generator circuit breaker "closed" indicating lights at the RSF give the operator a positive indication that all Class 1E buses are energized. If automatic starting of the diesels did not occur they can be manually started by operator action at the diesel control panels located at Elevation 130 ft in the diesel area of the auxiliary building.

1.e.2. Cold Shutdown

The reactor is assumed to be in the hot standby condition with the nominal water pressure and temperature maintained at approximately 1000 psig and 540°F, respectively. To bring the reactor to cold shutdown condition the operator performs the following operation.

1.e.2.1 Starts reducing reactor pressure by manually actuating two main steam line safety/relief valves. RCIC system flow is adjusted to keep the reactor level above low level alarm point. The reactor cooldown rate shall not exceed Technical Specification limit. RCIC system is secured when the reactor pressure reaches approximately 100 psig.

1.e.2.2 When the reactor pressure is reduced below a nominal 100 psig, the RHR system operation is switched from suppression pool cooling mode to reactor shutdown cooling mode by the following:

- a. Under normal conditions, prior to cold shutdown, the RHR system is flushed by taking water from the condensate transfer system and discharging existing water to the Liquid Radwaste System.

This procedure requires operation of valves in the RHR pump room and can be accomplished if

the situation permits, alternately the flushing can be accomplished while performing the warmup in step b.

- b. RHR system valves are aligned so that the RHR piping can be warmed by taking water from the reactor (through Reactor Recirculation Water System) and pumping to the radwaste system.
- c. Later the RHR system valves are aligned to circulate reactor water through RHR heat exchanger thus dissipating decayed heat generated in the reactor.

1.e.2.3 If the offsite power is lost, RHR shutdown cooling is isolated from the reactor vessel and the above procedure in 1.e.2.2 is modified as follows: When the reactor pressure is reduced to below a nominal 100 psig, the alternate shutdown cooling mode described in Section 15.2.9 is used in lieu of RHR shutdown cooling. The alternate shutdown cooling mode uses Core Spray or LPCI mode of RHR to fill up the reactor until the steam lines are flooded. With one or more SRVs open, water flows out the relief valve and back to the suppression pool. RHR suppression pool cooling mode cools the suppression pool as before.

1.f. Verify that the manpower required to perform the shutdown functions using the procedures of e. as well as to provide fire brigade members to fight the fire is available as required by the fire brigade technical specifications.

Response:

Manpower will be available to perform the shutdown functions as well as to fight any fire.

1.g. Provide a commitment to perform adequate acceptance tests of the alternative shutdown capability. These tests should verify that: equipment operated from the local control station when the transfer or isolation switch is placed in the "local" position and that the equipment cannot be operated from the control room; and that equipment operates from the control room but cannot be operated at the local control station when the transfer isolation switch is in the "remote" position.

Response:

Testing will be done during startup to verify operation and isolation of the equipment used for alternate shutdowns.

1.h. Provide Technical Specifications of the surveillance requirements and limiting conditions for operation for that equipment not already covered by existing Technical Specifications. For example, if new isolation and control switches are added to a shutdown system, the existing Technical Specification surveillance requirements should be supplemented to verify system/equipment functions from the alternate shutdown station at testing intervals consistent with the guidelines of Regulatory Guide 1.22 and IEEE-338. Credit may be taken for other existing tests using group overlap test concepts.

Response:

Surveillance requirements and limiting conditions for operation are provided in Hope Creek Technical Requirements Manual (HC-TRM).

1.i. For new equipment comprising the alternate shutdown capability, verify that the systems available are adequate to perform the necessary shutdown function. The functions required should be based on previous analyses, if possible (e.g., in the FSAR), such as a loss of normal ac power or shutdown on Group 1 isolation (BWR). The equipment required for the alternative capability should be the same or equivalent to that relied on in the above analysis.

Response:

The equipment comprising the alternative shutdown capability is our original design and has had the same analysis as other equipment commensurate with its safe shutdown function.

The shutdown functions required are listed below:

1. Sufficient capability will be provided at the RSP to bring the plant to cold shutdown.

2. The system will provide capabilities to achieve hot shutdown after sustaining a single failure, as described in NRC Standard Review Plan 7.4-III, during Category 1 events.
3. Category 1 events include all events which may cause evacuation of the main control room without damage to the equipment located at the main control room and control equipment room.

Category 2 events include such hazards as a fire that may render the equipment in the main control room, CSR, and CER inoperable and thereby prevent a safe shutdown from the MCR.

In the event that offsite power is lost, the standby diesel generators (SDGs) will start automatically. They can also be started manually from the local diesel generator diesel panel, at Elevation 130 in the diesel area of the Auxiliary Building, by operator action.

The application of single failure criteria during Category 2 events considers the first failure as the malfunction of any or all ECCS automatic control capabilities located in the MCR. No additional failures, of the components or the equipment within the RSF, are postulated.

1.j. Verify that repair procedures for cold shutdown systems are developed and material for repairs is maintained on site. Provide a summary of these procedures and a list of the material needed for repairs.

Response:

In the unlikely event that fire induced damage affects all 14 Safety Relief Valves, repair actions are implemented as part of the cold shutdown strategy to repair and provide the capability to manually operate SRVs and ensure the ability to depressurize the plant to the point for shutdown cooling operation. TSC Assist Guidelines Procedure provides steps to determine the extent of fire damage and the required repair actions. This procedure also identifies the required equipment and material that is maintained and available.

Item 2, Associated Circuits of Concern

The following defines the three types of associated circuits considered in the overall review.

- a. Type A associated circuits of concern are those circuits which have physical separation less than that required by Section III.G.2 of Appendix R and a common power source with the shutdown equipment (redundant or alternative) and the power source is not electrically protected from the circuit of concern by coordinated breakers, fuses, or similar devices.
- b. Type B associated circuits of concern are those circuits which have a physical separation less than that required by Section III.G.2 of Appendix R and a connection to circuits of equipment whose spurious operation would adversely affect the shutdown capability (e.g., RHR/RCS isolation valves, ADS valves, instrumentation, etc).
- c. Type C associated circuits of concern are those circuits which have a physical separation less than that required by Section III.G.2 of Appendix R and a common enclosure (e.g., raceway, panel, junction) with the shutdown cables (redundant and alternative) and,
 - 1. are not electrically protected by circuit breakers, fuses or similar devices, or
 - 2. will allow propagation of the fire into the common enclosure.

FIRE AREA APPROACH

For each fire area where an alternative or dedicated shutdown method, in accordance with Section III.G.3 of Appendix R is provided, the following information is required to demonstrate that associated circuits will not prevent operation or cause maloperation of the alternative or dedicated shutdown method:

1a. Provide a table that lists all the power cables in the fire area that connect to the same power supply of the alternative or dedicated shutdown method and the function of each power cable listed (i.e., power for RHR pump).

Response:

There are no safe shutdown power cables in the fire areas for which alternative shutdown is provided. The cables in these areas are either control or instrumentation. Therefore, a table is not included.

1b. Provide a table that lists all the cables in the fire area that were considered for possible spurious operation which would adversely affect shutdown and the function of each cable listed.

Response:

HCGS maintains Appendix R separation between the two shutdown trains. If a fire occurs in the first train, safe shutdown Division I, the second train, safe shutdown Division II, is fully capable of cold shutdown, independent and unaffected by any damage, maloperation or spurious operations in the first train. Similarly, if a fire occurs in the second train, the first train is fully capable of cold shutdown. The only common juncture between the two shutdown trains are the control areas listed in Item 1 of these responses. If a fire occurs in these areas, transfer switches located at the RSF will isolate the second shutdown train from any damage upstream of these switches;

therefore, maintaining independence of the second shutdown division. The only cables which were identified to possibly affect safe shutdown using Division II is a lineup of the Division I HPCI which transfers suppression pool water through the test return line to the Condensate Storage Tank. No one spurious actuation or signal could provide the concurrent opening of the three valves. There are no Division II spurious operations which were found to affect Division I safe shutdown.

Spurious operation of Division I HPCI valves could transfer suppression pool water through the Test Return Line to the condensate Storage Tank. However, control has been provided on the MCC for valve 1BJHV-F008, HPCI Test Bypass to CST Valve, to stop the transfer of suppression pool water to the Condensate Storage Tank.

1c. Provide a table that lists all the cables in the fire area that share a common enclosure with circuits of the alternative or dedicated shutdown systems and the function of each cable listed.

Response:

There are no circuits in the fire areas for which alternate shutdown is provided that share a common enclosure with circuits of the alternative shutdown system. The circuits of the alternative shutdown system can be isolated from the fire area by transfer switches located at the RSF.

1d. Show that fire induced failures (hot shorts, open circuits or shorts to ground) of each of the cables listed in a, b, and c will not prevent operation or cause maloperation of the alternative or dedicated shutdown method.

Response:

Transfer switches are provided in the RSF to isolate circuits in the fire areas for which alternative shutdown has been provided. Therefore, since the circuits required to shut down the plant are isolated through transfer switches, a fire in the areas for which alternative shutdown is provided will not prevent operation or cause maloperation of the alternate shutdown method. In addition, coordinated protective devices are provided on all associated circuits within the fire areas.

1e. For each cable listed in a, b, and c where new electrical isolation has been provided, or modification to existing electrical isolation has been made, provide detailed electrical schematic drawings that show how each cable is isolated from the fire area.

Response:

Neither new electrical isolation has been provided nor existing electrical isolation equipment or components have been modified. Therefore, no electrical schematics are included.

2a. Identify each high-low pressure interface that uses redundant electrically controlled devices (such as two series motor operated valves) to isolate or preclude rupture of any primary coolant boundary.

Response:

The high-low pressure interfaces which use redundant electrically controlled devices to isolate the primary coolant boundaries are as follows:

1. RHR Suction Valves

BC-HV-F008

BC-HV-F009

2b. For each set of redundant valves identified in a., verify the redundant cabling (power and control) have adequate physical separation as required by Section III.G.2 of Appendix R.

Response:

The required Appendix R, Section III.G.2, separation of the cabling for the above listed sets of valves cannot be provided. The control wiring for each set of valves is separated using modified Regulatory Guide 1.75 separation in the remote shutdown panel, 10C399 and also in the main control room panel.

2c. For each case where adequate separation is not provided, show that fire induced failures (hot shorts, open circuits, or shorts to ground) of the cables will not cause maloperation and result in a LOCA.

Response:

The RHR shutdown cooling suction isolation valves BC-HV-F008 and BC-HV-F009 are normally closed with power connected to both valves. The control circuit for the outboard isolation valve BC-HV-F008 is equipped with a lock switch located on the associated MCC bucket 52-242082 which is placed in the DISARM position during the normal plant operation. This key lock switch when placed in the DISARM position ensures that fire induced circuit failure will not cause spurious operation and that the valve will remain in the closed position. Based on circuit analysis performed and location of cable routing, there is no single fire area in which both valves can spuriously open due to fire induced circuit failures.

TABLE 9A-1

FIRE HAZARD ANALYSIS SUMMARY

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
Auxiliary Building Radwaste Area							
054-0	3101	Waste surge tank room	None	None	None	None	H ₂ O hose
054-0	3102	Waste surge pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3103	Floor drain sample tank rm	None	None	None	None	H ₂ O hose
054-0	3104	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3105	Floor drain sample tank rm	None	None	None	None	H ₂ O hose
054-0	3107	Waste sample tank room	None	None	None	None	H ₂ O hose
054-0	3108	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3109	Waste sample tank room	None	None	None	None	H ₂ O hose
054-0	3110	See 5106					
054-0	3112	Sump room	None	None	None	None	H ₂ O hose Port ext
054-0	3113	Waste collector tank room	None	None	None	None	H ₂ O hose
054-0	3114	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3115	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3116	Waste collector tank room	None	None	None	None	H ₂ O hose
054-0	3117	Tank vent filter unit room	Charcoal	162 lb	3500	Heat act in filter unit	Auto water spray H ₂ O hose Port ext
054-0	3118	Concentrated waste tank room	None	None	None	None	H ₂ O hose

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
054-0	3119	Concentrated waste tank room	None	None	None	None	H ₂ O hose
054-0	3120	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3121	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3122	Waste neutralizer tank room	None	None	None	None	H ₂ O hose
054-0	3123	Waste neutralizer tank room	None	None	None	None	H ₂ O hose Port ext
054-0	3124	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3125	Work area	None	None	None	None	H ₂ O hose Port ext
054-0	3126	Work area	None	None	None	None	H ₂ O hose Port ext
054-0	3127, 3111, 3106	Corridors	Cable insul	9,444 lb	18,000	Ionizat None in 3106	H ₂ O hose Port ext
054-0	3128	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3129	Cleanup phase separator room	None	None	None	None	H ₂ O hose
054-0	3130	Cleanup phase separator room	None	None	None	None	H ₂ O hose
054-0	3131	Vestibule	None	None	None	None	H ₂ O hose Port ext
054-0	3132	Spent resin tank room	None	None	None	None	H ₂ O hose Port ext
054-0	3133	Pump room	None	None	None	None	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
054-0	3134	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3135	Waste sludge phase separator room	None	None	None	None	H ₂ O hose
054-0	3136	Floor drain collector tank room	None	None	None	None	H ₂ O hose
054-0	3137	Floor drain collector tank room	None	None	None	None	H ₂ O hose
054-0	3138	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3139	Detergent drain filter room	None	None	None	None	H ₂ O hose
054-0	3140	Vestibule	None	None	None	None	H ₂ O hose Port ext
054-0	3141	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3142	Detergent drain tank room	None	None	None	None	H ₂ O hose
054-0	3143	Sump room	None	None	None	None	H ₂ O hose Port ext
054-0	3144, 3154	Corridors	Cable insul	12,970 lb	21,500	Ionizat	H ₂ O hose Port ext
054-0	3145	R/W Resin holding tank room	None	None	None	None	H ₂ O hose
054-0	3146	R/W regeneration vessel room	None	None	None	None	H ₂ O hose
054-0	3147	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3148	Decon solution concentrated waste tank room	None	None	None	None	H ₂ O hose
054-0	3149	Condensate return unit room	None	None	None	None	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

<u>Elev ft-in.</u>	<u>Room</u>	<u>Room Description and Safe Shutdown Equip and Cable</u>	<u>Hazard</u>		<u>Fire Load Btu/ft²</u>	<u>Detection</u>	<u>Suppression</u>
			<u>Material</u>	<u>Quantity</u>			
054-0	3150	Chemical waste tank rm	None	None	None	None	H ₂ O hose
054-0	3151	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3152	H&V equip room	None	None	None	None	H ₂ O hose Port ext
054-0	3153	Tank vent filter unit rm	Charcoal	162 lb	4000	Heat act in filter unit	Auto water spray in filter unit H ₂ O hose Port ext
054-0	3155	Charcoal filter tank area	Charcoal	193,200lb	2.37 x 10 ⁶	None	
054-0	3156	HVAC room	None	None	None	None	H ₂ O hose Port ext
054-0	3157	Corridor	None	None	None	Ionizat	H ₂ O hose Port ext
054-0	3158	HVAC room	None	None	None	None	H ₂ O hose Port ext
054-0	3159	Valve gallery	Asphalt in pipe	90 lb	None	None	H ₂ O hose
054-0	3159-1	Charcoal filter tank area	Charcoal	128,800	1.58x10 ⁶	None	H ₂ O hose
			Asphalt in pipe	370 lb	None		
054-0	3160	Refrigeration area	Asphalt in pipe	310 lb	None	None	H ₂ O hose Port ext
054-0	3160-1	Valve gallery	None	None	None	None	H ₂ O hose
054-0	3160-2	Guard bed filter area	Charcoal	200 lb	2300	None	H ₂ O hose
054-0	3160-3	Cooler condenser area	None	None	None	None	H ₂ O hose
054-0	3160-4	HEPA filter area	None	None	None	None	H ₂ O hose

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TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
075-0	3160-5	Charcoal regeneration mezzanine	Asphalt in pipe	320 lb	None	None	H ₂ O hose
054-0	3161	HVAC room	None	None	None	None	H ₂ O hose Port ext
054-0	3163	Hatchway area	None	None	None	None	H ₂ O hose Port ext
054-0	3166	Tank vent panel area	None	None	None	None	H ₂ O hose
	3166-2 3166-3	Analyses panel room					Port ext
054-0	3167	Primary recomb room	None	None	None	None	H ₂ O hose
067-3	3167-1	Primary recomb valve maintenance area	None	None	None	None	H ₂ O hose
054-0	3168	Primary recomb room	None	None	None	None	H ₂ O hose
067-3	3168-1	Primary recomb valve maintenance area	None	None	None	None	H ₂ O hose
054-0	3169, 3162	Corridors	Cable insul Asphalt in pipe	17,355lb 270 lb	17,500 None	Ionizat	H ₂ O hose Port ext
054-0	3170	Sumps & pumps room	None	None	None	None	H ₂ O hose Port ext
054-0	3171	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3172	Waste evaporator condenser room	None	None	None	None	H ₂ O hose
054-0	3173	Pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3174	Waste evaporator condenser room	None	None	None	None	H ₂ O hose

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
054-0	3175	Decontam solution concentrator room	None	None	None	None	H ₂ O hose
054-0	3176	Decontam solution pump room	None	None	None	None	H ₂ O hose Port ext
054-0	3177	Vestibule	None	None	None	None	H ₂ O hose Port ext
082-0	3178	Valve area	None	None	None	None	H ₂ O hose
082-0	3179	Unoccupied space	None	None	None	None	H ₂ O hose
075-0	3180	Pipeway	Asphalt in pipe	260 lb	None	None	None
082-0	3181	Off-gas holdup pipe area	None	None	None	None	None
082-0	3182	Unoccupied space	None	None	None	None	None
082-0	3183	Vestibule	None	None	None	None	H ₂ O hose
075-0	3184	Vestibule	Cable insul	1516 lb	72,900	None	H ₂ O hose Port ext
069-0	3185	Pipeway	None	None	None	None	None
066-0	3186	Pipeway	None	None	None	None	None
075-0	3187	Pipeway	None	None	None	None	None
075-0	3188	Vestibule	None	None	None	None	Port ext
075-0	3189	Pipeway	None	None	None	None	None
065-0	3190	Pipeway	None	None	None	None	None
068-6	3191	Recycle & concentrated waste pumps room	None	None	None	None	Port ext
068-6	3192	Waste evaporator room	None	None	None	None	Port ext
069-2	3193	Heating element room	None	None	None	None	Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
068-6	3194	Waste evaporator room	None	None	None	None	Port ext
069-2	3195	Heating element room	None	None	None	None	Port ext
068-6	3196	Recycle & concentrated waste pumps room	None	None	None	None	Port ext
075-0	3197	Radwaste regenerator system control panel room	None	None	None	None	Port ext
082-0	3198	Vial sampler area	None	None	None	None	H O hose 2
082-0	3199	Unoccupied space	None	None	None	None	H O hose 2
087-0	3201	Cable tray area	Cable insul	42,118 lb	21,500	Ionizat	H O hose 2 Port ext
087-0	3202	Store room	Cable insul Other insitu Transient Total	1,868 lb	4,458 7,475 83,532 95,465	None	Auto-wet sprinkler sys H O hose 2 Port ext
087-0	3203	Corridor	None	None	None	None	H O hose 2
077-0	3204	See 5207					
087-0	3205	Battery room	Battery case, covers	120 lb	20,000	Ionizat	H O hose 2 Port ext
087-0	3206	Emergency shower area	None	None	None	None	H O hose 2 Port ext
087-0	3207	Battery charger room	None	None	None	Ionizat	H O hose 2 Port ext
087-0	3208	Cable tray area	Cable insul	56,319 lb	59,120	Ionizat	H O hose 2 Port ext
087-0	3209	Corridor	None	None	None	None	H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
087-0	3210	Vestibule	None	None	None	None	H O hose 2 Port ext
087-0	3211	Cable tray area	Cable insul	36,411 lb	27,500	Ionizat	H O hose 2 Port ext
077-0	3215	Electrical access area	None	None	None	Ionizat	H O hose 2
087-0	3216	Foyer	None	None	None	None	H O hose 2 Port ext
087-0	3217	Elevator machine room	Lube oil Transient lube oil	3 gal. 3 gal.	1000	None	Auto-wet sprinkler sys H O hose 2 Port ext
087-0	3218	Hatchway area	None	None	None	None	H O hose 2 Port ext
087-0	3219	Cable tray area	Cable insul	63,802 lb	57,758	Ionizat	H O hose 2 Port ext
087-0	3220	Oil interceptor room	None	None	None	None	Auto-wet sprinkler sys H O hose 2 Port ext
087-0	3221	Cable tray area	Cable insul	5535 lb	24,300	None	H O hose 2 Port ext
087-0	3222	Vestibule	None	None	None	None	H O hose 2 Port ext
102-0	3301	Vestibule	Cable insul	4501 lb	66,386	Ionizat	H O hose 2 Port ext
102-0	3301A	Entry	None	None	None	Thermal	H O hose 2 Port ext
102-0	3302	Corridor	Cable insul	7220 lb	54,042	Ionizat	H O hose 2 Port ext

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TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	3303	Men's toilet	Cable insul	1982 lb	41,639	Ionizat	H ₂ O hose Port ext
102-0	3304	Janitor's room	Cable insul	472 lb	64,898	Ionizat	H ₂ O hose Port ext
			Paper	500 lb			
102-0	3305	Unrestricted machine shop	None	None	None	Ionizat Photo-el	Auto-wet sprinkler sys H ₂ O hose Port ext
102-0	3306	Connecting corridor	None	None	None	Ionizat Photo-el	Auto-wet sprinkler sys H ₂ O hose Port ext
102-0	3307	Maintenance office	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose Port ext
110-8	3308	Storeroom	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose Port ext
102-0	3309	Restricted machine shop	Cable insul	1451 lb	2,000	Ionizat Photo-el	Auto-wet sprinkler sys
			Hydraulic Oil	0.87 gal.	139,200		H ₂ O hose Port ext
102-0	3310	Office	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose Port ext
102-0	3311, 3312	Decontamination room & Foyer	None	None	None	Ionizat Photo-el	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	3313	Lobby	None	None	None	Ionizat	H ₂ O hose Port ext
102-0	3314	See 5301					
102-0	3315	Passageway	None	None	None	None	H ₂ O hose Port ext
102-0	3316	Tank area	None	None	None	Ionizat	H ₂ O hose Port ext
102-0	3317	Fuel pool filter room	None	None	None	None	None
102-0	3318	Fuel pool filter room	None	None	None	None	None
102-0	3319	Fuel pool filter room	None	None	None	None	None
102-0	3320	Floor drain filter room	None	None	None	None	None
102-0	3321	Floor drain demineralizer room	None	None	None	None	None
102-0	3322	Waste demineralizer room	None	None	None	None	None
102-0	3323	Waste filter room	None	None	None	None	None
102-0	3324	Fuel pool filter holding pumps room	None	None	None	None	H ₂ O hose Port ext
102-0	3325	Pump room	None	None	None	None	H ₂ O hose Port ext
102-0	3326	Pump room	None	None	None	None	H ₂ O hose Port ext
102-0	3328,	Corridor and Electrical equip-	Cable	7940 lb	26,915	Ionizat	H ₂ O hose
	3329	ment area	insul			Photo-el	Port ext
102-0	3330	Equipment decontamination room	Cable insul	213 lb	1000	Ionizat Photo-el	H ₂ O hose Port ext
102-0	3331	Electrical penetration room	Cable insul	4811 lb	28,000	Ionizat Photo-el	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	3332, 3327	Drop area & Corridor	Cable insul Paper Plastic Dry Ion Resin Wood Cloth	6140 lb 3 lb 104 lb 3360 lb 1 lb 2 lb	39,556	Ionizat Photo-el	Port ext
102-0	3335, 3340	Corridor & Equipment access area	Cable insul	6851 lb	17,000	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
102-0	3336	Electrical access area	Cable insul	5219 lb	16,745	Ionizat	H O hose 2 Port ext
102-0	3342	Hot water heater room	Cable insul	3073 lb	70,482	Ionizat	H O hose 2 Port ext
102-0	3343	Radwaste control room	Cable insul	14,431 lb	35,000	Ionizat	H O hose 2 Port ext
102-0	3344	Dry radwaste storage area	Cable insul	6375 lb	24,000	Photo-el Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
102-0	3346	Corridor	Asphalt in pipe	20 lb	None	Photo-el Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
102-0	3347	Drum capper & seamer swipe sta. & conveyor area	Asphalt in open drums	2760 lb	105,000	Photo-el Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
102-0	3348	Radwaste loading area	Asphalt in sealed drums	2760 lb	None	None	Auto- preaction sprinkler sys H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	3349	Drum turntable area	Cotton	1,650 lb	157,143	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3350	Drum turntable area	Cotton	1,410 lb	151,920	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3351	Storage area	Cable insul	2460 lb	15,000	Photo-el Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3356	Asphalt metering pump & instrumentation area	Cable insul Asphalt in pipe Mineral oil	9102 lb 300 lb 42 gal	46,154 None	Photo-el Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3357	Extruder evaporator room	Asphalt in pipe	190 lb	None	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3358	Extruder manifold area	Asphalt in pipe	10 lb	None	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3359	Extruder evaporator room	Asphalt in pipe	10 lb	None	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	3360	Centrifuge feed tank recirc pump room	None	None	None	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3361	Centrifuge feed tank room	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3362	Cryst bottoms pump room	None	None	None	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3363	Cryst instr rack area	Cable insul	615 lb	25,000	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3364	Cryst. condensate skid area	Cable insul	615 lb	12,800	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3365	Cryst recirc pump sample skid area	Cable insul	615 lb	8,500	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
102-0	3366	Cryst bottoms tank room	None	None	None	Photo-el	Auto-wet sprinkler sys H ₂ O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	3367	Cryst recirc pump room	Cable insul	492 lb	11,700	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
111-0	3368	Drum mezzanine	None	None	None	None	Auto-wet sprinkler sys H O hose 2 Port ext
112-0	3369	Pump mezzanine	None	None	None	Photo-el	Auto-wet sprinkler sys H O hose 2 Port ext
124-0	3401	Vestibule	None	None	None	None	H O hose 2 Port ext
124-0	3402, 3405	Uncontrolled outage trade labor locker area & Corridor	None	None	None	Ionizat	H O hose 2 Port ext
124-0	3403	Telecommunications room	Cable insul.	58 lb	3,085	None	H O hose 2
124-0	3404	Electrical tray room	Cable insul insul	2069 lb	58,400	Ionizat	Port ext H O hose 2 Port ext
124-0	3406, 3407, 3408	Uncontrolled toilet, Showers & Drying area	Terreon	600 lb	13,678	None	H O hose 2 Port ext
124-0	3410, 3411, 3412	Showers, Drying area & Uncontrolled toilet Channel B&D	Terreon	495 lb	12,777	None	H O hose 2 Port ext
124-0	3413, 3409	Uncontrolled maint locker area & Corridor Channel B&D	None	None	None	Ionizat	H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
124-0	3414	Clean issue room Channel B&D	None	None	None	Ionizat	H ₂ O hose Port ext
124-0	3415 3434, 3416, 3437	Showers, Drying area & Disrobe area	None	None	None	None	H ₂ O hose Port ext
124-0	3418, 3419	Technicians' & Supervisors' offices	Cable Insul Paper Carpet	10 lb 100 lb 2062 lb	22,083	Ionizat	H ₂ O hose Port ext
124-0	3420	Calibration & Repair shop	Cable Insul	1 lb	8	Ionizat	H ₂ O hose Port ext
124-0	3421	Controlled hot chemical lab	Cable Insul	2 lb	7	Ionizat	H ₂ O hose Port ext
124-0	3423	Counting machine room	Cable Insul	2 lb	20	Ionizat	H ₂ O hose Port ext
124-0	3423A	Corridor	None	None	None	Ionizat	H ₂ O hose Port ext
124-0	3424	Chemistry storage room	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose Port ext
124-0	3425	See 5401					
124-0	3426	Unoccupied space	None	None	None	None	None
124-0	3427	Clean chemical lab	Cable Insul	2 lb	27	Ionizat	H ₂ O hose Port ext
124-0	3429	Technical nuclear shop	None	None	None	Ionizat	H ₂ O hose Port ext
124-0	3430	Controlled laundry storage room	Clothing, towels, etc	5600 lb	38,000	Ionizat	H ₂ O hose Port ext
124-0	3431	Wet & dry laundry room	None	None	None	Ionizat	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
124-0	3432	Auxiliary panel room	Plastic	1,018 lb	44,053	Ionizat	H O hose 2
			Rubber	12 lb			
			Cable	6,412 lb			
			insul				Port ext
124-0	3433	Vestibule	None	None	None	Ionizat	H O hose 2 Port ext
124-0	3435	Vestibule	None	None	None	None	H O hose 2 Port ext
124-0	3436,	Controlled corridor	Cable	2244 lb	13,000	Ionizat	H O hose 2
	3439	& Passageway	insul				Port ext
	For Passageway 3439 only		Paper	2920 lb	73,000		
			Plastic	600 lb	30,000		
124-0	3438	Controlled access area	None	None	None	Ionizat	H O hose 2 Port ext
124-0	3440	Passageway	None	None	None	None	H O hose 2 Port ext
124-0	3441,	Decontamination area	Cable	1942 lb	13,873	Ionizat	H O hose 2
	3445,	Access control area,	insul				Port ext
	3448,	Controlled corridor and	Plastic	401.2 lb			
	3451	Monitor area	Dress-out area				
			Misc.	-	45,743		
124-0	3442	Equipment removal area	None	None	None	Ionizat	H O hose 2
		Channel B&D					
124-0	3443,	Controlled corridor &	Cable	1392 lb	10,300	Ionizat	H O hose 2
	3444	Controlled locker area	insul				Port ext
		Channel B&D	Dress-out area				
			Misc.	-	36,117		
124-0	3446	Controlled toilet	None	None	None	Ionizat	H O hose 2 Port ext
124-0	3447	Respirators, canisters,	None	None	None	Ionizat	H O hose 2 Port ext
		& valve room					
124-0	3449	Auxiliary panel room	Cable	6,328	36,781	Ionizat	H O hose 2
			insul				Port ext
			wood	30.0 lb			
			plastic	33.0 lb			
124-0	3450	Unassigned	None	None	None	Ionizat	H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
124-0	3452, 3457, 3461 thru 3467	Centrifuge, Incinerator & Filter Area	None	None	None	Photo-el Ionizat	H ₂ O hose Port ext
124-0	3455	Filled drum storage area	Asphalt/ Waste in sealed drums	33,580lb	None	Heat Actuated sprinkler	Auto pre- action
124-0	3456	Filled drum storage area	Asphalt/ Waste in sealed drums	73,580lb	None	Heat Actuated sprinkler	Auto pre- action
124-0	3458 3459 3460	Heater, Cooler Rooms	None	None	None	Photo-el Ionizat	Auto-wet sprinkler sys H ₂ O hose Port ext
137-0	3501, 3502	Information area & Vestibule	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose Port ext
137-0	3503	Storage room	None	None	None	None	H ₂ O hose Port ext
137-0	3504	Uncontrolled corridor	Cable Insul 2 Security cabinets	390 lb 0.08 x 10 ⁶ Btu	1,612	Ionizat	Auto-wet sprinkler sys H ₂ O hose Port ext
137-0	3505	Vestibule	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	3506, 3508	Uncontrolled laundry room & Towel storage/issue area Channel C FRVS from RSP	Transient clothing	100 lbs	1,000	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3507	Janitor's room	None	None	None	None	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3509, 3521	Disrobe area & Clean clothing issue room	None	None	None	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3510	UHF Radio Equip Room Channel C FRVS from RSP	None	None	None	Ionizat	H O hose 2 Port ext
137-0	3512, 3522	Controlled corridors	None	None	None	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3513	Personnel toilet	Terreon	1,590 lb	36,742	None	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3514, 3515	Uncontrolled locker rooms & Corridor	None	None	None	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3516, 3517	Drying area & Personnel showers	None	None	None	None	H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	3518	Electrical tray room	Cable insul	2125 lb	177,000	None	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3519	Uncontrolled locker room	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3520	Controlled locker area	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3520a	Security Break Room	Wood Plastic Paper Foam Carpet	343 lb 217 lb 50 lb 94 lb 40 lb	41,677	Ionizat	Auto-wet sprinkler sys Port ext
137-0	3523	Disrobe area	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3524	Supervisors' controlled lockers	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3525	Supervisors' uncontrolled lockers	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3526, 3527, 3528	Shower room, Drying area & Toilet room	None	None	None	None	Auto-wet sprinkler sys in 3528 H ₂ O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	3529	Entry room	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3530	Toilet room	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3531, 3532	Dosimetry lab area & Health physics office	Cable Insul Paper Plastic	142 lb 100 lb 154.3 lb	8,339	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port text
137-0	3533	Access control area	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3534	Central monitors area	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3535	Decontamination area	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3536 3537, 3538	Disrobe area, Drying area & Shower area	None	None	None	None	H ₂ O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	3539, 3540	Controlled corridors	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3541	Clean clothing issue room	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3542	Controlled corridor	Hydraulic Oil	0.87 gal.	139,200	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2
137-0	3543	Controlled corridor	None	None	None	Ionizat	H ₂ O hose 2
137-0	3544	Controlled corridor	Cable Insul	36 lb	367	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3545	Telephone equip room	Cable Insul	7 lb	769	None	H ₂ O hose 2 Port ext
137-0	3546	Conference room	Cable Insul Paper	157 lb 100 lb	3,584	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3547	Auxiliary decontamination area	None	None	None	Ionizat	Auto-wet sprinkler sys H ₂ O hose 2 Port ext
137-0	3548, 3549, 3550	Disrobe area, Shower room and Drying area	None	None	None	None	H ₂ O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	3551, 3554	Controlled corridors	Cable insul	2,933 lb	38,196	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3552	Toilet room	None	None	None	None	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3553	Janitor's room	Plastic Cardboard Paper	40 lb 35 lb 200 lb	54,810	None	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3555	Controlled laundry rm	Cable Insul	104 lb	1,262	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3556	Auxiliary controlled locker room	Cable Insul	66 lb	1,320	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3556A	Office Area	Cable Insul	67 lb	1783	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3557	Auxiliary uncontrolled locker room	None	None	None	Ionizat	Auto-wet sprinkler sys H O hose 2 Port ext
137-0	3558	Toilet room	Terreon	195 lb	18,656	None	Auto-wet sprinkler sys H O hose 2

TABLE 9A-1 (Cont)

<u>Elev</u> <u>ft-in.</u>	<u>Room</u>	<u>Room Description and</u> <u>Safe Shutdown Equip and Cable</u>	<u>Hazard</u>		<u>Fire Load</u> <u>Btu/ft²</u>	<u>Detection</u>	<u>Suppression</u>
			<u>Material</u>	<u>Quantity</u>			
137-0	3559,	Drying area & Shower room	Cable Insul	5 lb	195	None	H ₂ O hose
	3560						Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	3561	Entry	None	None	None	None	H ₂ O hose Port ext
137-0	3562	Uncontrolled instrument shop	None	None	None	Ionizat	H ₂ O hose Port ext
137-0	3564	Vestibule	None	None	None	None	H ₂ O hose Port ext
137-0	3565	Standard room	None	None	None	None	H ₂ O hose Port ext
137-0	3566	Storage room	Paper	400 lb	22,200	None	Auto-wet sprinkler sys H ₂ O hose Port ext
137-0	3567	Reproduction room	Cable Insul	3 lb	86	None	H ₂ O hose Port ext
137-0	3568	Office Area	Cable Insul	246 lb	96,040	Ionizat	H ₂ O hose Port ext
	3569		Paper	20,280 lb			
			Plastic	2,460 lb			
			Wood	1,914 lb			
			Wool	306 lb			
			Ceiling Tile	2,132 lb			
			Carpet	2,215 lb			
137-0	3570, 3572	Corridors	None	None	None	Ionizat	H ₂ O hose Port ext
137-0	3571	Controlled instrument shop	None	None	None	Ionizat	H ₂ O hose Port ext
137-0	3573	M&TE Issue and Storage Room	Cable Insul	2 lb	16	Ionizat	Auto-wet sprinkler sys H ₂ O Hose Port ext
137-0	3574	Office Area	Cable Insul	4 lb	79	Ionizat	Auto-wet sprinkler sys H ₂ O Hose Port ext

TABLE 9A-1 (Cont)

<u>Elev ft-in.</u>	<u>Room</u>	<u>Room Description and Safe Shutdown Equip and Cable</u>	<u>Hazard</u>		<u>Fire Load Btu/ft²</u>	<u>Detection</u>	<u>Suppression</u>
			<u>Material</u>	<u>Quantity</u>			
137-0	3576	Remote shutdown facility Panel C-399 with Div I & Div II safe shutdown instrumentation and controls. Div I cable (Div II bottom entry)	Cable insul Paper	1278 lb 200 lb	17,800	Ionizat	None
137-0	3578	Disrobe area	None	None	None	None	Auto-wet sprinkler sys H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	3579	Vestibule Channel C FRVS from RSP	None	None	None	Ionizat	H ₂ O hose Port ext
137-0	3580	HVAC filter room	None	None	None	Ionizat	H ₂ O hose Port ext
137-0	3581	Vent stack	None	None	None	None	None
137-0	3582	Access area	None	None	None	Photo-el	Auto-wet sprinkler sys H ₂ O hose
137-0	3583	Entrain't separator room	None	None	None	Photo-el	H ₂ O hose
137-0	3584	Vapor body room	None	None	None	Photo-el	H ₂ O hose
153-3	3601, 3602	Reactor Building ventilation equip rm	Cable insul Plastic(blanket)	11,075 lb 4 lb	10,711	Ionizat Photo-el	H ₂ O hose Port ext
153-3	3603	Reactor Building ventilation equip rm	Cable insul	8389 lb	11,100	Ionizat Photo-el	H ₂ O hose Port ext
155-3	3604, 3607, 3608	Corridors	None	None	None	Ionizat Photo-el None in 3607	H ₂ O hose Port ext
155-3	3605	H&V equip area Channel C MCR chiller and HVAC	Cable insul	468 lb	1690	Ionizat	H ₂ O hose Port ext
155-3	3606	Radwaste exh system equip rm Channel C cable and HVAC	None	None	None	Ionizat	H ₂ O hose Port ext
155-3	3609	H&V equip area insul	Cable	850 lb	640	Ionizat Photo-el	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
153-0	3613	TSC Mechanical room	Charcoal	1450 lb	26,900	Ionizat Heat actuated in filter unit	Auto water spray in filter unit H O hose 2 Port ext	
172-6	3703	Vent stack enclosure	None	None	None	None	None	
<u>Reactor Building</u>								
054-0	4101	Torus water cleanup pump rm			11,200	Photo-el	H O hose 2 Port ext	(a)
054-0	4102	Torus compartment Div I valves - HPCI, RHR, CS Div I cable Div II valves - RCIC, RHR, CS Div II cable	Cable insul Hydraulic Fluid Plastic Blanket	9548 lb 19 gal. 39 lb	4326	Contin- uous line type heat Heat de- tectors	H O hose 2	
054-0	4103	Vestibule			11,200	Photo-el	H O hose 2 Port ext	(a)
054-0	4104	Core spray pump rm Div II cable	Cable insul Lube oil Transient lube oil Plastic	7522 lb 17.65 gal. 15 gal. 0.26 lb.	59,048	Photo-el	H O hose 2 Port ext	(a)
054-0	4105	Core spray pump rm Div II cable	Cable insul Lube oil Transient lube oil Plastic	2879 lb 15 gal. 15 gal. 4 lb	33,494	Photo-el	H O hose 2 Port ext	(a)
054-0	4106	CRW/DRW pumps and sump rm	Cable insul Charcoal filter	1275 lb 99 lb	22,300	Photo-el	H O hose 2 Port ext	(a)
054-0	4107	RHR pump room Div II RHR pump 1DP202 Div II jockey pump 1DP228 Div II unit clr 1HVV210 1DVH210 Div II rack 10C069-RHR, ADS Div II cable	Cable insul Lube oil Transient lube oil	4900 lb 39 gal. 39 gal.	33,700	Photo-el	H O hose 2 Port ext	(a)

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
054-0	4108	RCIC elect equip rm Div II MCC 10D261 RCIC Div II rack 10C021 RHR, ADS Div II cable to RCIC, RHR, and ADS	Cable insul	6973 lb	48,100	Photo-el	H O hose 2 Port ext	(a)
054-0	4109,	RHR pump and HX rm	Cable insul	4182 lb	41,000	Photo-el	H O hose 2 Port ext	(a)
077-0	4208	Div II RHR HX 1BE205 Div II RHR pump 1BP202 Div II Unit clr's 1BVH210 1FVH 210 RHR valves Div II cable Div I HPCI auto transfer	Lube oil Transient lube oil	39 gal. 39 gal.				
054-0	4110	RCIC pump and turb rm RCIC pump 10P203-Div II RCIC turbine 10S212-Div II RCIC gland steam cond 10E209 RCIC gland seal cond vac pump 10P219 RCIC vac tank cond pump 10P220 Div II jockey pump 1BP228 Div II cable - RCIC Div II unit clr's 1AVH208 1BVH208	Cable insul Lube oil Transient lube oil	1544 lb 10 gal. 10 gal.	23,600	Photo-el	H O hose 2 Port ext	(a)
054-0	4111	HPCI pump and turb rm Div I HPCI pump 10P204 Div I HPCI turb 10S211 Div I HPCI gland steam cond 10E210 HPCI gland seal cond vac pump 10P216 HPCI vacuum tank pump 10P215 Div I jockey pump 1AP228 Div I valves: HPCI Div I cable: HPCI Div I unit clr 1AVH209 1BVH209 Div II RHR A PT	Cable insul Lube oil Transient lube oil	2036 lb 175 gal. 55 gal.	34,700	Photo-el	H O hose 2 Port ext	(a)

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
054-0	4112	HPCI elect equip rm Div I MCC 10D251-HPCI Div I rack 10C018-RHR, ADS Div I cable	Cable insul	8513 lb	41,500	Photo-el	H O hose 2 Port ext	(a)
054-0	4113,	RHR pump and HX rm	Cable insul	5913 lb	48,900	Photo-el	H O hose 2 Port ext	(a)
077-0	4214	Div I RHR pump 1AP202 Div I RHR HX 1AE205 Div I valves - RHR Div I unit clr 1AVH210, 1BVH210 Div I cable - RHR	Lube oil Transient lube oil	39 gal. 39 gal.				
054-0	4114	RHR pump rm Div I RHR pump 1CP202 Div I jockey pump 1CP228 Div I rack 10C055 - RHR Div I unit clr 1CVH210 & 1GVH210 Div I valves - RHR Div I cable - RHR	Cable insul Lube oil Transient lube oil	4292 lb 39 gal. 39 gal.	31,100	Photo-el	H O hose 2 Port ext	(a)
054-0	4115	CRW/DRW pumps and sump rm Div I cable - HPCI	Cable insul Char. filt. Plastic(blanket)	1360 lb 99 lb 16 lb	23,253	Photo-el	H O hose 2 Port ext	(a)
054-0	4116	Core spray pump rm	Cable insul Lube oil Transient lube oil	5890 lb 15 gal. 15 gal.	44,700	Photo-el	H O hose 2 Port ext	(a)
054-0	4117	Vestibule			11,200	Photo-el	H O hose 2 Port ext	(a)
054-0	4118	Core spray pump rm Div I cable	Cable insul Lube oil Transient lube oil	3892 lb 15 gal. 15 gal.	38,100	Photo-el	H O hose 2 Port ext	(a)
077-0	4201	Motor control center area Div II MCC 10B242 Div II cable	Cable insul	13,506 lb	53,500	Photo-el Heat Actuated	H O hose 2 Port ext Auto pre- action sprink- ler system	(a)

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
077-0	4202	CRD pumps area	Cable insul	12410 lb	55,861	Photo-el	H O hose 2 Port ext	(a)
		Div II control panels:	Lube oil	3 gal.				
		10C066 RHR	Transient					
		10C026 Rx level and press	lube oil	3 gal.				
		Div II cable	Plastic	4 lb.				
077-0	4203	Corridor	Cable insul	4371 lb	39,800	Photo-el	H O hose 2 Port ext	(a)
		Div II control rack:						
		10C027 Rx level and press						
		Div I and II cable						
077-0	4204	Vestibule	Plastic	4 lb	1,379	None	H O hose 2 Port ext	
077-0	4205	Elect equip rm	Cable insul	6978 lb	33,500	Photo-el	H O hose 2 Port ext	(a)
		Div II cable - RHR						
		Div I cable - HPCI						
077-0	4206	Vestibule	None	None	None	None	H O hose 2 Port ext	
077-0	4207	Passageway	Cable insul	3258 lb	93,800	Photo-el	H O hose 2 Port ext	(a)
		Div II RCIC leak detection						
		Div I HPCI CST return valve						
077-0	4209,	Reactor Aux Cooling System	Cable insul	15,940 lb	28,200	Photo-el	H O hose 2 Port ext	(a)
	4211	equip rm	Lube oil	6 gal				
	4213	Div I and II valves HV2357A	Transient					
		HV2357B, SSWS,	lube oil	6 gal				
		Div I and II cable						
		Div I and II instruments						
077-0	4210	Safeguard instr room	None	None	None	Photo-el	H O hose 2 Port ext	
077-0	4212	Vestibule	None	None	None	None	H O hose 2 Port ext	
077-0	4215	Elect equip area	Cable insul	11,133 lb	49,400	Photo-el	H O hose 2 Port ext	(a)
		Div I control panel:						
		10C004 Rx level and press						
		Cable Div I & II						

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
077-0	4216	Corridor Div I and II cable	Cable insul	4305 lb	39,300	Photo-el	H O hose 2 Port ext	(a)
077-0	4217	Vestibule	None	None	None	None	H O hose 2 Port ext	
077-0	4218	Motor control center area Div I control panel: 10C005 - Rx level and press Div I cable	Cable insul	10,251 lb	34,400	Photo-el	H O hose 2 Port ext	(a)
077-0	4219	Safeguard instr rm Div I cable	Cable insul	None	None	Photo-el	H O hose 2 Port ext	
102-0	4301,	Corridor and Elect equip area	Cable	36,291 lb	63,283	Photo-el	H O hose 2	(a)
	4310	Div I MCC 10B232 for SACS, SSWS, HPCI, RHR Div I & II cable	insul			Heat actuated	Port ext Auto pre- action sprinkler sys in 4301	
102-0	4303	Motor control center area Div II MCC 10B222 for SACS, SSWS, RCIC, RHR, SRV Div II cable	Cable insul Plastic	32,293 lb 12 lb	77,553	Photo-el	H O hose 2 Port ext	(a)
102-0	4304, 4305	Personnel airlocks	None	None	None	None	H O hose 2 Port ext	
102-0	4307	SACS HX and pump rm-Div II Div II SACS pumps 1BP210 1DP210 Div II SACS HX 1B1E201 1B2E201 Div II control panels 1BC201 1DC201 Div II valves-SACS and SSWS Div II unit coolers 1BVH214 1DVH214 Div I & II cable - SACS	Cable insul Lube oil Transient lube oil	9584 lb 4 gal. 4 gal.	17,900	Photo-el	H O hose 2 Port ext	(a)

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
102-0	4309	SACS HX and pump rm-Div I	Cable	27,692 lb	28,800	Photo-el	H O hose 2 Port ext	(a)
		Div I SACS pumps 1AP210 1CP210	insul Lube oil Transient lube oil	4 gal. 4 gal.				
		Div I SACS HX 1A1E201 1A2E201						
		Div I control panels 1AC201 1CC201						
		Div I valves-SACS and SSWS						
		Div I unit clrs 1AVH214 1BVH214						
		Div I & II cable - SACS						
102-0	4311	Vestibule	None	None	7000	Photo-el	H O hose 2 Port ext	(a)
102-0	4313	Personnel airlock	None	None	None	None	H O hose 2 Port ext	
102-0	4315	Corridor	None	None	10,100	Photo-el	H O hose 2 Port ext	(a)
102-0	4316	Steam tunnel Div II MSIV's HPCI FW isol. valve RCIC FW isol. valve	None	None	None	None	H O hose 2	
102-0	4317	CRD master control area	Cable	11,885 lb	61,500	Photo-el	H O hose 2 Port ext	(a)
		Div II cable - RHR, RCIC MSRVs & SACS	insul Hydraulic Fluid	5 gal.				
102-0	4318	Neutron Monitoring System area	Cable insul	4965 lb	49,700	Photo-el	H O hose 2 Port ext	
		Div II cable - RHR, RCIC, MSRVs & SACS						
099-9	4319	RCIC pipe chase	None	None	None	None	H O hose 2	
		Div II cable-RCIC						
102-0	4320	CRD hydraulic control area	Cable insul	3630 lb	24,900	Photo-el	H O hose 2 Port ext	(a)
		Div II cable						

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
099-9	4321	Pipe chase	Hydraulic	4 gal	1,117	None	H O hose 2	
		Div II RHR & CS valves	Fluid					
102-0	4322	Personnel and equip access	Cable insul	6,266 lb	33,749	Photo-el	H O hose 2	(a)
		area Div II cable	Paper	25 lb			Port ext	
			Plastic	50 lb				
			Plastic blnkt	24 lb				
102-0	4323	Equip airlock	New fuel	5,500 lb	42,720	Photo-el	H O hose 2	
			wood crates				Port ext	
			Lube oil	360 gal				
102-0	4324	Personnel airlock	Ops locker					
			None	None	None	None	H O hose 2	
							Port ext	
102-0	4326/4333	CRD storage, removal and	Cable	6,603 lb	55,528	Photo-el	H O hose 2	(a)
		repair area	insul				Port ext	
		Div I cable	Transient	500 lb				
			wood					
102-0	4327	HPCI pipe chase	Hydraulic	1 gal	1396	None	H O hose 2	
		Div I HPCI valve	Fluid					
102-0	4328	CRD hydraulic control area	Cable	4,523 lb	29,941	Photo-el	H O hose 2	(a)
		Div I cable	insul				Port ext	
			Hydraulic	3.64 gal				
			Fluid					
102-0	4329	North pipe chase	None	None	None	None	H O hose 2	
		Div I RHR HPCI valves						
		Div II Cable for BC-HV-F008						
		and BC-HV-F015A						
102-0	4330	Drywell access area	Cable insul	1,986 lb	40,372	Photo-el	H O hose 2	
			Plastic blkt	11 lb			Port ext	
102-0	4331	Personnel and equip access	Cable	7,773 lb	38,907	Photo-el	H O hose 2	(a)
		area	insul				Port ext	
		Div I cable	misc work					
			station combus	235 lb				
102-0	4332	Washdown area	Cable insul	1,190 lb	44,100	Photo-el	H O hose 2	
							Port ext	
119-6	4334	Elevator machine room	None	None	None	None	H O hose 2	
							Port ext	

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TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
132-0	4401	Electrical equip area	Cable	8422 lb	21,547	Photo-el	H O hose 2 Port ext	(a)
			insul Hydraulic Fluid	1 gal				
132-0	4402	Pipe chase	Hydraulic	1 gal	176	None	H O hose 2	
		Div II cable	Fluid					
132-0	4403	Reactor water cleanup recirc pump rm	Plastic blanket	17.9 lb	2,197	None	H O hose 2 Port ext	
132-0	4404	Corridor	Cable	5631 lb	36,400	Photo-el	H O hose 2 Port ext	(a)
			insul					
132-0	4405	RWCU recirc pump rm	Plastic blanket	21.5 lb	6,333	None	H O hose 2 Port ext	
			Other	69 lb				
132-0	4406	RWCU backwash transfer pump rm	None	None	None	None	H O hose 2 Port ext	
132-0	4407	RWCU backwash receiving tank rm	None	None	None	None	H O hose 2	
132-0	4408	Equip removal area	Cable	12,432 lb	27,116	Photo-el	H O hose 2 Port ext	(a)
			insul Lube oil	0.5 gal				
132-0	4409	Steam vent	None	None	None	None	H O hose 2 Port ext	
132-0	4410, 4411	FRVS recirc units area FRVS recirc fans 1AV213 and 1CV213 FRVS recirc filters 1AVH213 and 1CVH213	Cable insul Charcoal Plastic blanket	34,775 lb 15,000 lb 7 lb	74,613	Heat act in filter unit Ionizat	Preaction water spray (in filter unit) H O hose 2 Port ext H O hose 2 Port ext	
132-0	4410A	CRD Control Room	None	None	None	None	H O hose 2 Port ext	
132-0	4412	Containment instr gas compressor rm	Cable insul Lube oil Transient lube oil	1108 lb 1 gal. 1 gal.	18,500	Photo-el	H O hose 2 Port ext	
132-0	4413	Containment instr gas compressor rm	Lube oil Transient lube oil	1 gal. 1 gal.	1,000	Photo-el	H O hose 2 Port ext	

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TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression		
			Material	Quantity					
132-0	4415, 4416, 4417, 4420, 4418, 4419	Technical support center	General Office Area (NFPA Handbook) 19 th Edition			64,000 Photo-el	Ionizat Port ext	H O hose 2	(c)
145-0	4501	Elect equip area	Cable insul	12,812 lb	42,500	Photo-el	H O hose 2 Port ext	(a)	
145-0	4502	RWCU filter demin holding pump rm	Cable insul	256 lb	6400	None	H O hose 2 Port ext		
145-0	4503	RWCU filter demin holding pump rm	Cable insul	142 lb	3,600	None	H O hose 2 Port ext		
145-0	4504	Passageway	Cable insul Plastic blanket	10,119 lb 3 lb	24,306	Photo-el	H O hose 2 Port ext	(a)	
145-0	4505	Pipe chase Div II cable	Plastic blanket	68 lb	2,366	None	H O hose 2		
145-0	4506	RWCU heat exchanger rm	None	None	None	None	H O hose 2		
145-0	4508	Corridor	Cable insul Plastic blanket	10,581 lb 15 lb	26,133	Photo-el	H O hose 2 Port ext	(a)	
145-0	4509	Pipe chase	None	None	None	None	H O hose 2		
145-0	4510	Personnel airlock	None	None	None	None	H O hose 2 Port ext		
145-0	4511	FRVS vent unit rm FRVS vent filter 1AVH206 FRVS vent fan 1AV206	Charcoal	2250 lb	69,400	Heat act in filter unit	Preaction water spray (in filter unit) H O hose 2 Port ext		

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
145-0	4512	FRVS vent unit rm FRVS vent filter 1BVH206 FRVS vent fan 1BV206	Charcoal	2250 lb	58,400	Heat act in filter water unit	Preaction spray sys (in fil- ter unit). H O hose 2 Port ext	
145-0	4513	Sample station rm	Cable insul	634 lb	10,000	Photo-el	H O hose 2 Port ext	
145-0	4514, 4515, 4516, 4517	Technical support center	General office Area (NPFA Handbook) 19th Edition		64,000	Ionizat	H O hose 2 Port ext	(c)
145-0	4518	Main steam tunnel HVAC equipment room	None	None	None	Photo-el	H O hose 2 Port ext	
162-0 178-6	4601, 4618	Corridor and Platform area	Cable insul	3822 lb	27,800	Photo-el	H O hose 2 Port ext	(a)
162-0	4602 4604	Post-LOCA recombiner area	Cable insul	11,837 lb	33,300	Photo-el	H O hose 2 Port ext	(a)
162-0	4603	Containment prepurge cleanup rm	Charcoal Plastic blanket	750 lb 23 lb	12,894	Heat act in filter unit	H O hose 2 Port ext Preaction water spray (in filter unit)	
162-0	4605, 4608	Equipment area and corridor	Cable insul	5953 lb	19,600	Photo-el	H O hose 2 Port ext	(a)
162-0	4606	Standby liquid control area	Cable insul Rubber Hose	3485 lb 20 lb	36,524	Photo-el	H O hose 2 Port ext	(a)
162-0	4607	Fuel pool water suction area	None	None	None	None	H O hose 2	
162-0	4609	Gamma scan electronic rm	None	None	None	None	H O hose 2 Port ext	
162-0	4613	Gamma scan detector area	None	None	None	None	H O hose 2	

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
162-0	4614	FRVS recirc unit rm E FRVS recirc filter 1EVH213 FRVS recirc fan 1EV213	Cable insul Charcoal	3842 lb 7500 lb	55,000	Photo-el Heat act in filter unit	Preaction water spray sys (inside filter unit) H O hose 2 Port ext
162-0	4615	FRVS recirc unit rm D FRVS recirc filter 1DVH213 FRVS recirc fan 1DV213	Cable insul Charcoal	1271 lb 7500 lb	48,100	Photo-el Heat act in filter unit	Preaction water spray sys (inside filter unit) H O hose 2 Port ext
178-6	4616	FRVS recirc unit rm F FRVS filter 1FVH213 FRVS recirc recirc fan 1FV213	Cable insul Charcoal	7636 lb 7500 lb	54,400	Photo-el heat act in filter unit	Preaction water spray sys (inside filter unit) H O hose 2 Port ext
178-6	4617	FRVS recirc unit rm B FRVS recirc fan 1BV213 FRVS recirc filter 1BVH213	Cable insul Charcoal	5683 lb 7500 lb	53,900	Photo-el Heat act in filter unit	Preaction water spray sys (inside filter unit) H O hose 2 Port ext
176-0	4619	Electrical access area	None	None	None	None	None
162-0	4620,	RWCU filter/demin vessel	None	None	None	None	H O hose
	4621	rooms					2 Port ext
172-6	4624	Isolation valve room	None	None	None	None	None
162-0	4625	Fuel pool cooling pump rm Fuel pool cooling pump 1AP211	None	None	None	Photo-el	H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
162-0	4626	Fuel pool cooling pump rm	None	None	None	Photo-el	H O hose 2 Port ext	
		Fuel pool cooling pump 1BP211						
162-0	4627	Fuel pool heat exch rm	None	None	None	Photo-el	H O hose 2 Port ext	
		Fuel pool heat exch 1AE202						
162-0	4628	Fuel pool heat exch rm	None	None	None	Photo-el	H O hose 2 Port ext	
		Fuel pool heat exch 1BE202						
218-6	4701	Elevator mach rm	Lube oil	3 gal.	6000	None	H O hose 2 Port ext	
			Transient lube oil	3 gal.				
228-6	4702	Polar crane entry platform	None	None	None	None	H O hose 2 Port ext	
201-0	4703	Reactor basin	Cable Insul	2395 lb	12,851	Photo-el	H O hose 2 Port ext	(a) (b)
	4705, 4706, 4707 4708, 4709, 4710	RPV head washdown area & Laydown areas, Cask washdown area New fuel storage and work areas	Transient Wood Hoisting Slings Rubber Boot Plastic Wood Polyester resin Cable insulation Grease Plastic (blanket)	2000 lb 460 lb 25 lb 164 lb 420 lb 2000 lb 25 lb 1 quart 76 lb		beam type		
<u>Auxiliary Building Control & Diesel Generator</u>								
054-0	5101	Vestibule	Cable insul	566 lb	49,300	None	H O hose 2 Port ext	
054-0	5102	Elect equip rm, non-1E	Cable insul	35,460 lb	42,456	Ionizat	H O hose 2 Port ext	
			Plastic	4 lb				
054-0	5103	125 V dc equip rm, non-1E	Cable insul	4282 lb	47,700	Photo-el	H O hose 2 Port ext	
						Ionizat		
054-0	5104	HPCI battery rm	Batt case	152 lb	5500	Ionizat	H O hose 2 Port ext	
		HPCI 250 V dc batt Div I conduit						

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
054-0	5105	RPS MG set rm Div I cable	Cable insul	1275 lb	13,900	Ionizat	H O hose 2 Port ext
054-0	5106,	Controlled storage area &	Cable	21,914 lb	28,366	Ionizat	H O hose 2 Port ext
	3110	Corridor Div II cable	insul Lube oil	360 gal		Photo-el	
054-0	5107	Diesel fuel oil storage Tanks and pumps 1GT403, 1HT403 1GP401, 1HP401 Div II conduit	Fuel oil number 2	53,000gal.	7.1x10E6	Photo-el Ultra- violet Heat actuated	CO tot 2 flood Manual deluge
054-0	5108	Diesel fuel oil storage Tanks and pumps 1CT403, 1DT403, 1CP401, 1DP401 Div II conduit	Fuel oil number 2	53,000 gal.	7.1x10E6	Photo-el Ultra- violet Heat actuated	CO tot 2 flood Manual deluge
054-0	5109	Diesel fuel oil storage Tanks and pumps 1ET403, 1FT403, 1EP401, 1FP401 Div I conduit	Fuel oil number 2	53,000 gal.	7.1x10E6	Photo-el Ultra- violet Heat actuated	CO tot 2 flood Manual deluge
054-0	5110	Diesel fuel oil storage Tanks and pump 1AT403, 1BT403, 1AP401, 1BP401 Div I conduit	Fuel oil number 2	53,000 gal.	7.1x10E6	Photo-el Ultra- violet Heat actuated	CO tot 2 flood Manual deluge
054-0	5111,	Corridors	Cable insul	5752 lb	12,852	Photo-el	H O hose 2 Port ext
	5112		Plastic	4 lb		Ionizat	
054-0	5121	Vestibule	Cable insul	425 lb	35,400	None	Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
054-0	5126	125 V dc batt rm, non-1E	Batt case	620 lb	10,200	Photo-el	H O hose 2
					Ionizat	Port ext	
054-0	5128	RCIC battery rm	Batt case	73 lb	4200	Ionizat	H O hose 2
		RCIC 250 V dc batt					Port ext
		Div II conduit					
054-0	5129	HPCI elect rm	Cable	1415 lb	30,800	Ionizat	H O hose 2
		250 V dc swgr batt monitor	insul				Port ext
		and charger					
		Div I cable					
054-0	5130	RCIC elect rm	Cable insul	848 lb	9,500	Ionizat	H O hose 2
		250 V dc swgr batt monitor					Port ext
		and charger					
		Div II cable					
077-0	5201	Vestibule	Cable insul	948 lb	79,000	None	H O hose 2
		Div II cable					Port ext
077-0	5202	Cable spread room	Cable insul	182,112lb	158,022	Photo-el	Preaction sprinkler
		Div I & II cable			Ionizat	H O hose 2	Port ext
077-0	5203	Elect chase	Cable insul	3090 lb	253,279	Ionizat	H O hose 2
		Div II cable			(in 5531)	Port ext	Auto pre-
					Heat	action	sprinkler
					actuated	sys	
077-0	5204	Elect chase	Cable insul	3090 lb	253,279	Ionizat	H O hose 2
		Div II cable			(in 5532)	Port ext	Auto pre-
					Heat	action	sprinkler
					actuated	sys	

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
077-0	5205	Elect chase Div I cable	Cable insul	3090 lb	253,279	Ionizat (in 5533) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
077-0	5206	Elect chase Div I cable	Cable insul	3090 lb	253,279	Ionizat (in 5534) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
077-0	5207, 3204	Electrical access area (wing) Div II cable	Cable insul Security cabinet	81,634 lb 0.04 x 10 ⁶	120,381 Btu	Ionizat Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
077-0	5208	Diesel gen HVAC rm Diesel gen coolers - Div II 1HV412, 1DV412, 1HVE412, 1DVE412	None	None	None	Ionizat	H ₂ O hose Port ext
077-0	5209	Diesel gen HVAC rm Diesel gen coolers - Div II 1FV412, 1BV412, 1FVE412, 1BVE412	None	None	None	Ionizat	H ₂ O hose Port ext
077-0	5210	Diesel gen HVAC rm Diesel gen coolers - Div I 1GV412, 1CV412, 1GVE412, 1CVE412	None	None	None	Ionizat	H ₂ O hose Port ext
077-0	5211	Diesel gen HVAC rm Diesel gen coolers - Div I 1EV412, 1AV412, 1EVE412, 1AVE412	None	None	None	Ionizat	H ₂ O hose Port ext
077-0	5215, 5217	Access area & Corridor	Plastic	4 lb	44	Ionizat	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
077-0	5216	Electrical chase	Cable insul	2416 lb	387,900	None	H O hose 2 Port ext
			wood	35.2 lb			
077-0	5233	Vestibule	None	None	None	None	H O hose 2 Port ext
077-0	5237	Electrical access area	Cable insul	28,147 lb	47,300	Ionizat	H O hose 2 Auto pre- action sprinkler sys
		Div I cable				Heat actuated	
102-0	5301,	Electrical access area	Cable	54,205 lb	137,627	Ionizat	H O hose 2 Port ext
	3314	Div II cable (wing)	insul				
			Security cabinet	0.04 x 10 ⁶ Btu			
102-0	5302	Control equipment rm	Cable insul	31,371 lb	29,473	Ionizat	H O hose 2 Port ext
		Div I and II cable and panels	Plastic	44 lb		Photo-el	
102-0	5303,	Corridor and Vestibule	None	None	None	None	H O hose 2 Port ext
	5316						
102-0	5304	Diesel generator rm	Cable insul	2524 lb	197,000	Infra-red	CO tot 2 flood
		Div II diesel generator 1DG400 and auxiliaries	Lube oil	1250 gal.	Ionizat	Heat act	H O hose 2 Port ext
			Diesel fuel	550 gal.			
		Div II cable	number 2 Transient (lube oil)	55 gal.			
102-0	5305	Diesel generator rm	Cable insul	2524 lb	197,000	Infra-red	CO tot 2 flood
		Div II diesel gen 1BG400 and auxiliaries	Lube oil	1250 gal.	Ionizat	Heat act	H O hose 2 Port ext
			Diesel fuel	550 gal.			
		Div II cable	number 2 Transient (lube oil)	55 gal.			

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	5306	Diesel generator rm	Cable insul	2609 lb	198,000	Infra-red	CO tot 2
		Div I diesel-gen 1CG400 and auxiliaries	Lube oil	1250 gal.		Ionizat	flood
			Diesel fuel	550 gal.		Heat act	H O hose 2
		Div I cable	number 2 Transient (lube oil)	55 gal			Port ext
102-0	5307	Diesel generator rm	Cable insul	2609 lb	198,000	Infra-red	CO tot 2
		Div I diesel gen 1AG400 and auxiliaries	Lube oil	1250 gal.		Ionizat	flood
			Diesel fuel	550 gal.		Heat act	H O hose 2
		Div I cable	number 2 Transient (lube oil)	55 gal			Port ext
102-0	5308,	Corridors	Cable insul	1615 lb	38,097	Ionizat	H O hose 2
	5315		Oil	315 gal			Port ext
			Cloth	200 lb			Partial auto-wet
			Plastic	204 lb			sprinkler sys
			Hydraulic Oil	1.74 gal			In Room 5315
			Transient				
			Plastic tanks	300 lb			
102-0	5323	Elect cable chase	Cable insul	2449 lb	200,738	Ionizat	H O hose 2
		Div II cable			(in 5531) Heat actuated	Port ext Auto pre- action sprinkler sys	
102-0	5324	Elect cable chase	Cable insul	2449 lb	200,738	Ionizat	H O hose 2
		Div II cable			(in 5532) Heat actuated	Port ext Auto pre- action sprinkler sys	
102-0	5325	Elect cable chase	Cable insul	2449 lb	200,738	Ionizat	H O hose 2
		Div I cable			(in 5533) Heat actuated	Port ext Auto pre- action sprinkler sys	

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	5326	Elect cable chase Div I cable	Cable insul	2449 lb	200,738	Ionizat (in 5534) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
102-0	5331	Elect cable chase Div II cable	Cable insul	381 lb	34,636	Ionizat (in 5531) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
102-0	5332	Elect cable chase Div II cable	Cable insul	381 lb	34,636	Ionizat (in 5532) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
102-0	5333	Elect cable chase Div I cable	Cable insul	381 lb	34,636	Ionizat (in 5533) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
102-0	5334	Elect cable chase Div I cable	Cable insul	381 lb	34,636	Ionizat (in 5534) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
102-0	5335	Vestibule	None	None	None	None	H ₂ O Hose Port ext
102-0	5336	Electrical raceway	Cable insul	922 lb	144,000	None	H ₂ O Hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
102-0	5339	Electrical access area	Cable insul	29,153 lb	43,679	Ionizat	H O hose 2
		Div I cable	Plastic	4 lb		Heat actuated	Port ext Auto pre- action sprinkler sys
124-0	5401,	Elect access area	Cable insul	33,154 lb	61,488	Ionizat	H O hose 2
	3425	Div II cable				Photo-el Heat actuated	(in 5401) Port ext (in 5401) Auto pre- action sprinkler system
124-0	5402	Vestibule	None	None	None	None	H O hose 2 Port ext
117-6	5403	Control equip rm mezz	Cable insul	95,372 lb	106,030	Ionizat	Auto CO 2
		Div I and II cable				Photo-el Heat act	total flood H O hose 2 Port ext Manual deluge sys
124-0	5404	Corridor	Cable insul	568 lb	6100	None	H O hose 2 Port ext
124-0	5405	Elect chase	Cable insul	1460 lb	119,672	Ionizat	H O hose 2
		Div II cable				(in 5531) Heat actuated	Port ext Auto pre- action sprinkler sys

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
124-0	5406	Elect chase Div II cable	Cable insul	1460 lb	119,672	Ionizat (in 5532) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
124-0	5407	Elect chase Div I cable	Cable insul	1460 lb	119,672	Ionizat (in 5533) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
124-0	5408	Elect chase Div I cable	Cable insul	1460 lb	119,672	Ionizat (in 5534) Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
130-0	5409	Corridor	Plastic	4 lb	52	Ionizat Photo-el	H ₂ O hose Port ext
130-0	5410, 5411	Class 1E swgr rm - Div II Div II 4.16 kV swgr 10A404 Div II 480 V unit substns 10B440, 10B480 Div II MCC 10B441, 10B481 Div II 125 V dc load ctr 10D440 Div II 125 V dc dist pnl 1DD417 Div II diesel control pnl 1DD423 Div II gen control pnl 1DD422 Div II diesel gen sequencer Div II cable	Cable insul	10,204 lb	29,100	Ionizat	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
130-0	5412,	Class 1E swgr rm - Div II	Cable insul	10,204 lb	29,100	Ionizat	H ₂ O hose
	5413	Div II 4.16 kV swgr 10A402 Div II 480 V unit substns 10B420, 10B460 Div II MCC 10B421, 10B461 Div II 125 V dc load ctr 10D420 Div II 125 V dc dist pnl 1BD417 Div II diesel control pnl 1BC423 Div II gen control pnl 1BC422 Div II diesel gen sequencer Div II cable					Port ext
130-0	5414,	Class 1E swgr rm Div I	Cable insul	10,204 lb	29,100	Ionizat	H ₂ O hose
	5415	Div I 4.16-kV swgr 10A403 Div I unit substn 10B430, 10B470 Div I MCC 10B431, 10B471 Div I 125 V dc load ctr 10D430 Div I 125 V dc dist pnl 1CD417 Div I diesel control pnl 1CC423 Div I diesel gen cntrl pnl 1CC422 Div I diesel gen load sequencer Div I cable					Port ext
130-0	5416,	Class 1E swgr rm - Div I	Cable insul	10,204 lb	29,100	Ionizat	H ₂ O hose
	5417	Div I 4.16-kV swgr 10A401 Div I unit substn 10B410, 10B450 Div I MCC 10B411, 10B451 Div I 125-V dc load ctr 10D410 Div I 125-V dc dist pnl 1AD417 Div I diesel cntrl pnl 1AD423 Div I diesel gen cntrl pnl 1AD42 Div I diesel gen load sequencer Div I cable					Port ext
130-0	5418	Corridor	None	None	None	Ionizat Photo-el	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
130-0	5419	Elect chase Div II cable	Cable insul	272 lb	24,727	Ionizat (in 5531) Heat actuated	H O hose 2 Port ext Auto pre- action sprinkler sys
130-0	5420	Elect chase Div II cable	Cable insul	272 lb	24,727	Ionizat (in 5532) Heat actuated	H O hose 2 Port ext Auto pre- action sprinkler sys
130-0	5421	Elect chase Div I cable	Cable insul	272 lb	24,727	Ionizat (in 5533) Heat actuated	H O hose 2 Port ext Auto pre- action sprinkler sys
130-0	5422	Elect chase Div I cable	Cable insul	272 lb	24,727	Ionizat (in 5534) Heat actuated	H O hose 2 Port ext Auto pre- action sprinkler sys
130-0	5423	Diesel combust air intake rm Filter 1DF413 1BF413 Div II cable	Cable insul	13,724 lb	98,592	Ionizat	H O hose 2 Port ext
124-0	5447	Class 1E inverter rm 1BC285 1DC285 Div II conduit	None	None	None	Ionizat	H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
124-0	5448	Class 1E inverter rm 1BD481 1DD481 Div II cable	Cable insul	508 lb	6,000	Ionizat Photo-el	H O hose 2 Port ext
117-6	5449	Elect raceway	Cable insul	851 lb	133,000	None	H O hose 2 Port ext Manual deluge
130-0	5450	Diesel combust air intake rm Filter 1CF413 1AF413 Div I cable	Cable insul	2542 lb	12700	Photo-el	H O hose 2 Port ext
137-0	5501	Elect access area Instr pwr supply 1AD481 1CD481 PA system pwr 10D496 supply RSP room HVAC 1VH316 Div I cable	Cable insul	8207 lb	29,300	Ionizat	H O hose 2 Port ext
137-0	5502	Corridor	Various	Various	40,324	Ionizat	H O hose 2 Port ext
137-0	5503	Instr viewing rm	Various	Various	36,614	Ionizat	H O hose 2 Port ext
137-0	5504	Mens' toilet	Terreon	300 lb	30,574	None	H O hose 2 Port ext
137-0	5505	Briefing Area	Various	Various	70,037	None	H O hose 2 Port ext O hose
137-0	5507	Deleted					
137-0	5508	Storage rm	Various	Various	35,920	Ionizat	H O hose 2 Port ext
137-0	5509	Shift supv rm	Paper Carpet Cable Furnishings Plastic	Insignif (20 ft. ea. of 10 diff. types) (Various) 8 lb.	18,317	Ionizat	H O hose 2 Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
137-0	5510	Main control room	Paper	300 lb	9,032	Ionizat	H O hose 2
		10C650 main vert board	Transient	100 lb			Port ext
		10C651 unit operators console	paper				
		Div I and II panels	Carpet				
			Rubber	70 lb			
			Cable insulation(various)			
			Furnishings	(various)			
137-0	5511	Ready room	Plastic	264 lb	11,869	Ionizat	H O hose 2
			Carpet	56 lb			
			Furnishings	(various)			Port ext
137-0	5512	Corridor	None	None	None	Ionizat	H O hose 2
							Port ext
137-0	5513	Elevator lobby	None	None	None	None	H O hose 2
							Port ext
137-0	5514	Janitor	Paper	100 lb	16,000	None	H O hose 2
							Port ext
137-0	5515	Computer room	Paper	300 lb	15,284	Ionizat	H O hose 2
			Cable Insulation	5 lb			
			Transient	100 lb			Port ext
			paper				
			plastic	479 lb			
137-0	5520	Storage rm	Paper	1300 lb	77,000	Ionizat	H O hose Port ext Auto wet sprklr
137-0	5521, 5522	Corridors	None	None	None	Ionizat	H O hose Port ext
137-0	5523	Work control Center	Cable Insul	5 lb	6094	Ionizat	H O hose Port ext Auto wet sprklr
			Paper	200 lb			
137-0	5525	Corridor	Cable insul	426 lb	4585	None	H O hose Port ext
		Div II cable	Security	0.04 x 10			
			cabinet	Btu			
150-0	5531	Elect cable chase	Cable insul	21,881 lb	130,711	Ionizat	H O hose Port ext
		Div II cable				Heat actuated	Auto pre- action sprinkler sys

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
150-0	5532	Elect cable chase Div II cable	Cable insul	21,881 lb	130,711	Ionizat Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
150-0	5533	Elect cable chase Div I cable	Cable insul	21,881 lb	130,711	Ionizat Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
150-0	5534	Elect cable chase Div I cable	Cable insul	21,881 lb	130,711	Ionizat Heat actuated	H ₂ O hose Port ext Auto pre- action sprinkler sys
150-0	5535	Heating & ventilation chase	Cable insul	8448 lb	64,500	Heat actuated	Auto pre- action sprinkler sys
146-0	5536	Vestibule	None	None	None	None	H ₂ O hose Port ext
146-0	5537	Corridor	Cable insul Plastic	585 lb 4 lb	2072	Ionizat Photo-el	H ₂ O hose Port ext
146-0	5538	Battery charger rm Fuse trans sw box 1DD412 Battery chargers 1DD413 1DD414 Battery monitors 1DD415 Division II cable	Cable insul	2693 lb	39,560	Ionizat Port ext	H ₂ O hose Port ext
146-0	5539	Battery rm Battery racks 1DD411 Division II cable	Cable insul Batt case Batt cover PS spacer LDPE hose	24.3 lb 600.0 lb 60.0 lb 16.0 lb 6.5 lb	44,090	Ionizat	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
146-0	5540	Battery charger rm Fuse trans sw box 1BD412 Battery chargers 1BD413 1BD414 Battery monitors 1BD415 Division II cable	Cable insul	2553 lb	37,500	Ionizat	H ₂ O hose Port ext
146-0	5541	Battery rm Battery racks 1BD411 Division II cable	Cable insul	24.3 lb	44,090	Ionizat	H ₂ O hose Port ext
			Batt case	600.0 lb			
			Batt cover	60.0 lb			
			PS spacer	16.0 lb			
			LDPE hose	6.5 lb			
146-0	5542	Battery charger rm Fuse trans sw box 1CD412 Battery chargers 1CD413 1CD414 Battery monitors 1CD415 Division I cable	Cable insul	2553 lb	37,500	Ionizat	H ₂ O hose Port ext
146-0	5543	Battery rm Battery racks 1CD411 Division I cable	Cable insul	24.3 lb	44,090	Ionizat	H ₂ O hose Port ext
			Batt case	600.0 lb			
			Batt cover	60.0 lb			
			PS spacer	16.0 lb			
			LDPE hose	6.5 lb			
146-0	5544	Battery charger rm Fuse trans sw box 1AD412 Battery chargers 1AD413 1AD414 Battery monitors 1AD415 Division I cable	Cable insul	2553 lb	32,500	Ionizat	H ₂ O hose Port ext
146-0	5539	Battery rm Battery racks 1AD411 Division I cable	Cable insul	24.3 lb	44,090	Ionizat	H ₂ O hose Port ext
			Batt case	600.0 lb			
			Batt cover	60.0 lb			
			PS spacer	16.0 lb			
			LDPE hose	6.5 lb			
150-0	5546	Corridor	None	None	None	Ionizat Photo-el	H ₂ O hose Port ext
155-3	5601	Vestibule	None	None	None	None	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
155-3	5602	HVAC equip rm Control rm wtr chiller 1Ak400 Control rm chilled wtr pump 1AP400 Control rm A/C unit 1AVH403	Cable insul	7658 lb	24,147	Ionizat	H O hose 2 Port ext manual-water spray in 1AVH400
163-6	5604,	Corridors	Cable insul	12,240 lb	32,840	Ionizat	H O hose 2 Port ext
	5611	Div I & II cable	Plastic	4 lb			Port ext
163-6	5605/ 5631	Control equip rm Division I and II Class 1E logic cabinets 1AC655 1CC655 1BC655 1DC655 RMS components	Cable insul	220 lb	9,107	Ionizat	H O hose 2
			Computers Paper	918 lb 200 lb		Photo-el	Port ext
163-6	5606	HVAC equip rm - Div II Switchgear rm cooler 1BVH401, 1DVH401 Diesel battery rm exh fan 1BV406 1DV406	None	None	None	Ionizat	H O hose 2 Port ext
163-6	5607	Class 1E inverter rm Div II Power supply 1DD482 125 V dc swgr 10D446 125 V dc batt chgr 10D444 125 V dc fuse transfer switch box 1DD448	Cable insul	705 lb	13,400	Ionizat	H O hose 2 Port ext
163-6	5608	Corridor	None	None	None	None	H O hose 2 Port ext
163-6	5609	Battery rm - Div II Battery rack 1DD447	Batt case	312 lb	22,900	Ionizat	H O hose 2 Port ext
163-6	5610	Corridor	None	None	None	Ionizat	H O hose 2 Port ext

TABLE 9A-1 (Cont)

<u>Elev ft-in.</u>	<u>Room</u>	<u>Room Description and Safe Shutdown Equip and Cable</u>	<u>Hazard</u>		<u>Fire Load Btu/ft²</u>	<u>Detection</u>	<u>Suppression</u>
			<u>Material</u>	<u>Quantity</u>			
163-6	5612	Corridor	Cable insul	142 lb	2100	Ionizat	H ₂ O hose Port ext
163-6	5613	Class 1E inverter rm - Div I power supply 120 V ac 1CD482 125 V dc swgr 10D436 125 V dc batt chgr 1CD444	Cable insul	776 lb	15,000	Ionizat	H ₂ O hose Port ext
163-6	5614	Class 1E battery rm Battery rack 125 V dc 1CD447	Batt case	312 lb	22,900	Ionizat	H ₂ O hose Port ext
163-6	5615	Class 1E inverter rm 120 V ac power supply 1BD482	Cable insul	352 lb	10,400	Ionizat	H ₂ O hose Port ext
163-6	5616	Class 1E inverter rm 120 V ac power supply 1AD482	Cable insul	352 lb	9,500	Ionizat	H ₂ O hose Port ext
163-6	5617	Electrical access area Div II cable	None	None	None	Ionizat	H ₂ O hose Port ext
163-6	5618	Corridor	None	None	None	Ionizat	H ₂ O hose Port ext
153-3	5619	TSC Electrical room Channel C MCR chiller & HVAC	Cable insul	850 lb	14,800	Ionizat	H ₂ O hose Port ext
163-6	5620	HVAC equip rm Class 1E panel rm supply 1AVH408 1BVH408 Control panel 1EC485	Cable insul	2257 lb	3400	Ionizat	H ₂ O hose Port ext
163-6	5621	Inverter rm	Cable insul	141 lb	3000	Ionizat	H ₂ O hose Port ext
163-6	5622	Inverter rm	Cable insul	352 lb	4500	Ionizat	H ₂ O hose Port ext
163-6	5623	Inverter rm	Cable insul	310 lb	6,000	Ionizat	H ₂ O hose Port ext
163-6	5624	Inverter rm, non-Class 1E	Cable insul	634 lb	5,400	Ionizat	H ₂ O hose Port ext

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
163-6	5625	Corridor	None	None	None	Ionizat	H O hose 2 Port ext
163-6	5626	Battery rm	Batt case	1220 lb	40,000	Ionizat	H O hose 2 Port ext
163-6	5627	Battery rm	Batt case	1220 lb	40,000	Ionizat	H O hose 2 Port ext
163-6	5628	Inverter rm non-Class 1E	Cable insul	1058 lb	8,400	Ionizat	H O hose 2 Port ext
163-6	5629	HVAC equip rm - Div I Switchgear rm coolers 1AVH401 1CVH401 Diesel battery rm exh fans 1AVH406 1CVH406	Cable insul	423 lb	1700	Ionizat	H O hose 2 Port ext
155-3	5630	HVAC equip rm Control rm wtr chiller 1BK400 Control rm chil wtr pmp 1BP400 Control rm A/C unit 1BVH403	Cable insul Plastic	2550 lb 4 lb	5831	Ionizat Photo-el Heat act in 1BVH400	H O hose 2 Port ext Manual water spray inside charcoal filter unit 1BVH400
178-0	5704	Diesel area HVAC rm	Cable insul	2508 lb	1800	Ionizat	H O hose 2 Port ext
	5703	Div I & II DG HVAC pnls 1AC483 1BC483 1CC483 1CC483 Div I & II control area chilled wtr 1AK403 1AP414 1BK403 1BP414 Div I & II control equip rm 1AVH407 1BVH407					

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression
			Material	Quantity			
Station Service Water Intake Structure							
071-6	103	Sump pump Room	FRP	23.0 lbs	544	None	None
079-8	105	Sump Pump Room	FRP	23.0 lbs	544	None	None
079-8	107,	Pump room	PA cable	2.8 lbs	1294	None	H O hose 2
	112	Div I valves & cable	FRP	55.0 lbs			Port ext
079-8	110,	Pump room	PA cable	2.8 lbs	1294	None	H O hose 2
	114	Div II valves & cable	FRP	55.0 lbs			Port ext
093-0	203	Intake struct elect equip rm	Cable	1430 lb	42,300	IFD	H O hose 2
		Div I MCC 10B553, 10B573	insul				Port ext
093-0	204	Intake struct Div I pump rm	Cable insul PA cable FRP	3709 lbs 5 lbs 32 lbs	35,067	IFD Heat actuated	Auto pre- action sprinkler H O hose 2
		Div I service water pumps 1AP502 1CP502	Lube oil	56 gal			port ext
		Div I service water strainers 1AF509 1CF509	transient (lube oil)	28 gal			
		Div I service water valves and instrumentation Div I panels 1AC581, 1CC581 Div I cable - SSW					
093-0	207	Intake struct elect equip rm	Cable	1430 lbs	42,300	IFD	H O hose 2
		Div II MCC 10B563, 10B583	insul				Port ext
093-0	208	Intake struct Div II pump rm	Cable insul PA cable FRP	4499 lbs 5 lbs 32 lbs	39,467	IFD Heat actuated	Auto pre- action sprinkler H O hose 2
		Div II service water pumps 1BP502 1DP502	Lube oil	56 gal			port ext
		Div II service water strainers 1BF509, 1DF509	Transient (lube oil)	28 gal			
		Div II valves and instr Div II panels 1BC581, 1DC581 Div II cable - SSW					

TABLE 9A-1 (Cont)

Elev ft-in.	Room	Room Description and Safe Shutdown Equip and Cable	Hazard		Fire Load Btu/ft ²	Detection	Suppression	
			Material	Quantity				
107-0		Travelling screen panel room Panels 1BC516 & 1DC516 Div II cable	Plastic	4 lb	260	IFD	Port ext H O hose 2	
107-0		Travelling screen panel room Div I Panels 1AC516 & 1CC516	Plastic	4 lb	260	IFD	Port ext H O hose 2	
100-0 114-0	0213 0313	Travelling screen and Motor area	Fiberglass PA Cable Plastic Lube Oil Other	8,496 lbs 16.5 lbs 330 lbs 30 gal	65,193	IFD	Port ext	(d)
122-0	0304, 0305, 0306	Intake structure Div I ventilation equip Div I intake fans 1AV503 1CV503 Div I exhaust fans 1AV504 1CV504	Plastic	4 lb	417	None	H O hose 2 Port ext	
122-0	0310, 0311, 0312	Intake structure Div II ventilation equip Div II intake fans 1BV503 1DV503 Div II exhaust fans 1BV504 1DV504	Plastic	4 lb	417	None	H O hose 2 Port ext	

Notes:

- (a) Floor coating included as combustible material.
- (b) Elevation 201 based on floor area of 21,372 square feet.
- (c) TSC Areas on 132' and 145' elevation Combustible Loading is based on NFPA Handbook 19th Edition, Volume II, Section 12, Chapter 5, Table 12.5.2, "Characteristic Fire Loads in Office Buildings" General Office Area loading of 8.0 lbs/sq. ft. of paper (88,000 Btu/lb).
- (d) Fiberglass includes TWS panels/troughs, pipe, PA, ladder. Plastic includes PVC coated steel conduit, post covers, and maintenance items: safety netting, floor mat. Lube oil is TWS chain bath. Other provides for maintenance equipment: dewatering pump/hose, monorail hoist, fan.

TABLE 9A-2
SHUTDOWN COMPONENT LIST (BY SYSTEM)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
1E Panel Room Chilled Water A	GJ-AC487	Panel	I	I	5704	89-1
1E Panel Room Chilled Water A	GJ-AK403	Control Area Chiller	I	I	5703	90-1-3
1E Panel Room Chilled Water A	GJ-AP414	Chiller H ₂ O Pump	I	I	5602	90-1-3
1E Panel Room Chilled Water A	GJ-FT-9666A1	Chw Loop A AK403 Outlet	I	I	5703	90-1-3
1E Panel Room Chilled Water A	GJ-TV-9667A	1E Pnl Rm Clr AVH408 Byp	I	I	5620	90-1-3
1E Panel Room Chilled Water A	GJ-TV-9768A	RSP Room OOVH316 cooling Coil	I	I	5501	90-1-3
1E Panel Room Chilled Water B	GJ-BC487	Panel	II	II	5704	89-1
1E Panel Room Chilled Water B	GJ-BK403	Control Area Chiller	II	II	5703	90-1-3
1E Panel Room Chilled Water B	GJ-BP414	Chilled H ₂ O Pump	II	II	5703	90-1-3
1E Panel Room Chilled Water B	GJ-FT-9666B1	Chw Loop B BK403 Outlet	II	II	5703	90-1-3
1E Panel Room Chilled Water B	GJ-TV-9667B	1E Pnl Rm Clr BVH408 Byp	II	II	5620	90-1-3
1E Panel Room Chilled Water B	GJ-TV-9768B	RSP Room OOVH316 Cooling Coil	II	II	5501	90-1-3
1E Panel Room HVAC A	GM-AC486	Control Panel	I	I	5620	88-1-2
1E Panel Room HVAC A	GM-AVH408	Supply Fan	I	I	5620	88-1-2
1E Panel Room HVAC A	GM-FD-9558A	Inlet Vanes	I	I	5620	88-1-2
1E Panel Room HVAC A	GM-FSL-9558A2	Air flow	I	I	5620	88-1-2
1E Panel Room HVAC A	GM-FT-9558A	Air Flow	I	I	5620	88-1-2
1E Panel Room HVAC A	GM-HD-9558A1	Outside Air	I	I	5620	88-1-2
1E Panel Room HVAC A	GM-TE-9558A	Discharge Temperature	I	I	5620	88-1-2
1E Panel Room HVAC A	GM-TY-9558A	Heater Control	I	I	5620	88-1-2
1E Panel Room HVAC B	GM-BC486	Control Panel	II	II	5620	88-1-2
1E Panel Room HVAC B	GM-BVH408	Supply Fan	II	II	5620	88-1-2
1E Panel Room HVAC B	GM-FD-9558B	Inlet Vanes	II	II	5620	88-1-2
1E Panel Room HVAC B	GM-FSL-9558B2	Air Flow	II	II	5620	88-1-2
1E Panel Room HVAC B	GM-FT-9558B	Air Flow	II	II	5620	88-1-2
1E Panel Room HVAC B	GM-HD-9558B1	Outside Air	II	II	5620	88-1-2
1E Panel Room HVAC B	GM-TE-9558B	Discharge Temperature	II	II	5620	88-1-2
1E Panel Room HVAC B	GM-TY-9558B	Heater Control	II	II	5620	88-1-2
Control Area Chilled Water A	GJ-AC490	Panel	I	I	5602	90-1-1
Control Area Chilled Water A	GJ-AK400	Control Area Chiller	I	I	5602	90-1-1
Control Area Chilled Water A	GJ-AP400	Chilled H ₂ O Pump	I	I	5602	90-1-1
Control Area Chilled Water A	GJ-FT-9648A2	Cont Room Chiller Loop A	I	I	5602	90-1-1
Control Area Chilled Water A	GJ-TE-9652A1	Chilled Water Temp	I	I	5602	90-1-1
Control Area Chilled Water A	GJ-TV-9634A	Cont Equip Rm Clr AVH407 Byp	I	I	5703	90-1-1
Control Area Chilled Water A	GJ-TV-9637A	Cont Room Clr AVH403 Byp	I	I	5602	90-1-1
Control Area Chilled Water B	GJ-BC490	Panel	II	II	5630	90-1-2
Control Area Chilled Water B	GJ-BK400	Control Area Chiller	II	II	5630	90-1-2
Control Area Chilled Water B	GJ-BP400	Chilled H ₂ O Pump	II	II	5630	90-1-2
Control Area Chilled Water B	GJ-FT-9648B2	Cont Room Chiller Loop B	II	II	5630	90-1-2
Control Area Chilled Water B	GJ-TE-9652B1	Chilled Water Temp	II	II	5630	90-1-2
Control Area Chilled Water B	GJ-TV-9634B	Cont Equip Rm Clr BVH407 Byp	II	II	5703	90-1-2

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Control Area Chilled Water B	GJ-TV-9637B	Cont Room Clr BVH403 Byp	II	II	5630	90-1-2
Control Area HVAC A	GK-ABH407	Control Equip Supply	I	I	5703	89-1
Control Area HVAC A	GK-FSL-9603A2	CERS AVH407 Discharge Air	I	I	5703	89-1
Control Area HVAC A	GK-FT-9603A	CERS AVH407 Supply Air	I	I	5703	89-1
Control Area HVAC A	GK-HD-9603A1	CERS AVH407 Outside Air	I	I	5703	89-1
Control Area HVAC A	GK-HD-9603A2	CERS AVH407 Supply Air	I	I	5703	89-1
Control Area HVAC A	GK-HD-9603A3	CERS AVH407 Return Air	I	I	5703	89-1
Control Area HVAC A	GK-TE-9603A	CERS AVH407 Supply Air	I	I	5704	89-1
Control Area HVAC A	GK-TT-9603A	CERS AVH407 Supply Air	I	I	5704	89-1
Control Area HVAC A	GK-TY-9603A	CERS AVH407 Supply Air	I	I	5703	89-1
Control Area HVAC B	GK-BVH407	Control Equip Supply	II	II	5703	89-1
Control Area HVAC B	GK-FSL-9603B2	CERS BVH407 Discharge Air	II	II	5703	89-1
Control Area HVAC B	GK-FT-9603B	CERS BVH407 Supply Air	II	II	5703	89-1
Control Area HVAC B	GK-HD-9603B1	CERS BVH407 Outside Air	II	II	5703	89-1
Control Area HVAC B	GK-HD-9603B2	CERS BVH407 Supply	II	II	5703	89-1
Control Area HVAC B	GK-HD-9603B3	CERS BVH407 Return Air	II	II	5703	89-1
Control Area HVAC B	GK-TE-9603B	CERS BVH407 Supply Air	II	II	5703	89-1
Control Area HVAC B	GK-TT-9603B	CERS BVH407 Supply Air	II	II	5703	89-1
Control Area HVAC B	GK-TY-9603B	CERS BVH407 Supply Air	II	II	5703	89-1
Control Room HVAC A	GK-AC485	Control Area HVAC Panel	I	I	5602	89-1
Control Room HVAC A	GK-AV415	Control Room Exhaust Fan A	I	I	5602	89-1
Control Room HVAC A	GK-AVH403	Control Room Supply	I	I	5602	89-1
Control Room HVAC A	GK-FD-9598A	Fan Inlet Vanes	I	I	5602	89-1
Control Room HVAC A	GK-FSL-9587A	Control Room AV415 Air Flow	I	I	5602	89-1
Control Room HVAC A	GK-FSL-9589A2	CRS AVH403 Heating Coil	I	I	5602	89-1
Control Room HVAC A	GK-FT-9589A	CRS AVH403 Supply air	I	I	5602	89-1
Control Room HVAC A	GK-HD-9589A1	MCR Exhaust Damper	I	I	5602	89-1
Control Room HVAC A	GK-HD-9589A1	CRS AVH403 Return Air	I	I	5602	89-1
Control Room HVAC A	GK-HD-9589A2	MCR Supply Damper	I	I	5602	89-1
Control Room HVAC A	GK-PDD-9587A	CRS AVH403 Pressure Control	I	I	5602	89-1
Control Room HVAC A	GK-PDT-9587A	CRS Fan Inlet Dif Pressure	I	I	5602	89-1
Control Room HVAC A	GK-SV-9588AA	Control Room Isol Ch C	I	I	5602	89-1
Control Room HVAC A	GK-SV-9588AB	Control Room Isol Ch D	II	I	5602	89-1
Control Room HVAC A	GK-TE-9589A	CRS AVH403 Supply Air	I	I	5602	89-1
Control Room HVAC A	GK-TE-9589A1	CRS AVH403 Supply Air	I	I	5510	89-1
Control Room HVAC B	GK-BC485	Control Area HVAC Panel	II	II	5630	89-1
Control Room HVAC B	GK-BV415	Control Room Exhaust Fan B	II	II	5630	89-1
Control Room HVAC B	GK-BVH403	Control Room Supply	II	II	5630	89-1
Control Room HVAC B	GK-FD-9598B	Fan Inlet Vanes	II	II	5630	89-1
Control Room HVAC B	GK-FSL-9587B	Control Room BV415 Air Flow	II	II	5630	89-1
Control Room HVAC B	GK-FSL-9589B2	CRS HVH403 Heating Coil	II	II	5630	89-1
Control Room HVAC B	GK-FT-9589B	CRS BVH403 Supply Air	II	II	5630	89-1
Control Room HVAC B	GK-HD-9589B1	MCR Exhaust Damper	II	II	5630	89-1
Control Room HVAC B	GK-HD-9589B1	CRS BVH403 Return Air	II	II	5630	89-1
Control Room HVAC B	GK-HD-9589B2	MCR Supply Damper	II	II	5630	89-1

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Control Room HVAC B	GK-PDD-9587B	CRS BVH403 Pressure Control	II	II	5630	89-1
Control Room HVAC B	GK-PDT-9587B	CRS Fan Inlet Dif Pressure	II	II	5630	89-1
Control Room HVAC B	GK-SV-9588BA	Control Room Isol Ch C	I	II	5630	89-1
Control Room HVAC B	GK-SV-9588BB	Control Room Isol Ch D	II	II	5630	89-1
Control Room HVAC B	GK-TE-9589B	CRS BVH403 Supply Air	II	II	5630	89-1
Control Room HVAC B	GK-TE-9589B1	CRS BVH403 Supply Air	II	II	5510	89-1
Core Spray Loop I	BE-AP206	Core Spray Pump A	I	I	4118	52-1
Core Spray Loop I	BE-CP206	Core Spray Pump C	I	I	4116	52-1
Core Spray Loop I	BE-FT-N003A	Loop I Flow	I	I	4116	52-1
Core Spray Loop I	BE-HV-F001A	Pump A Torus Suction	I	I	4102	52-1
Core Spray Loop I	BE-HV-F001C	Pump C Torus Suction	I	I	4102	52-1
Core Spray Loop I	BE-HV-F004A	Loop I Injection	I	I	4102	52-1
Core Spray Loop I	BE-HV-F005A	Loop I Injection	I	I	4329	52-1
Core Spray Loop I	BE-HV-F015A	Test return to Torus	I	I	4102	52-1
Core Spray Loop I	BE-HV-F031A	Min Flow Bypass	I	I	4102	52-1
Core Spray Loop II	BE-BP206	Core Spray Pump B	II	II	4104	52-1
Core Spray Loop II	BE-DP206	Core Spray Pump D	II	II	4105	52-1
Core Spray Loop II	BE-FT-N003B	Loop II Flow	II	II	4105	52-1
Core Spray Loop II	BE-HV-F001B	Pump B Torus Suction	II	II	4102	52-1
Core Spray Loop II	BE-HV-F001D	Pump D Torus Suction	II	II	4102	52-1
Core Spray Loop II	BE-HV-F004B	Loop II Injection	II	II	4321	52-1
Core Spray Loop II	BE-HV-F005B	Loop II Injection	II	II	4321	52-1
Core Spray Loop II	BE-HV-F015B	Test return to Torus	II	II	4102	52-1
Core Spray Loop II	BE-HV-F031B	Min Flow Bypass	II	II	4104	52-1
CRD Hydraulics	BF-SV-117	Pilot Scram Valve (Type of 93)	I	RPS I	4328	47-1
CRD Hydraulics	BF-SV-117	Pilot Scram Valve (Type of 92)	I	RPS I	4320	47-1
DG Room Recirc Sys A	GK-AC483	Panel	I	I	5704	88-1-1
DG Room Recirc Sys A	GM-AV412	Diesel Gen Room Recirc Fan	I	I	5211	88-1-1
DG Room Recirc Sys A	GM-EV412	Diesel Gen Room Recirc Fan	I	I	5211	88-1-1
DG Room Recirc Sys A	GM-FSL-9557A	Air Flow Low	I	I	5307	88-1-1
DG Room Recirc Sys A	GM-FSL-9557E	Air Flow Low	I	I	5307	88-1-1
DG Room Recirc Sys A	GM-TS-9557A	Diesel Room Temperature	I	I	5307	88-1-1
DG Room Recirc Sys A	GM-TS-9557E	Diesel Room Temperature	I	I	5307	88-1-1
DG Room Recirc Sys B	GK-BC483	Panel	II	II	5703	88-1-1
DG Room Recirc Sys B	GM-BV412	Diesel Gen Room Recirc Fan	II	II	5209	88-1-1
DG Room Recirc Sys B	GM-FSL-9557B	Air Flow Low	II	II	5209	88-1-1
DG Room Recirc Sys B	GM-FSL-9557F	Air Flow Low	II	II	5209	88-1-1
DG Room Recirc Sys B	GM-FV412	Diesel Gen Room Recirc Fan	II	II	5209	88-1-1
DG Room Recirc Sys B	GM-TS-9557B	Diesel Room Temperature	II	II	5305	88-1-1
DG Room Recirc Sys B	GM-TS-9557F	Diesel Room Temperature	II	II	5305	88-1-1
DG Room Recirc Sys C	GK-CC483	Panel	I	I	5704	88-1-1
DG Room Recirc Sys C	GM-CV412	Diesel Gen Room Recirc Fan	I	I	5210	88-1-1
DG Room Recirc Sys C	GM-FSL-9557C	Air Flow Low	I	I	5306	88-1-1
DG Room Recirc Sys C	GM-FSL-9557G	Air Flow Low	I	I	5306	88-1-1
DG Room Recirc Sys C	GM-GV412	Diesel Gen Room Recirc Fan	I	I	5210	88-1-1

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
DG Room Recirc Sys C	GM-TS-9557C	Diesel Room Temperature	I	I	5306	88-1-1
DG Room Recirc Sys C	GM-TS-9557G	Diesel Room Temperature	I	I	5306	88-1-1
DG Room Recirc Sys D	GK-DC483	Panel	II	II	5703	88-1-1
DG Room Recirc Sys D	GM-DV412	Diesel Gen Room Recirc Fan	II	II	5208	88-1-1
DG Room Recirc Sys D	GM-FSL-9557D	Air Flow Low	II	II	5208	88-1-1
DG Room Recirc Sys D	GM-FSL-9557H	Air Flow Low	II	II	5208	88-1-1
DG Room Recirc Sys D	GM-HV412	Diesel Gen Room Recirc Fan	II	II	5208	88-1-1
DG Room Recirc Sys D	GM-TS-9557D	Diesel Room Temperature	II	II	5304	88-1-1
DG Room Recirc Sys D	GM-TS-9557H	Diesel Room Temperature	II	II	5304	88-1-1
Diesel Generators - A	KJ-1AC422	Generator Panel	I	I	5416	30-1
Diesel Generators - A	KJ-1AC423	Diesel Panel	I	I	5416	30-1
Diesel Generators - A	KJ-AG400	DG and Auxiliaries	I	I	5307	30-1
Diesel Generators - A	KJ-AP401	Fuel Transfer Pump	I	I	5110	30-1
Diesel Generators - A	KJ-BP401	Fuel Transfer Pump	I	I	5110	30-1
Diesel Generators - B	KJ-1BC422	Generator Panel	II	II	5412	30-1
Diesel Generators - B	KJ-1BC423	Diesel Panel	II	II	5412	30-1
Diesel Generators - B	KJ-BG400	DG and Auxiliaries	II	II	5305	30-1
Diesel Generators - B	KJ-CP401	Fuel Transfer Pump	II	II	5108	30-1
Diesel Generators - B	KJ-DP401	Fuel Transfer Pump	II	II	5108	30-1
Diesel Generators - C	KJ-1CC422	Generator Panel	I	I	5414	30-1
Diesel Generators - C	KJ-1CC423	Diesel panel	I	I	5414	30-1
Diesel Generators - C	KJ-CG400	DG and Auxiliaries	I	I	5306	30-1
Diesel Generators - C	KJ-EP401	Fuel Transfer Pump	I	I	5109	30-1
Diesel Generators - C	KJ-FP401	Fuel Transfer Pump	I	I	5109	30-1
Diesel Generators - D	KJ-1DC422	Generator Panel	II	II	5410	30-1
Diesel Generators - D	KJ-1DC423	Diesel Panel	II	II	5410	30-1
Diesel Generators - D	KJ-DG400	DG and Auxiliaries	II	II	5304	30-1
Diesel Generators - D	KJ-GP401	Fuel Transfer Pump	II	II	5107	30-1
Diesel Generators - D	KJ-HP401	Fuel Transfer Pump	II	II	5107	30-1
Electrical Power - Div I	PB-10A401	4.16 kV Swgr	I	I	5417	NA
Electrical Power - Div I	PB-10A403	4.16 kV Swgr	I	I	5415	NA
Electrical Power - Div I	PH-10B212	480 V MCC	I	I	4309	NA
Electrical Power - Div I	PH-10B232	480 V MCC	I	I	4310	NA
Electrical Power - Div I	PG-10B410	480 V Swgr	I	I	5417	NA
Electrical Power - Div I	PH-10B411	480 V MCC	I	I	5417	NA
Electrical Power - Div I	PG-10B430	480 V Swgr	I	I	5415	NA
Electrical Power - Div I	PH-10B431	480 V MCC	I	I	5415	NA
Electrical Power - Div I	PG-10B450	480 V Swgr	I	I	5417	NA
Electrical Power - Div I	PH-10B451	480 V MCC	I	I	5417	NA
Electrical Power - Div I	PG-10B470	480 V Swgr	I	I	5415	NA
Electrical Power - Div I	PH-10B471	480 V MCC	I	I	5415	NA
Electrical Power - Div I	PH-10B553	480 V MCC	I	I	203	NA
Electrical Power - Div I	PH-10B573	480 V MCC	I	I	203	NA
Electrical Power - Div I	PJ-10D251	250 V DC MCC	I	I	4112	NA
Electrical Power - Div I	PK-10D410	125 V DC Swgr	I	I	5417	NA

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Electrical Power - Div I	PJ-10D421	250 V DC Batteries	I	I	5104	NA
Electrical Power - Div I	PJ-10D423	250 V DC Battery Chargers	I	I	5129	NA
Electrical Power - Div I	PK-10D430	125 V DC Swgr	I	I	5415	NA
Electrical Power - Div I	PK-10D436	125 V DC Swgr	I	I	5613	NA
Electrical Power - Div I	PJ-10D450	250 V DC Swgr	I	I	5129	NA
Electrical Power - Div I	PK-1AD411	125 V DC Batteries	I	I	5545	NA
Electrical Power - Div I	PK-1AD413	125 V DC Battery Chargers	I	I	5544	NA
Electrical Power - Div I	PK-1AD414	125 V DC Battery Chargers	I	I	5544	NA
Electrical Power - Div I	PK-1AD417	125 V DC Dist Panel	I	I	5417	NA
Electrical Power - Div I	PN-1AD481	120 V AC Power	I	I	5501	NA
Electrical Power - Div I	PN-1AD482	120 V AC Power	I	I	5616	NA
Electrical Power - Div I	PN-1AJ481	120 V AC UPS Dist Pnl	I	I	5501	NA
Electrical Power - Div I	PN-1AJ482	120 V AC UPS Dist Pnl	I	I	5616	NA
Electrical Power - Div I	PK-1CD411	125 V DC Batteries	I	I	5543	NA
Electrical Power - Div I	PK-1CD413	125 V DC Battery Chargers	I	I	5542	NA
Electrical Power - Div I	PK-1CD414	125 V DC Battery chargers	I	I	5542	NA
Electrical Power - Div I	PK-1CD417	125 V DC Dist Panel	I	I	5415	NA
Electrical Power - Div I	PK-1CD444	125 V DC Battery Chargers	I	I	5613	NA
Electrical Power - Div I	PK-1CD447	125 V DC Batteries	I	I	5614	NA
Electrical Power - Div I	PN-1CD481	120 V AC Power	I	I	5501	NA
Electrical Power - Div I	PN-1CD482	120 V AC Power	I	I	5613	NA
Electrical Power - Div I	PN-1CJ481	120 V AC UPS Dist Pnl	I	I	5501	NA
Electrical Power - Div I	PN-1CJ482	120 V AC UPS Dist Pnl	I	I	5613	NA
Electrical Power - Div I	PN-1YF401	120 V AC Fuse Pnl	I	I	5302	NA
Electrical Power - Div I	PN-1YF403	120 V AC Fuse Pnl	I	I	5302	NA
Electrical Power - Div II	PB-10A402	4.16 kV Swgr	II	II	5413	NA
Electrical Power - Div II	PB-10A404	4.16 kV Swgr	II	II	5411	NA
Electrical Power - Div II	PH-10B222	480 V MCC	II	II	4303	NA
Electrical Power - Div II	PH-10B242	480 V MCC	II	II	4201	NA
Electrical Power - Div II	PG-10B420	480 V Swgr	II	II	5413	NA
Electrical Power - Div II	PH-10B421	480 V MCC	II	II	5413	NA
Electrical Power - Div II	PG-10B440	480 V Swgr	II	II	5411	NA
Electrical Power - Div II	PH-10B441	480 V MCC	II	II	5411	NA
Electrical Power - Div II	PG-10B460	480 V Swgr	II	II	5413	NA
Electrical Power - Div II	PH-10B461	480 V MCC	II	II	5413	NA
Electrical Power - Div II	PG-10B480	480 V Swgr	II	II	5411	NA
Electrical Power - Div II	PH-10B481	480 V MCC	II	II	5411	NA
Electrical Power - Div II	PH-10B563	480 V MCC	II	II	207	NA
Electrical Power - Div II	PH-10B583	480 V MCC	II	II	207	NA
Electrical Power - Div II	PJ-10D261	250 V DC MCC	II	II	4108	NA
Electrical Power - Div II	PK-10D420	125 V DC Swgr	II	II	5413	NA
Electrical Power - Div II	PJ-10D431	250 V DC Batteries	II	II	5128	NA
Electrical Power - Div II	PJ-10D433	250 V DC Battery Chargers	II	II	5130	NA
Electrical Power - Div II	PK-10D440	125 V DC Swgr	II	II	5411	NA
Electrical Power - Div II	PK-10D446	125 V DC Swgr	II	II	5607	NA

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Electrical Power - Div II	PJ-10D460	250 V DC Swgr	II	II	5130	NA
Electrical Power - Div II	PK-1BD411	125 V DC Batteries	II	II	5541	NA
Electrical Power - Div II	PK-1BD413	125 V DC Battery Chargers	II	II	5540	NA
Electrical Power - Div II	PK-1BD414	125 V DC Battery Chargers	II	II	5540	NA
Electrical Power - Div II	PK-1BD417	125 V DC Dist Panel	II	II	5413	NA
Electrical Power - Div II	PN-1BD481	120 V AC power	II	II	5448	NA
Electrical Power - Div II	PN-1BD482	120 V AC power	II	II	5615	NA
Electrical Power - Div II	PN-1BJ481	120 V AC UPS Dist Pnl	II	II	5448	NA
Electrical Power - Div II	PN-1BJ482	120 V AC UPS Dist Pnl	II	II	5615	NA
Electrical Power - Div II	PK-1DD411	125 V DC Batteries	II	II	5539	NA
Electrical Power - Div II	PK-1DD413	125 V DC Battery chargers	II	II	5538	NA
Electrical Power - Div II	PK-1DD414	125 V DC Battery chargers	II	II	5538	NA
Electrical Power - Div II	PK-1DD417	125 V DC Dist Panel	II	II	5411	NA
Electrical Power - Div II	PK-1DD444	125 V DC Battery Chargers	II	II	5607	NA
Electrical Power - Div II	PK-1DD447	125 V DC Batteries	II	II	5609	NA
Electrical Power - Div II	PN-1DD481	120 V AC Power	II	II	5448	NA
Electrical Power - Div II	PN-1DD482	120 V AC Power	II	II	5607	NA
Electrical Power - Div II	PN-1DJ481	120 V AC UPS Dist Pnl	II	II	5448	NA
Electrical Power - Div II	PN-1DJ482	120 V AC UPS Dist Pnl	II	II	5607	NA
Electrical Power - Div II	PN-1YF402	120 V AC Fuse Pnl	II	II	5302	NA
Electrical Power - Div II	PN-1YF404	120 V AC Fuser Pnl	II	II	5302	NA
Feedwater	AE-HV-F011A	FW Iso Inside Containment	I	I	4220	41-1-1
Feedwater	AE-HV-F011B	FW Iso Inside Containment	I	I	4220	41-1-1
Feedwater	AE-HV-4144	FW Line Cross Tie Isol Vlv	I	I	4316	41-1-1
HPCI	BJ-OP204	Main HPCI Pump	I	I	4111	56-1
HPCI	BJ-OP217	HPCI Booster pump	I	I	4111	56-1
HPCI	BJ-AP228	HPCI Jockey pump	I	I	4111	56-1
HPCI	BJ-HV-8278	HPCI Injection to FW	I	I	4316	55-1
HPCI	BJ-HV-F004	Suction from CST	I	I	4111	55-1
HPCI	BJ-HV-F006	HPCI Injection to CS	I	I	4329	55-1
HPCI	BJ-HV-F007	HPCI Pump Discharge Vlv	I	I	4111	55-1
HPCI	BJ-HV-F008	Test return to CST	I	I	4203	55-1
HPCI	BJ-HV-F012	Min Flow Bypass	I	I	4102	55-1
HPCI	BJ-HV-F042	Suction from Torus	I	I	4102	55-1
HPCI	BJ-HV-F059	Water to HPCI Condenser	I	I	4111	55-1
HPCI	BJ-HV-4803	Supp Pool Lvl Instr Isol Valve	I	I	4102	55-1
HPCI	BJ-HV-4804	Supp Pool Lvl Instr Isol Valve	I	I	4102	55-1
HPCI	BJ-HV-4865	Supp Pool Lvl Instr Isol Valve	I	I	4102	55-1
HPCI	BJ-HV-4866	Supp Pool Lvl Instr Isol Valve	I	I	4102	55-1
HPCI	BJ-PT-N050	Pump Discharge Pressure	I	I	4112	55-1
HPCI	BJ-PT-N053	HPCI Pump Suction Pressure	I	I	4111	55-1
HPCI - Leak Detection	SK-TE-N025A	Pipe Tunnel	I	I	4327	25-1-2
HPCI - Leak Detection	SK-TE-N025C	Pipe Tunnel	I	I	4327	25-1-2
HPCI - Leak Detection	SK-TE-N025E	Torus Area	I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025G	Torus Area	I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025J	Torus Area	I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025L	Torus Area	I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025N	Torus Area	I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025R	Torus Area	I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N028A	Supply Duct	I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N028C	Supply Duct	I	I	4111	25-1-2

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
HPCI - Leak Detection	SK-TE-N029A	Exhaust Duct	I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N029C	Exhaust Duct	I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N030A	Energ Unit Cooler	I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N030C	Energ Unit Cooler	I	I	4111	25-1-2
HPCI Steam	FD-OP215	Condensate Pump	I	I	4111	56-1
HPCI Steam	FD-OP216	Vacuum Pump	I	I	4111	56-1
HPCI Steam	FD-OS211	HPCI Turbine	I	I	4111	56-1
HPCI Steam	FD-FT-N008	HPCI Pump Disch Flow	I	I	4112	55-1
HPCI Steam	FD-FV-4879	HPCI Turb Control Valve	I	I	4111	56-1
HPCI Steam	FD-FV-4880	HPCI Turb Stop Valve	I	I	4111	56-1
HPCI Steam	FD-HV-F001	HPCI Steam Isol Valve	I	I	4111	55-1
HPCI Steam	FD-HV-F002	HPCI Steam Isol Valve	I	I	4220	55-1
HPCI Steam	FD-HV-F003	HPCI Steam Isol Valve	I	I	4327	55-1
HPCI Steam	FD-HV-F071	HPCI Steam Exh Isol Valve	I	I	4102	55-1
HPCI Steam	FD-HV-F075	HPCI Vacuum Isol Valve	I	I	4102	55-1
HPCI Steam	FD-HV-F079	HPCI Vacuum Isol Valve	I	I	4102	55-1
HPCI Steam	FD-PDT-N057A	High Steam Flow	I	I	4215	55-1
HPCI Steam	FD-PDT-N057C	High Steam Flow	I	I	4219	55-1
HPCI Steam	FD-PT-N055A	Turb Exhaust Vent	I	I	4209	56-1
HPCI Steam	FD-PT-N055C	Turb Exhaust Vent	I	I	4209	56-1
HPCI Steam	FD-PT-N055E	Turb Exhaust Vent	I	I	4209	56-1
HPCI Steam	FD-PT-N055G	Turb Exhaust Vent	I	I	4209	56-1
HPCI Steam	FD-PT-N056A	Exhaust High Pressure	I	I	4112	56-1
HPCI Steam	FD-PT-N056E	Exhaust High Pressure	I	I	4112	56-1
HPCI Steam	FD-PT-N058A	HPCI Steam Pressure Trip	I	I	4215	55-1
HPCI Steam	FD-PT-N058C	HPCI Steam Pressure	I	I	4219	55-1
HPCI Steam	FD-PT-N058E	HPCI Steam Pressure	I	I	4215	55-1
HPCI Steam	FD-PT-N058G	HPCI Steam Pressure	I	I	4219	55-1
Main Steam - Div I	AB-SV-3673B	For Inboard MSIV AB-HV-F022A	I	I	4220	41-1-1
Main Steam - Div I	AB-SV-3675B	For Inboard MSIV AB-HV-F022B	I	I	4220	41-1-1
Main Steam - Div I	AB-SV-3677B	For Inboard MSIV AB-HV-F022C	I	I	4220	41-1-1
Main Steam - Div I	AB-SV-3679B	For Inboard MSIV AB-HV-F022D	I	I	4220	41-1-2
Main Steam - Div II	AB-SV-3674B	For Outboard MSIV AB-HV-F028A	II	II	4316	41-1-1
Main Steam - Div II	AB-SV-3676B	For Outboard MSIV AB-HV-F028B	II	II	4316	41-1-1
Main Steam - Div II	AB-SV-3678B	For Outboard MSIV AB-HV-F028C	II	II	4316	41-1-1
Main Steam - Div II	AB-SV-3680B	For Outboard MSIV AB-HV-F028D	II	II	4316	41-1-2
Nuclear Boiler	AB-HV-F016	Inboard MSIV Drain	I	I	4220	41-1-1
Nuclear Boiler	AB-HV-F019	Inboard MSIV Drain	II	II	4316	41-1-1
Nuclear Boiler Inst (RSP)	BB-LT-7854	Reactor Level	II	II	4205	42-1-1
Nuclear Boiler Inst (RSP)	BB-PT-7853A	Reactor Pressure	I	I	4215	42-1-1
Nuclear Boiler Inst (RSP)	BB-PT-7853D	Reactor Pressure	II	II	4202	42-1-1
Nuclear Boiler Inst (RSP)	BB-LT-7854-1	Reactor Level	II	II	4203	42-1-1
Nuclear Boiler Inst (RSP)	BB-PR-7853D	Reactor Pressure	II	II	4202	42-1-1
Nuclear Boiler Inst - I	BB-LR-R623A	Reactor Level Ch A	I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-LT-N091A	Reactor Level	I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-LT-3682A	Reactor Level	I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-LR-3682A-1	Reactor Level Ch A	I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-LI-3682A	Reactor Level Ch A	I	I	5510	42-1-1

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Nuclear Boiler Inst - I	BB-PT-3684A	Reactor Pressure	I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-PI-3684A	Reactor Pressure Ch A	I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-PR-R623A	Reactor Pressure Ch A	I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-PT-N078A	Reactor Pressure	I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-PDT-N004C	Reactor Level Ch C	I	I	4218	42-1-1
Nuclear Boiler Inst - I	BB-LI-R604C	Reactor Level Ch C	I	I	5510	42-1-1
Nuclear Boiler Inst - I	SM-LT-N081C	Reactor Level Ch Y*	I	I	4218	42-1-1
Nuclear Boiler Inst - I	BB-LI-R606C	Reactor Level Ch C	NSR**	NSR**	5510	42-1-1
Nuclear Boiler Inst - II	BB-LR-R623B	Reactor Level Ch B	II	II	5510	42-1-1
Nuclear Boiler Inst - II	BB-LT-N091B	Reactor Level	II	II	4203	42-1-1
Nuclear Boiler Inst - II	BB-PR-R623B	Reactor Pressure Ch B	II	II	5510	42-1-1
Nuclear Boiler Inst - II	BB-PT-N078B	Reactor Pressure	II	II	4203	42-1-1
Pri Cont Inst Gas - Div I	KL-HV-5126A	Supply Header Outboard Isln	I	I	4329	59-1-1
Pri Cont Inst Gas - Div I	KL-HV-5152A	Supply Header Inboard Isln	I	I	4220	59-1-1
Pri Cont Inst Gas - Div II	KL-HV-5126B	Supply Header Outboard Isln	II	II	4321	59-1-1
Pri Cont Inst Gas - Div II	KL-HV-5152B	Supply Header Inboard Isln	II	II	4220	59-1-1
RCIC	BD-OP203	RCIC pump	II	II	4110	50-1
RCIC	BD-BP228	RCIC Jockey pump	II	II	4110	50-1
RCIC	BD-HV-F010	Suction From CST	II	II	4110	49-1
RCIC	BD-HV-F012	Pump Disch	II	II	4110	49-1
RCIC	BD-HV-F013	RCIC Injection Valve	II	II	4316	49-1
RCIC	BD-HV-F022	RCIC Return to CST	II	II	4106	49-1
RCIC	BD-HV-F031	Suppression Pool Suction	II	II	4102	49-1
RCIC	BD-HV-F046	Water to RCIC Condenser	II	II	4110	50-1
RCIC	BD-PT-N050	To PISH-N650	II	II	4108	49-1
RCIC	BD-PT-N053	To PISH-N653	II	II	4210	50-1
RCIC	BD-SV-F019	Min Flow Valve	II	II	4102	49-1
RCIC - Leak Detection	SK-TE-N021B	Supply Duct	II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N021D	Supply Duct	II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N022B	Exhaust Duct	II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N022D	Exhaust Duct	II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N023B	Energ Unit Cooler	II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N023D	Energ Unit Cooler	II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N025B	Pipe Tunnel	II	II	4319	25-1-2
RCIC - Leak Detection	SK-TE-N025D	Pipe Tunnel	II	II	4319	25-1-2
RCIC - Leak Detection	SK-TE-N025F	Torus Area	II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025H	Torus Area	II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025K	Torus Area	II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025M	Torus Area	II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025P	Torus Area	II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025S	Torus Area	II	II	4102	25-1-2
RCIC Steam	FC-OP219	RCIC Gland Seal Pump	II	II	4110	50-1
RCIC Steam	FC-OP220	RCIC Condensate Pump	II	II	4110	50-1
RCIC Steam	FC-OS212	RCIC Turbine	II	II	4110	50-1
RCIC Steam	FC-FT-N003	RCIC Pump Discharge Flow	II	II	4108	49-1
RCIC Steam	FC-HV-4282	RCIC Turbine Trip/Thrtrl Valve	II	II	4110	50-1
RCIC Steam	FC-HV-4283	RCIC Turbine Gov Valve	II	II	4110	50-1
RCIC Steam	FC-HV-F007	Inboard Iso Steam	II	II	4220	49-1
RCIC Steam	FC-HV-F008	Outboard Iso Steam	II	II	4319	49-1
RCIC Steam	FC-HV-F045	RCIC Turbine Steam Stop Vlv	II	II	4110	50-1
RCIC Steam	FC-HV-F059	RCIC Steam Exh Isol Valve	II	II	4102	49-1
RCIC Steam	FC-HV-F060	RCIC Vac Pump Discharge Valve	II	II	4102	49-1

* Nuclear Steam Supply Shutoff System Channel Y (Same as Channel C)

** Non-Safety Related

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
RCIC Steam	FC-HV-F062	RCIC Vac Brkr Isol Valve	II	II	4102	49-1
RCIC Steam	FC-HV-F076	Iso Valves Bypass	II	II	4220	49-1
RCIC Steam	FC-HV-F084	RCIC Vac Brkr Isol Valve	II	II	4102	49-1
RCIC Steam	FC-PT-N055B	Vent Pressure Trip	II	II	4205	50-1
RCIC Steam	FC-PT-N055D	Vent Pressure Trip	II	II	4202	50-1
RCIC Steam	FC-PT-N055F	Vent Pressure Trip	II	II	4203	50-1
RCIC Steam	FC-PT-N055H	Vent Pressure Trip	II	II	4201	50-1
RCIC Steam	FC-PT-N056B	RCIC Turbine Exhaust Press	II	II	4108	50-1
RCIC Steam	FC-PT-N056F	RCIC Turbine Exhaust Press	II	II	4108	50-1
RCIC Steam	FC-PT-N057B	Steam High Flow	II	II	4203	49-1
RCIC Steam	FC-PT-N057D	Steam High Flow	II	II	4202	49-1
RCIC Steam	FC-PT-N058B	Steam Low Pressure Trip	II	II	4203	49-1
RCIC Steam	FC-PT-N058D	Steam Low Pressure Trip	II	II	4202	49-1
RCIC Steam	FC-PT-N058F	Steam Low Pressure Trip	II	II	4203	49-1
RCIC Steam	FC-PT-N058H	Steam Low Pressure Trip	II	II	4202	49-1
Reactor Bldg Unit Coolers I	GU-AC281	Unit Cooler Control Panel	I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-AVH209	HPCI Unit Cooler	I	I	4111	83-1
Reactor Bldg Unit Coolers I	GR-AVH210	RHR Unit Cooler	I	I	4113	83-1
Reactor Bldg Unit Coolers I	GR-AVH211	Core Spray Unit Cooler	I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-AVH214	SACS Unit Cooler	I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-BVH209	HPCI Unit Cooler	I	I	4111	83-1
Reactor Bldg Unit Coolers I	GU-CC281	Unit Cooler Control Panel	I	I	4310	83-1
Reactor Bldg Unit Coolers I	GR-CVH210	RHR Unit Cooler	I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-CVH211	Core Spray Unit Cooler	I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-CVH214	SACS Unit Cooler	II	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-EVH210	RHR Unit Cooler	I	I	4214	83-1
Reactor Bldg Unit Coolers I	GR-EVH211	Core Spray Unit Cooler	I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-FSL-9385A1	SACS Air Flow Switch	I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-FSL-9385C1	SACS Air Flow Switch	II	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-GVH210	RHR Unit Cooler	I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-GVH211	Core Spray Unit Cooler	I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-TE-9382A	HPCI Room Temp	I	I	4111	83-1
Reactor Bldg Unit Coolers I	GR-TE-9382B	HPCI Room Temp	I	I	4111	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383A	RHR A Room Temp	I	I	4113	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383C	RHR C Room Temp	I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383E	RHR A Room Temp	I	I	4214	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383G	RHR C Room Temp	I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384A	Core Spray Room Temp	I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384C	Core Spray Room Temp	I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384E	Core Spray Room Temp	I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384G	Core Spray Room Temp	I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-TE-9385A	SACS A&C Room Temp	I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-TE-9385C	SACS A&C Room Temp	I	I	4309	83-1
Reactor Bldg Unit Coolers II	GR-AVH208	RCIC Unit Cooler	II	II	4110	83-1
Reactor Bldg Unit Coolers II	GU-BC281	Unit Cooler Control Panel	II	II	4303	83-1

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Reactor Bldg Unit Coolers II	GR-BVH208	RCIC Unit Cooler	II	II	4110	83-1
Reactor Bldg Unit Coolers II	GR-BVH210	RHR Unit Cooler	II	II	4109	83-1
Reactor Bldg Unit Coolers II	GR-BVH211	Core Spray Unit Cooler	II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-BVH214	SACS Unit Cooler	I	II	4307	83-1
Reactor Bldg Unit Coolers II	GU-DC281	Unit Cooler Control Panel	II	II	4202	83-1
Reactor Bldg Unit Coolers II	GR-DVH210	RHR Unit Cooler	II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-DVH211	Core Spray Unit Cooler	II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-DVH214	SACS Unit Cooler	II	II	4307	83-1
Reactor Bldg Unit Coolers II	GR-FSL-9385B1	SACS Air Flow Switch	I	II	4307	83-1
Reactor Bldg Unit Coolers II	GR-FSL-9385D1	SACS Air Flow Switch	II	II	4307	83-1
Reactor Bldg Unit Coolers II	GR-FVH210	RHR Unit Cooler	II	II	4208	83-1
Reactor Bldg Unit Coolers II	GR-FVH211	Core Spray Unit Cooler	II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-HVH210	RHR Unit Cooler	II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-HVH211	Core Spray Unit	II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-TE-9381A	RCIC Room Temp	II	II	4110	83-1
Reactor Bldg Unit Coolers II	GR-TE-9381B	RCIC Room Temp	II	II	4110	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383B	RHR B Room Temp	II	II	4109	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383D	RHR D Room Temp	II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383F	RHR B Room Temp	II	II	4208	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383H	RHR D Room Temp	II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384B	Core Spray Room Temp	II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384D	Core Spray Room Temp	II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384F	Core Spray Room Temp	II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384H	Core Spray Room Temp	II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-TE-9385B	SACS B&D Room Temp	I	II	4307	83-1
Reactor Bldg Unit Coolers II	GR-TE-9385D	SACS B&D Room Temp	II	II	4307	83-1
Reactor Protection Sys (RSP)	SB-TE-3647J-2	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys (RSP)	SB-TE-3647L-2	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys (RSP)	SB-TE-3647M-2	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys (RSP)	SB-TE-3647Q-2	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys (RSP)	SB-TT-3647J-2	Suppression Pool Temperature	II	II	5605	41-1-2
Reactor Protection Sys (RSP)	SB-TT-3647L-2	Suppression Pool Temperature	II	II	5605	41-1-2
Reactor Protection Sys (RSP)	SB-TT-3647M-2	Suppression Pool Temperature	II	II	5605	41-1-2
Reactor Protection Sys (RSP)	SB-TT-3647Q-2	Suppression Pool Temperature	II	II	5605	41-1-2
Reactor Protection Sys - I	SB-TE-3647A-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647C-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647E-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647H-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647K-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647N-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647P-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647R-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3648A-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3648B-1	Suppression Pool Temperature	I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3648C-1	Suppression Pool Temperature	I	I	4102	41-1-2

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Reactor Protection Sys - II	SB-TE-3647B-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647D-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647F-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647G-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647J-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647L-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647M-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647Q-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3648D-1	Suppression Pool Temperature	II	II	4102	41-1-2
Reactor Recirculation A	BB-HV-F031A	React Recirc Pump Disch	I	I	4220	43-1-1
Reactor Recirculation B	BB-HV-F031B	React Recirc Pump Disch	II	II	4220	43-1-1
RHR	BC-HV-F008	Shutdown Cooling Outside Cont	II	I/II	4329	51-1-1
RHR	BC-HV-F009	Shutdown Cooling Inside Cont	I	I/II	4220	51-1-1
RHR	BC-HV-F040	To Radwaste	II	I/II	4102	51-1-1
RHR	BC-HV-F049	To Radwaste	I	I/II	4102	51-1-1
RHR A	BC-AP202	RHR Pump A	I	I	4313	51-1-2
RHR A	BC-FT-N015A	RHR Flow A	I	I	4215	51-1-2
RHR A	BC-HV-F003A	RHR HX Outlet	I	I	4113	51-1-2
RHR A	BC-HV-F004A	Torus Suction	I	I	4102	51-1-2
RHR A	BC-HV-F006A	Shutdown Suction to A loop	I	I	4113	51-1-2
RHR A	BC-HV-F007A	Min Flow Line	I	I	4102	51-1-2
RHR A	BC-HV-F015A	Shutdown Return	II	I	4329	51-1-2
RHR A	BC-HV-F016A	Containment Spray	I	I	4329	51-1-2
RHR A	BC-HV-F017A	LPCI Injection	I	I	4329	51-1-2
RHR A	BC-HV-F024A	Supp Pool Return	I	I	4102	51-1-2
RHR A	BC-HV-F027A	Torus Spray	I	I	4102	51-1-2
RHR A	BC-HV-F047A	RHR HX A Inlet	I	I	4214	51-1-2
RHR A	BC-HV-F048A	RHR HX A Bypass	I	I	4214	51-1-2
RHR A	BC-PDT-N058A	Interlock to F017A	I	I	4215	51-1-1
RHR B	BC-BP202	RHR Pump B	II	II	4109	51-1-1
RHR B	BC-FT-4435	RSP Flow Indication	II	II	4205	51-1-1
RHR B	BC-FT-N015B	RHR Flow B	II	II	4205	51-1-1
RHR B	BC-HV-F003B	RHR HX Outlet	II	II	4109	51-1-1
RHR B	BC-HV-F004B	Torus Suction	II	II	4102	51-1-1
RHR B	BC-HV-F006B	Shutdown Suction to B Loop	II	II	4109	51-1-1
RHR B	BC-HV-F007B	Min Flow Line	II	II	4102	51-1-2
RHR B	BC-HV-F015B	Shutdown Return	II	II	4321	51-1-1
RHR B	BC-HV-F016B	Containment Spray	II	II	4402	51-1-1
RHR B	BC-HV-F017B	LPCI Injection	II	II	4321	51-1-1
RHR B	BC-HV-F024B	Supp Pool Return	II	II	4102	51-1-1
RHR B	BC-HV-F027B	Torus Spray	II	II	4102	51-1-1
RHR B	BC-HV-F047B	RHR HX B Inlet	II	II	4208	51-1-1
RHR B	BC-HV-F048B	RHR HX B Bypass	II	II	4208	51-1-1
RHR B	BC-PDT-N058B	Interlock to F017B	II	II	4205	51-1-1
RHR C	BC-CP202	RHR Pump C	I	I	4114	51-1-2

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
RHR C	BC-FT-N015C	RHR Flow C	I	I	4114	51-1-2
RHR C	BC-HV-F004C	Torus Suction	I	I	4102	51-1-2
RHR C	BC-HV-F007C	Min Flow Line	I	I	4102	51-1-1
RHR C	BC-HV-F010A	Supp pool Return	I	I	4114	51-1-2
RHR C	BC-HV-F017C	LPCI Injection	I	I	4329	51-1-2
RHR C	BC-PDT-N058C	Interlock to F017C	I	I	4218	51-1-1
RHR D	BC-DP202	RHR Pump D	II	II	4107	51-1-1
RHR D	BC-FT-N015D	RHR Flow D	II	II	4107	51-1-1
RHR D	BC-HV-F004D	Torus Suction	II	II	4102	51-1-1
RHR D	BC-HV-F007D	Min Flow Line	II	II	4102	51-1-2
RHR D	BC-HV-F010B	Supp Pool Return	II	II	4107	51-1-1
RHR D	BC-HV-F017D	LPCI Injection	II	II	4321	51-1-1
RHR D	BC-PDT-N058D	Interlock to F017D	II	II	4202	51-1-1
RSP Supply Unit	GL-OVH316	RSP Room Supply	Non 1E	RSP	5501	93-0-2
RSP Supply Unit	GL-SV-9768	RSP Room Supply	Non 1E	RSP	5501	93-0-2
RWCU	BG-HV-F001	Inboard Cont Isolation	I	I	4220	44-1
RWCU	BG-HV-F004	Outboard Cont Isol	II	II	4505	44-1
SACS - Div I	EA-AC201	SACS Control Panel	I	I	4309	11-1-1
SACS - Div I	EG-AP210	SACS Pump	I	I	4309	11-1-1
SACS - Div I	EA-CC201	SACS Control Panel	I	I	4309	11-1-1
SACS - Div I	EG-CP210	SACS Pump	I	I	4309	11-1-1
SACS - Div I	EG-FT-2549A1	SACS Loop I Flow	I	I	4309	11-1-1
SACS - Div I	EG-HV-2491A	HX A1E201 Inlet	I	I	4309	11-1-1
SACS - Div I	EG-HV-2494A	HX A2E201 Inlet	I	I	4309	11-1-1
SACS - Div I	EG-HV-2512A	RHR HX AE205 Isol Valve	I	I	4214	11-1-1
SACS - Div I	EG-HV-2522A	SACS Supply Valve to TACS	I	I	4309	11-1-1
SACS - Div I	EG-HV-2522C	SACS Supply Valve to TACS	I	I	4309	11-1-1
SACS - Div I	EG-SV-2290A	RHR Pump A Room Unit Cooler A	I	I	4113	11-1-2
SACS - Div I	EG-SV-2290C	RHR Pump C Room Unit Cooler C	I	I	4114	11-1-2
SACS - Div I	EG-SV-2290E	RHR Pump A Room Unit Cooler E	I	I	4113	11-1-2
SACS - Div I	EG-SV-2290G	RHR Pump C Room Unit Cooler G	I	I	4114	11-1-2
SACS - Div I	EG-SV-2292A	HPCI Pump Room Unit Cooler A	I	I	4111	11-1-2
SACS - Div I	EG-SV-2292B	HPCI Pump Room Unit Cooler B	I	I	4111	11-1-2
SACS - Div I	EG-SV-2325A	CS Pump Room A Unit Cooler A	I	I	4118	11-1-2
SACS - Div I	EG-SV-2325C	CS Pump Room C Unit Cooler C	I	I	4116	11-1-2
SACS - Div I	EG-SV-2325E	CS Pump Room A Unit Cooler E	I	I	4118	11-1-2
SACS - Div I	EG-SV-2325G	CS Pump Room C Unit Cooler G	I	I	4116	11-1-2
SACS - Div I	EG-SV-2395A	DG A HXS Cooling Water	I	I	5211	12-1-1
SACS - Div I	EG-SV-2395C	DG C HXS Cooling Water	I	I	5210	12-1-1
SACS - Div I	EG-SV-2398A	DG A Room Unit Cooler A	I	I	5211	12-1-1
SACS - Div I	EG-SV-2398C	DG A Room Unit Cooler C	I	I	5210	12-1-1
SACS - Div I	EG-SV-2398E	DG A Room Unit Cooler E	I	I	5211	12-1-1
SACS - Div I	EG-SV-2398G	DG C Room Unit Cooler G	I	I	5210	12-1-1
SACS - Div I	EG-SV-2520A	RHR Pump AP202 Cooling Coil	I	I	4113	11-1-1
SACS - Div I	EG-SV-2520C	RHR Pump CP202 Cooling Coil	I	I	4114	11-1-1
SACS - Div I	EG-TE-2535A	SACS A1/A2 HX Bypass Temp.	I	I	4309	11-1-1
SACS - Div I	EG-TE-N005A	RHR HX A SACS Temp.	I	I	4113	11-1-1

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
SACS - DIV II	EA-BC201	SACS Control Panel	II	II	4307	11-1-1
SACS - DIV II	EG-BP210	SACS Pump	II	II	4307	11-1-1
SACS - DIV II	EA-DC201	SACS Control Panel	II	II	4307	11-1-1
SACS - DIV II	EG-DP210	SACS Pump	II	II	4307	11-1-1
SACS - DIV II	EG-FT-2549B1	SACS Loop II Flow	II	II	4307	11-1-1
SACS - DIV II	EG-HV-2491B	HX B1E201 Inlet	II	II	4307	11-1-1
SACS - DIV II	EG-HV-2494B	HX B2E201 Inlet	II	II	4307	11-1-1
SACS - DIV II	EG-HV-2512B	RHR HX BE205 Isol Valve	II	II	4208	11-1-1
SACS - DIV II	EG-HV-2522B	SACS Supply Valve to TACS	II	II	4307	11-1-1
SACS - DIV II	EG-HV-2522D	SACS Supply Valve to TACS	II	II	4307	11-1-1
SACS - DIV II	EG-SV-2290B	RHR Pump B Room Unit Cooler B	II	II	4109	11-1-2
SACS - DIV II	EG-SV-2290D	RHR Pump D Room Unit Cooler D	II	II	4107	11-1-2
SACS - Div II	EG-SV-2290F	RHR Pump B Room Unit Cooler F	II	II	4109	11-1-2
SACS - DIV II	EG-SV-2290H	RHR Pump D Room Unit Cooler H	II	II	4107	11-1-2
SACS - DIV II	EG-SV-2293A	RCIC Pump Room Unit Cooler A	II	II	4110	11-1-2
SACS - DIV II	EG-SV-2293B	RCIC Pump Room Unit Cooler B	II	II	4110	11-1-2
SACS - DIV II	EG-SV-2325B	CS Pump Room B Unit Cooler B	II	II	4104	11-1-2
SACS - DIV II	EG-SV-2325D	CS Pump Room D Unit Cooler D	II	II	4105	11-1-2
SACS - DIV II	EG-SV-2325F	CS Pump Room B Unit Cooler F	II	II	4104	11-1-2
SACS - DIV II	EG-SV-2325H	CS Pump Room D Unit Cooler H	II	II	4105	11-1-2
SACS - DIV II	EG-SV-2395B	DG B HXS Cooling Water	II	II	5209	12-1-1
SACS - DIV II	EG-SV-2395D	DG D HXS Cooling Water	II	II	5208	12-1-1
SACS - DIV II	EG-SV-2398B	DG B Room Unit Cooler B	II	II	5209	12-1-1
SACS - DIV II	EG-SV-2398D	DG D Room Unit Cooler D	II	II	5208	12-1-1
SACS - DIV II	EG-SV-2398F	DG B Room Unit Cooler F	II	II	5209	12-1-1
SACS - DIV II	EG-SV-2398H	DG D Room Unit Cooler H	II	II	5208	12-1-1
SACS - DIV II	EG-SV-2520B	RHR Pump BP202 Cooling Coil	II	II	4109	11-1-1
SACS - DIV II	EG-SV-2520D	RHR Pump DP202 Cooling Coil	II	II	4107	11-1-1
SACS - DIV II	EG-TE-2535B	SACS B1/B2 HX Bypass Temp.	II	II	4307	11-1-1
SACS - DIV II	EG-TE-N005B	RHR HX B SACS Temp.	II	II	4109	11-1-1
SACS - RSP	EG-FT-2549B3	SACS Loop II Flow - RSP Ind	II	II	4307	11-1-1
Safety Relief Valves	SN-SV-3652A	PSV-F013A Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3652B	PSV-F013A Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3653A	PSV-F013B Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	SN-SV-3653B	PSV-F013B Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	SN-SV-3654A	PSV-F013C Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3654B	PSV-F013C Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3655A	PSV-F013D Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	SN-SV-3655B	PSV-F013D Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3656A	PSV-F013J Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3657A	PSV-F013F Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3658A	PSV-F013G Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3659A	PSV-F013H Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3660A	PSV-F013R Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3661A	PSV-F013K Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3662A	PSV-F013L Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3663A	PSV-F013M Safety Relief Valve	II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3664A	PSB-F013P Safety Relief Valve	II	II	4220	41-1-2

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
Safety Relief Valves	SN-SV-3665A	PSV-F013E Safety Relief Valve	II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3665B	PSV-F013E Safety Relief Valve	II	I	4220	41-1-2
Service Water - Div I	EA-AC515	Traveling Screen Panel	I	I	204	10-1-1
Service Water - Div I	EA-AC516	Service Water Pump Panel	I	I	204	10-1-1
Service Water - Div I	EA-AP502	Service Water Pump	I	I	204	10-1-1
Service Water - Div I	EA-AS501	Traveling Screen	I	I	TS RM	10-1-1
Service Water - Div I	EA-CC515	Traveling Screen Panel	I	I	204	10-1-1
Service Water - Div I	EA-CC516	Service Water Pump Panel	I	I	204	10-1-1
Service Water - Div I	EA-CP502	Service Water Pump	I	I	204	10-1-1
Service Water - Div I	EA-CS501	Traveling Screen	I	I	TS RM	10-1-1
Service Water - Div I	EA-HV-2197A	Strainer Disch To Fish Trough	I	I	204	10-1-1
Service Water - Div I	EA-HV-2197C	Strainer Dish to Fish Trough	I	I	204	10-1-1
Service Water - Div I	EA-HV-2198A	Pump A Discharge Valve	I	I	107	10-1-1
Service Water - Div I	EA-HV-2198C	Pump C Discharge Valve	I	I	107	10-1-1
Service Water - Div I	EA-HV-2355A	SACS A2 Disch	I	I	4309	10-1-2
Service Water - Div I	EA-HV-2371A	SACS A1 Discharge	I	I	4309	10-1-2
Service Water - Div I	EA-PDT-2354A	SACS HX A1 DP	I	I	4309	10-1-2
Service Water - Div I	EA-PDT-2373A	SACS HX A2 DP	I	I	4309	10-1-2
Service Water - Div II	EA-BC515	Traveling Screen Panel	II	II	208	10-1-1
Service Water - Div II	EA-BC516	Service Water Pump Panel	II	II	208	10-1-1
Service Water - Div II	EA-BP502	Service Water Pump	II	II	208	10-1-1
Service Water - Div II	EA-BB501	Traveling Screen	II	II	TS RM	10-1-1
Service Water - Div II	EA-DC515	Traveling Screen Panel	II	II	208	10-1-1
Service Water - Div II	EA-DC516	Service Water Pump Panel	II	II	208	10-1-1
Service Water - Div II	EA-DP502	Service Water Pump	II	II	208	10-1-1
Service Water - Div II	EA-DS501	Traveling Screen	II	II	TS RM	10-1-1
Service Water - Div II	EA-HV-2197B	Strainer Disch to Fish trough	II	II	208	10-1-1
Service Water - Div II	EA-HV-2197D	Strainer Disch to Fish trough	II	II	208	10-1-1
Service Water - Div II	EA-HV-2198B	Pump B Discharge Valve	II	II	110	10-1-1
Service Water - Div II	EA-HV-2198D	Pump D Discharge Valve	II	II	110	10-1-1
Service Water - Div II	EA-HV-2204	Loop B RACS HX Header Valve	II	II	4307	10-1-1
Service Water - Div II	EA-HV-2355B	SACS B2 Discharge	II	II	4307	10-1-2
Service Water - Div II	EA-HV-2371B	SACS B1 Discharge	II	II	4307	10-1-2
Service Water - Div II	EA-PDT-2354B	SACS HX B1 DP	II	II	4307	10-1-2
Service Water - Div II	EA-PDT-2373B	SACS HX B2 DP	II	II	4307	10-1-2
Switchgear Room Unit Cooler A	GM-AVH401	Switchgear Rm Unit Cooler	I	I	5629	88-1-1
Switchgear Room Unit Cooler A	GM-HD-9549A	Outside Air	I	I	5612	88-1-1
Switchgear Room Unit Cooler B	GM-BVH401	Switchgear Rm Unit Cooler	II	II	5606	88-1-1
Switchgear Room Unit Cooler B	GM-HD-9549B	Outside Air	II	II	5605	88-1-1
Switchgear Room Unit Cooler C	GM-CVH401	Switchgear Rm Unit Cooler	I	I	5629	88-1-1
Switchgear Room Unit Cooler C	GM-HD-9549C	Outside Air	I	I	5612	88-1-1
Switchgear Room Unit Cooler D	GM-DVH401	Switchgear RM Unit Cooler	II	II	5606	88-1-1
Switchgear Room Unit Cooler D	GM-HD-9549D	Outside Air	II	II	5605	88-1-1
SWS HVAC Supply & Exhaust A	GQ-AC581	Intake Struc HVAC Panel	I	I	204	95-0
SWS HVAC Supply & Exhaust A	GQ-AV503	Intake Struc Supply Fan	I	I	307	95-0
SWS HVAC Supply & Exhaust A	GQ-AV504	Intake Struc Exhaust Fan	I	I	305	95-0

TABLE 9A-2 (Cont)

System	Component	Function	Elec Div.	Mech. Div.	Room No.	P&ID
SWS HVAC Supply & Exhaust A	GQ-TD-9773A1	Outside Air Damper	I	I	306	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A1A	Damper Actuator	I	I	306	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A1B	Damper Actuator	I	I	306	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A2	Intake Stru Return Air	I	I	305	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A3	Intake Stru Exhaust Air	I	I	304	95-0
SWS HVAC Supply & Exhaust A	GQ-TE-9773A	Intake Stru A&C Room Temp	I	I	204	95-0
SWS HVAC Supply & Exhaust B	GQ-BC581	Intake Stru HVAC Panel	II	II	208	95-0
SWS HVAC Supply & Exhaust B	GQ-BV503	Intake Struc Supply Fan	II	II	312	95-0
SWS HVAC Supply & Exhaust B	GQ-BV504	Intake Struc Exhaust Fan	II	II	311	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B1	Outside Air Damper	II	II	312	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B1A	Damper Actuator	II	II	312	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B1B	Damper Actuator	II	II	311	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B2	Intake Stru Return Air	II	II	311	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B3	Intake Stru Exhaust Air	II	II	310	95-0
SWS HVAC Supply & Exhaust B	GQ-TE-9773B	Intake Stru B&D Room Temp	II	II	208	95-0
SWS HVAC Supply & Exhaust C	GQ-CC581	Intake Stru HVAC Panel	I	I	204	95-0
SWS HVAC Supply & Exhaust C	GQ-CV503	Intake Struc Intake Fan	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-CV504	Intake Struc Exhaust Fan	I	I	305	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C1	Outside Air Damper	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C1A	Damper Actuator	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C1B	Damper Actuator	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C2	Intake Stru Return Air	I	I	305	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C3	Intake Stru Exhaust Air	I	I	304	95-0
SWS HVAC Supply & Exhaust C	GQ-TE-9773C	Intake Stru A&C Room Temp	I	I	204	95-0
SWS HVAC Supply & Exhaust D	GQ-DC581	Intake Stru HVAC Panel	II	II	208	95-0
SWS HVAC Supply & Exhaust D	GQ-DV503	Intake Struc Intake Fan	II	II	312	95-0
SWS HVAC Supply & Exhaust D	GQ-DV504	Exhaust Struc Intake Fan	II	II	311	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D1	Outside Air Damper	II	II	312	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D1A	Damper Actuator	II	II	312	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D1B	Damper Actuator	II	II	311	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D2	Intake Stru Return Air	II	II	311	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D3	Intake Stru Exhaust Air	II	II	310	95-0
SWS HVAC Supply & Exhaust D	GQ-TE-9773D	Intake Stru B&D Room Temp	II	II	208	95-0
Trav Screen Motor Rm HVAC A	GQ-QAV558	Traveling Screen Rm Fan	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC A	GQ-TD-9774A1	Trav Screen Room Return Air	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC A	GQ-TD-9774A2	Trav Screen Room Outside Air	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC A	GQ-TE-9774A	Trav Screen Room Air Temp	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC B	GQ-OBV558	Traveling Screen Rm Fan	II	II	TS RM	95-0
Trav Screen Motor Rm HVAC B	GQ-TD-9774B1	Trav Screen Room Return Air	II	II	TS RM	95-0

TABLE 9A-2 (Cont)

<u>System</u>	<u>Component</u>	<u>Function</u>	<u>Elec Div.</u>	<u>Mech. Div.</u>	<u>Room No.</u>	<u>P&ID</u>
Trav Screen Motor Rm HVAC B	GQ-TD-9774B2	Trav Screen Room Outside Air	II	II	TS RM	95-0
Trav Screen Motor Rm HVAC B	GQ-TE-9774B	Trav Screen Room Air Temp	II	II	TS RM	95-0

TABLE 9A-3
SHUTDOWN COMPONENT LIST (By Fire Area)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Traveling Screen Motor Room			I or II				
Service Water - Div I	EA-AS501	Traveling Screen	I	I	I	TS RM	10-1-1
Service Water - Div I	EA-CS501	Traveling Screen	I	I	I	TS RM	10-1-1
Service Water - Div II	EA-BS501	Traveling Screen	II	II	II	TS RM	10-1-1
Service Water - Div II	EA-DS501	Traveling Screen	II	II	II	TS RM	10-1-1
Trav Screen Motor Rm HVAC A	GQ-OAV558	Traveling Screen Rm Fan	I	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC A	GQ-TD-9774A1	Trav Screen Room Return Air	I	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC A	GQ-TD-9774A2	Trav Screen Room Outside Air	I	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC A	GQ-TE-9774A	Trav Screen Room Air Temp	I	I	I	TS RM	95-0
Trav Screen Motor Rm HVAC B	GQ-OBV558	Traveling Screen Rm Fan	II	II	II	TS RM	95-0
Trav Screen Motor Rm HVAC B	GQ-TD-9774B1	Trav Screen Room Return Air	II	II	II	TS RM	95-0
Trav Screen Motor Rm HVAC B	GQ-TD-9774B2	Trav Screen Room Outside Air	II	II	II	TS RM	95-0
Trav Screen Motor Rm HVAC B	GQ-TE-9774B	Trav Screen Room Air Temp	II	II	II	TS RM	95-0
Service Water Intake Division I			II				
Electrical Power - Div I	PH-10B553	480 V MCC	I	I	I	203	NA
Electrical Power - Div I	PH-10B573	480 V MCC	I	I	I	203	NA
Service Water - Div I	EA-AC515	Traveling Screen Panel	I	I	I	204	10-1-1
Service Water - Div I	EA-AC516	Service Water Pump Panel	I	I	I	204	10-1-1
Service Water - Div I	EA-AP502	Service Water Pump	I	I	I	204	10-1-1
Service Water - Div I	EA-CC515	Traveling Screen Panel	I	I	I	204	10-1-1
Service Water - Div I	EA-CC516	Service Water Pump Panel	I	I	I	204	10-1-1
Service Water - Div I	EA-CP502	Service Water Pump	I	I	I	204	10-1-1
Service Water - Div I	EA-HV-2197A	Strainer Disch to Fish Trough	I	I	I	204	10-1-1
Service Water - Div I	EA-HV-2197C	Strainer Disch to Fish Trough	I	I	I	204	10-1-1
Service Water - Div I	EA-HV-2198A	Pump A Discharge Valve	I	I	I	107	10-1-1
Service Water - Div I	EA-HV-2198C	Pump C Discharge Valve	I	I	I	107	10-1-1
SWS HVAC Supply & Exhaust A	GQ-AC581	Intake Stru HVAC Panel	I	I	I	204	95-0
SWS HVAC Supply & Exhaust A	GQ-AV503	Intake Struc Supply Fan	I	I	I	306	95-0
SWS HVAC Supply & Exhaust A	GQ-AV504	Intake Struc Exhaust Fan	I	I	I	305	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A1	Outside Air Damper	I	I	I	306	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A1A	Damper Actuator	I	I	I	306	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A1B	Damper Actuator	I	I	I	306	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A2	Intake Stru Return Air	I	I	I	305	95-0
SWS HVAC Supply & Exhaust A	GQ-TD-9773A3	Intake Stru Exhaust Air	I	I	I	304	95-0
SWS HVAC Supply & Exhaust A	GQ-TE-9773A	Intake Stru A&C Room Temp	I	I	I	204	95-0
SWS HVAC Supply & Exhaust C	GQ-CC581	Intake Stru HVAC Panel	I	I	I	204	95-0
SWS HVAC Supply & Exhaust C	GQ-CV503	Intake Struc Intake Fan	I	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-CV504	Intake Struc Exhaust Fan	I	I	I	305	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C1	Outside Air Damper	I	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C1A	Damper Actuator	I	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C1B	Damper Actuator	I	I	I	306	95-0
SWS HVAC Supply & Exhaust C	GQ-TD-9773C2	Intake Stru Return Air	I	I	I	305	95-0

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
SWS HVAC Supply & Exhaust C	GQ-TD-9773C3	Intake Stru Exhaust Air	I	I	I	304	95-0
SWS HVAC Supply & Exhaust C	GQ-TE-9773C	Intake Stru A&C Room Temp		I	I	204	95-0
Service Water Intake Division II							
Electrical Power - Div II	PH-10B563	480 V MCC		II	II	207	NA
Electrical Power - Div II	PH-10B583	480 V MCC		II	II	207	NA
Service Water - Div II	EA-BC515	Traveling Screen Panel		II	II	208	10-1-1
Service Water - Div II	EA-BC516	Service Water Pump Panel		II	II	208	10-1-1
Service Water - Div II	EA-BP502	Service Water Pump		II	II	208	10-1-1
Service Water - Div II	EA-DC515	Traveling Screen Panel		II	II	208	10-1-1
Service Water - Div II	EA-DC516	Service Water Pump Panel		II	II	208	10-1-1
Service Water - Div II	EA-DP502	Service Water Pump	II	II	II	208	10-1-1
Service Water - Div II	EA-HV-2197B	Strainer Disch to Fish Trough		II	II	208	10-1-1
Service Water - Div II	EA-HV-2197D	Strainer Disch to Fish Trough		II	II	208	10-1-1
Service Water - Div II	EA-HV-2198B	Pump B Discharge Valve		II	II	110	10-1-1
Service Water - Div II	EA-HV-2198D	Pump D Discharge Valve		II	II	110	10-1-1
SWS HVAC Supply & Exhaust B	GQ-BC581	Intake Stru HVAC Panel		II	II	208	95-0
SWS HVAC Supply & Exhaust B	GQ-BV503	Intake Struc Supply Fan		II	II	312	95-0
SWS HVAC Supply & Exhaust B	GQ-BV504	Intake Struc Exhaust Fan		II	II	311	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B1	Outside Air Damper		II	II	312	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B1A	Damper Actuator		II	II	312	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B1B	Damper Actuator	II	II	II	311	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B2	Intake Stru Return Air		II	II	311	95-0
SWS HVAC Supply & Exhaust B	GQ-TD-9773B3	Intake Stru Exhaust Air		II	II	310	95-0
SWS HVAC Supply & Exhaust B	GQ-TE-9773B	Intake Stru B&D Room Temp		II	II	208	95-0
SWS HVAC Supply & Exhaust D	GQ-DC581	Intake Stru HVAC Panel		II	II	208	95-0
SWS HVAC Supply & Exhaust D	GQ-DV503	Intake Struc Intake Fan		II	II	312	95-0
SWS HVAC Supply & Exhaust D	GQ-DV504	Intake Struc Exhaust Fan		II	II	311	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D1	Outside Air Damper		II	II	312	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D1A	Damper Actuator		II	II	312	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D1B	Damper Actuator	II	II	II	311	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D2	Intake Stru Return Air		II	II	311	95-0
SWS HVAC Supply & Exhaust D	GQ-TD-9773D3	Intake Stru Exhaust Air		II	II	310	95-0
SWS HVAC Supply & Exhaust D	GQ-TE-9773D	Intake Stru B&D Room Temp		II	II	208	95-0
Reactor Building Torus Room (North)			I				
Core Spray Loop I	BE-HV-F001A	Pump A Torus Suction		I	I	4102	52-1
Core Spray Loop I	BE-HV-F001C	Pump C Torus Suction		I	I	4102	52-1
Core Spray Loop I	BE-HV-F004A	Loop I Injection		I	I	4102	52-1
Core Spray Loop I	BE-HV-F005A	Loop I Injection		I	I	4329	52-1
Core Spray Loop I	BE-HV-F015A	Test Return to Torus		I	I	4102	52-1
Core Spray Loop I	BE-HV-F031A	Min Flow Bypass		I	I	4102	52-1
HPCI	BJ-HV-F006	HPCI Injection to CS		I	I	4329	55-1
HPCI	BJ-HV-F012	Min Flow Bypass		I	I	4102	55-1
HPCI	BJ-HV-F042	Suction from Torus		I	I	4102	55-1
HPCI	BJ-HV-4803	Supp Pool Lvl Instr Isol Valve	I	I	I	4102	55-1
HPCI	BJ-HV-4804	Supp Pool Lvl Instr Isol Valve		I	I	4102	55-1
HPCI	BJ-HV-4865	Supp Pool Lvl Instr Isol Valve		I	I	4102	55-1
HPCI	BJ-HV-4866	Supp Pool Lvl Instr Isol Valve		I	I	4102	55-1
HPCI - Leak Detection	SK-TE-N025A	Pipe Tunnel		I	I	4327	25-1-2
HPCI - Leak Detection	SK-TE-N025C	Pipe Tunnel		I	I	4327	25-1-2

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
HPCI - Leak Detection	SK-TE-N025E	Torus Area		I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025G	Torus Area		I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025J	Torus Area		I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025L	Torus Area		I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025N	Torus Area		I	I	4102	25-1-2
HPCI - Leak Detection	SK-TE-N025R	Torus Area		I	I	4102	25-1-2
HPCI Steam	FD-HV-F003	HPCI Steam Isol Valve		I	I	4327	55-1
HPCI Steam	FD-HV-F071	HPCI Steam Exh Isol Valve		I	I	4102	55-1
HPCI Steam	FD-HV-F075	HPCI Vacuum Isol Valve		I	I	4102	55-1
HPCI Steam	FD-HV-F079	HPCI Vacuum Isol Valve		I	I	4102	55-1
Pri Cont Inst Gas - Div I	KL-HV-5126A	Supply Header Outboard Isln		I	I	4329	59-1-1
Reactor Protection Sys - I	SB-TE-3647A-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647C-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647E-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647H-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647K-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647N-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647P-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3647R-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3648A-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3648B-1	Suppression Pool Temperature		I	I	4102	41-1-2
Reactor Protection Sys - I	SB-TE-3648C-1	Suppression Pool Temperature		I	I	4102	41-1-2
RHR	BC-HV-F008	Shutdown Cooling Outside Cont		II	I/II	4329	51-1-1
RHR	BC-HV-F040	To Radwaste		II	I/II	4102	51-1-1
RHR	BC-HV-F049	To Radwaste		I	I/II	4102	51-1-1
RHR A	BC-HV-F004A	Torus Suction		I	I	4102	51-1-2
RHR A	BC-HV-F007A	Min Flow Line		I	I	4102	51-1-2
RHR A	BC-HV-F015A	Shutdown Return		II	I	4329	51-1-2
RHR A	BC-HV-F016A	Containment Spray		I	I	4329	51-1-2
RHR A	BC-HV-F017A	LPCI Injection		I	I	4329	51-1-2
RHR A	BC-HV-F024A	Supp Pool Return		I	I	4102	51-1-2
RHR A	BC-HV-F027A	Torus Spray		I	I	4102	51-1-2
RHR C	BC-HV-F004C	Torus Suction		I	I	4102	51-1-2
RHR C	BC-HV-F007C	Min Flow Line		I	I	4102	51-1-1
RHR C	BC-HV-F017C	LPCI Injection		I	I	4329	51-1-2
Reactor Building Torus Room (South)			I				
Core Spray Loop II	BE-HV-V001B	Pump B Torus Suction		II	II	4102	52-1
Core Spray Loop II	BE-HV-V001D	Pump D Torus Suction		II	II	4102	52-1
Core Spray Loop II	BE-HV-F004B	Loop II Injection		II	II	4321	52-1
Core Spray Loop II	BE-HV-F005B	Loop II Injection		II	II	4321	52-1
Core Spray Loop II	BE-HV-F015B	Test Return to Torus		II	II	4102	52-1
Pri Cont Inst Gas - Div II	KL-HV-5126B	Supply Header Outboard Isln		II	II	4321	59-1-1
RCIC	BD-HV-F031	Suppression Pool Suction		II	II	4102	49-1
RCIC	BD-SV-F019	Min Flow Valve		II	II	4102	49-1
RCIC - Leak Detection	SK-TE-N025B	Pipe Tunnel		II	II	4319	25-1-2
RCIC - Leak Detection	SK-TE-N025D	Pipe Tunnel		II	II	4319	25-1-2
RCIC - Leak Detection	SK-TE-N025F	Torus Area		II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025H	Torus Area		II	II	4102	25-1-2

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
RCIC - Leak Detection	SK-TE-N025K	Torus Area		II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025M	Torus Area		II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025P	Torus Area		II	II	4102	25-1-2
RCIC - Leak Detection	SK-TE-N025S	Torus Area		II	II	4102	25-1-2
RCIC Steam	FC-HV-F008	Outboard Iso Steam		II	II	4319	49-1
RCIC Steam	FC-HV-F059	RCIC Steam Exh Isol Valve		II	II	4102	49-1
RCIC Steam	FC-HV-F060	RCIC Vac Pump Discharge Valve		II	II	4102	49-1
RCIC Steam	FC-HV-F062	RCIC Vac Brkr Isol Valve		II	II	4102	49-1
RCIC Steam	FC-HV-F084	RCIC Vac Brkr Isol Valve		II	II	4102	49-1
Reactor Protection Sys (RSP)	SB-TE-3647J-2	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys (RSP)	SB-TE-3647L-2	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys (RSP)	SB-TE-3647M-2	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys (RSP)	SB-TE-3647Q-2	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647B-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647D-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647F-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647G-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647J-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647L-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647M-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3647Q-1	Suppression Pool Temperature		II	II	4102	41-1-2
Reactor Protection Sys - II	SB-TE-3648D-1	Suppression Pool Temperature		II	II	4102	41-1-2
RHR B	BC-HV-F004B	Torus Suction		II	II	4102	51-1-1
RHR B	BC-HV-F007B	Min Flow Line		II	II	4102	51-1-2
RHR B	BC-HV-F015B	Shutdown Return		II	II	4321	51-1-1
RHR B	BC-HV-F016B	Containment Spray		II	II	4402	51-1-1
RHR B	BC-HV-F017B	LPCI Injection		II	II	4321	51-1-1
RHR B	BC-HV-F024B	Supp Pool Return		II	II	4102	51-1-1
RHR B	BC-HV-F027B	Torus Spray		II	II	4102	51-1-1
RHR D	BC-HV-F004D	Torus Suction		II	II	4102	51-1-1
RHR D	BC-HV-F007D	Min Flow Line		II	II	4102	51-1-2
RHR D	BC-HV-F017D	LPCI Injection		II	II	4321	51-1-1
RWCU	BG-HV-F004	Outboard Cont Isol		II	II	4505	44-1
Reactor Building Division II			I				
Core Spray Loop II	BE-BP206	Core Spray Pump B		II	II	4104	52-1
Core Spray Loop II	BE-DP206	Core Spray Pump D		II	II	4105	52-1
Core Spray Loop II	BE-FT-N003B	Loop II Flow		II	II	4105	52-1
Core Spray Loop II	BE-HV-F031B	Min Flow Bypass		II	II	4104	52-1
CRD Hydraulics	BF-SV-117	Pilot Scram Valve (Typ of 92)		II	RPS II	4320	47-1
Electrical Power - Div II	PH-10B222	480 V MCC		II	II	4303	NA
Electrical Power - Div II	PH-10B242	480 V MCC		II	II	4201	NA
Electrical Power - Div II	PJ-10D261	250 V DC MCC		II	II	4108	NA
HPCI	BJ-HV-F008	Test Return to CST		I	I	4203	55-1
Nuclear Boiler Inst (RSP)	BB-LT-7854-1	Reactor Level		II	II	4203	42-1-1
Nuclear Boiler Inst (RSP)	BB-LT-7854	Reactor Level		II	II	4205	42-1-1
Nuclear Boiler Inst (RSP)	BB-PT-7853D	Reactor Pressure		II	II	4202	42-1-1

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Nuclear Boiler Inst - II	BB-LT-N091B	Reactor Level		II	II	4203	42-1-1
Nuclear Boiler Inst - II	BB-PT-N078B	Reactor Pressure		II	II	4203	42-1-1
RCIC	BD-OP203	RCIC Pump		II	II	4110	50-1
RCIC	BD-BP228	RCIC Jockey Pump		II	II	4110	50-1
RCIC	BD-HV-F010	Suction from CST		II	II	4110	49-1
RCIC	BD-HV-F012	Pump Disch		II	II	4110	49-1
RCIC	BD-HV-F022	RCIC Return To CST		II	II	4106	49-1
RCIC	BD-HV-F046	Water to RCIC Condenser		II	II	4110	50-1
RCIC	BD-PT-N050	To PISH-N650		II	II	4108	49-1
RCIC - Leak Detection	SK-TE-N021B	Supply Duct		II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N021D	Supply Duct		II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N022B	Exhaust Duct		II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N022D	Exhaust Duct		II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N023B	Energ Unit Cooler		II	II	4110	25-1-2
RCIC - Leak Detection	SK-TE-N023D	Energ Unit Cooler		II	II	4110	25-1-2
RCIC Steam	FC-OP219	RCIC Gland Seal Pump		II	II	4110	50-1
RCIC Steam	FC-OP220	RCIC Condensate Pump		II	II	4110	50-1
RCIC Steam	FC-OS212	RCIC Turbine		II	II	4110	50-1
RCIC Steam	FC-PT-N003	RCIC Pump Discharge Flow		II	II	4108	49-1
RCIC Steam	FC-HV-4282	RCIC Turbine Trip/Thrtl Valve		II	II	4110	50-1
RCIC Steam	FC-HV-4283	RCIC Turbine Gov Valve		II	II	4110	50-1
RCIC Steam	FC-HV-F045	RCIC Turbine Steam Stop Vlv		II	II	4110	50-1
RCIC Steam	FC-PT-N055B	Vent Pressure Trip		II	II	4205	50-1
RCIC Steam	FC-PT-N055D	Vent Pressure Trip		II	II	4202	50-1
RCIC Steam	FC-PT-N055F	Vent Pressure Trip		II	II	4203	50-1
RCIC Steam	FC-PT-N055H	Vent Pressure Trip		II	II	4201	50-1
RCIC Steam	FC-PT-N056B	RCIC Turbine Exhaust Press		II	II	4108	50-1
RCIC Steam	FC-PT-N056F	RCIC Turbine Exhaust Press		II	II	4108	50-1
RCIC Steam	FC-PT-N057B	Steam High Flow		II	II	4203	49-1
RCIC Steam	FC-PT-N057D	Steam High Flow		II	II	4202	49-1
RCIC Steam	FC-PT-N058B	Steam Low Pressure Trip		II	II	4203	49-1
RCIC Steam	FC-PT-N058D	Steam Low Pressure Trip		II	II	4202	49-1
RCIC Steam	FC-PT-N058F	Steam Low Pressure Trip		II	II	4203	49-1
RCIC Steam	FC-PT-N058H	Steam Low Pressure Trip		II	II	4202	49-1
Reactor Bldg Unit Coolers II	GR-AVH208	RCIC Unit Cooler		II	II	4110	83-1
Reactor Bldg Unit Coolers II	GU-BC281	Unit Cooler Control Panel		II	II	4303	83-1
Reactor Bldg Unit Coolers II	GR-BVH208	RCIC Unit Cooler		II	II	4110	83-1
Reactor Bldg Unit Coolers II	GR-BVH210	RHR Unit Cooler		II	II	4109	83-1
Reactor Bldg Unit Coolers II	GR-BVH211	Core Spray Unit Cooler		II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-BVH214	SACS Unit Cooler		I	II	4307	83-1
Reactor Bldg Unit Coolers II	GU-DC281	Unit Cooler Control Panel		II	II	4202	83-1
Reactor Bldg Unit Coolers II	GR-DVH210	RHR Unit Cooler		II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-DVH211	Core Spray Unit Cooler		II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-DVH214	SACS Unit Cooler		II	II	4307	83-1
Reactor Bldg Unit Coolers II	GR-FSL-9385B1	SACS Air Flow Switch		I	II	4307	83-1
Reactor Bldg Unit Coolers II	GR-FSL-9385D1	SACS Air Flow Switch		II	II	4307	83-1

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Reactor Bldg Unit Coolers II	GR-FVH210	RHR Unit Cooler		II	II	4208	83-1
Reactor Bldg Unit Coolers II	GR-FVH211	Core Spray Unit Cooler		II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-HVH210	RHR Unit Cooler		II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-HVH211	Core Spray Unit Cooler		II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-TE-9381A	RCIC Room Temp		II	II	4110	83-1
Reactor Bldg Unit Coolers II	GR-TE-9381B	RCIC Room Temp		II	II	4110	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383B	RHR B Room Temp		II	II	4109	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383D	RHR D Room Temp		II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383F	RHR B Room Temp		II	II	4208	83-1
Reactor Bldg Unit Coolers II	GR-TE-9383H	RHR D Room Temp		II	II	4107	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384B	Core Spray Room Temp		II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384D	Core Spray Room Temp		II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384F	Core Spray Room Temp		II	II	4104	83-1
Reactor Bldg Unit Coolers II	GR-TE-9384H	Core Spray Room Temp		II	II	4105	83-1
Reactor Bldg Unit Coolers II	GR-TE-9385B	SACS B&D Room Temp		I	II	4307	83-1
Reactor Bldg Unit Coolers II	GR-TE-9385D	SACS B&D Room Temp		II	II	4307	83-1
RHR B	BC-BP202	RHR Pump B		II	II	4109	51-1-1
RHR B	BC-FT-4435	RSP Flow Indication		II	II	4205	51-1-1
RHR B	BC-FT-N015B	RHR Flow B		II	II	4205	51-1-1
RHR B	BC-HV-F003B	RHR HX Outlet		II	II	4109	51-1-1
RHR B	BC-HV-F006B	Shutdown Suction to B Loop		II	II	4109	51-1-1
RHR B	BC-HV-F047B	RHR HX B Inlet		II	II	4208	51-1-1
RHR B	BC-HV-F048B	RHR HX B Bypass		II	II	4208	51-1-1
RHR B	BC-PDT-N058B	Interlock to F017B		II	II	4205	51-1-1
RHR D	BC-DP202	RHR Pump D		II	II	4107	51-1-1
RHR D	BC-FT-N015D	RHR Flow D		II	II	4107	51-1-1
RHR D	BC-HV-F010B	Supp Pool Return		II	II	4107	51-1-1
RHR D	BC-PDT-N058D	Interlock to F017D		II	II	4202	51-1-1
Nuclear Boiler Inst (RSP)	BB-PR-7853D	Reactor Pressure		II	II	4202	42-1-1
SACS - Div II	EA-BC201	SACS Control Panel		II	II	4307	11-1-1
SACS - Div II	EG-BP210	SACS Pump		II	II	4307	11-1-1
SACS - Div II	EA-DC201	SACS Control Panel		II	II	4307	11-1-1
SACS - Div II	EG-DP210	SACS Pump		II	II	4307	11-1-1
SACS - Div II	EG-FT-2549B1	SACS Loop II Flow		II	II	4307	11-1-1
SACS - Div II	EG-HV-2491B	HX B1E201 Inlet		II	II	4307	11-1-1
SACS - Div II	EG-HV-2494B	HX B2E201 Inlet		II	II	4307	11-1-1
SACS - Div II	EG-HV-2512B	RHR HX BE205 Isol Valve		II	II	4208	11-1-1
SACS - DIV II	EG-HV-2522B	SACS Supply Valve to TACS		II	II	4307	11-1-1
SACS - DIV II	EG-HV-2522D	SACS Supply Valve to TACS		II	II	4307	11-1-1
SACS - Div II	EG-SV-2290B	RHR Pump B Room Unit Cooler B		II	II	4109	11-1-2
SACS - Div II	EG-SV-2290D	RHR Pump D Room Unit Cooler D		II	II	4107	11-1-2
SACS - Div II	EG-SV-2290F	RHR Pump B Room Unit Cooler F		II	II	4109	11-1-2
SACS - Div II	EG-SV-2290H	RHR Pump D Room Unit Cooler H		II	II	4107	11-1-2
SACS - Div II	EG-SV-2293A	RCIC Pump Room Unit Cooler A		II	II	4110	11-1-2
SACS - Div II	EG-SV-2293B	RCIC Pump Room Unit Cooler B		II	II	4110	11-1-2
SACS - Div II	EG-SV-2325B	CS Pump Room B Unit Cooler B		II	II	4104	11-1-2
SACS - Div II	EG-SV-2325D	CS Pump Room D Unit Cooler D		II	II	4105	11-1-2
SACS - Div II	EG-SV-2325F	CS Pump Room B Unit Cooler F		II	II	4104	11-1-2

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
SACS - Div II	EG-SV-2325H	CS Pump Room D Unit Cooler H		II	II	4105	11-1-2
SACS - Div II	EG-SV-2520B	RHR Pump BP202 Cooling Coil		II	II	4109	11-1-1
SACS - Div II	EG-SV-2520D	RHR Pump DP202 Cooling Coil		II	II	4107	11-1-1
SACS - Div II	EG-TE-2535B	SACS B1/B2 HX Bypass Temp.		II	II	4307	11-1-1
SACS - Div II	EG-TE-N005B	RHR HX SACS Temp.		II	II	4109	11-1-1
SACS - RSP	EG-FT-2549B3	SACS Loop II Flow - RSP Ind		II	II	4307	11-1-1
Service Water - Div II	EA-HV-2355B	SACS B2 Discharge		II	II	4307	10-1-2
Service Water - Div II	EA-HV-2371B	SACS B1 Discharge		II	II	4307	10-1-2
Service Water - Div II	EA-HV-2204	Loop B RACS HX Header Valve		II	II	4307	10-1-1
Service Water - Div II	EA-PDT-2354B	SACS HX B1 DP		II	II	4307	10-1-2
Service Water - Div II	EA-PDT-2373B	SACS HX B2 DP		II	II	4307	10-1-2
Reactor Building Division I			II				
Core Spray Loop I	BE-AP206	Core Spray Pump A		I	I	4118	52-1
Core Spray Loop I	BE-CP206	Core Spray Pump C		I	I	4116	52-1
Core Spray Loop I	BE-FT-N003A	Loop I Flow		I	I	4116	52-1
CRD Hydraulics	BF-SV-117	Pilot Scram Valve (Typ of 93)		I	RPS I	4328	47-1
Electrical Power - Div I	PH-10B212	480 V MCC		I	I	4309	NA
Electrical Power - Div I	PH-10B232	480 V MCC		I	I	4310	NA
Electrical Power - Div I	PJ-10D251	250 V DC MCC		I	I	4112	NA
HPCI	BJ-OP204	Main HPCI Pump		I	I	4111	56-1
HPCI	BJ-OP217	HPCI Booster Pump		I	I	4111	56-1
HPCI	BJ-AP220	HPCI Jockey Pump		I	I	4111	56-1
HPCI	BJ-HV-F004	Suction From CST		I	I	4111	55-1
HPCI	BJ-HV-F007	HPCI Pump Discharge Vlv		I	I	4111	55-1
HPCI	BJ-HV-F059	Water to HPCI Condenser		I	I	4111	55-1
HPCI	BJ-PT-N050	Pump Discharge Pressure		I	I	4112	55-1
HPCI	BJ-PT-N053	HPCI Pump Suction Pressure		I	I	4111	55-1
HPCI - Leak Detection	SK-TE-N028A	Supply Duct		I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N028C	Supply Duct		I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N029A	Exhaust Duct		I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N029C	Exhaust Duct		I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N030A	Energ Unit Cooler		I	I	4111	25-1-2
HPCI - Leak Detection	SK-TE-N030C	Energ Unit Cooler		I	I	4111	25-1-2
HPCI Steam	FD-OP215	Condensate Pump		I	I	4111	56-1
HPCI Steam	FD-OP216	Vacuum Pump		I	I	4111	56-1
HPCI Steam	FD-OS211	HPCI Turbine		I	I	4111	56-1
HPCI Steam	FD-FT-N008	HPCI Pump Discharge Flow		I	I	4112	55-1
HPCI Steam	FD-FV-4879	HPCI Turb Control Valve		I	I	4111	56-1
HPCI Steam	FD-FV-4880	HPCI Turb Stop Valve		I	I	4111	56-1
HPCI Steam	FD-HV-F001	HPCI Steam Isol Valve		I	I	4111	55-1
HPCI Steam	FD-PDT-N057A	High Steam Flow		I	I	4215	55-1
HPCI Steam	FD-PDT-N057C	High Steam Flow		I	I	4219	55-1
HPCI Steam	FD-PT-N055A	Turb Exhaust Vent		I	I	4209	56-1
HPCI Steam	FD-PT-N055C	Turb Exhaust Vent		I	I	4209	56-1
HPCI Steam	FD-PT-N055E	Turb Exhaust Vent		I	I	4209	56-1
HPCI Steam	FD-PT-N055G	Turb Exhaust Vent		I	I	4209	56-1
HPCI Steam	FD-PT-N056A	Exhaust High Pressure		I	I	4112	56-1

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
HPCI Steam	FD-PT-N056E	Exhaust High Pressure		I	I	4112	56-1
HPCI Steam	FD-PT-N058A	HPCI Steam Pressure Trip		I	I	4215	55-1
HPCI Steam	FD-PT-N058C	HPCI Steam Pressure		I	I	4219	55-1
HPCI Steam	FD-PT-N058E	HPCI Steam Pressure		I	I	4215	55-1
HPCI Steam	FD-PT-N058G	HPCI Steam Pressure		I	I	4219	55-1
Nuclear Boiler Inst (RSP)	BB-PT-7853A	Reactor Pressure		I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-LT-N091A	Reactor Level		I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-PT-N078A	Reactor Pressure		I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-LT-3682A	Reactor Level		I	I	4215	42-1-1
Nuclear Boiler Inst - I	BB-PT-3684A	Reactor Pressure		I	I	4215	42-1-1
RCIC	BD-PT-N053	To PISH-N653		II	II	4210	50-1
Reactor Bldg Unit Coolers I	GU-AC281	Unit Cooler Control Panel		I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-AVH209	HPCI Unit Cooler		I	I	4111	83-1
Reactor Bldg Unit Coolers I	GR-AVH210	RHR Unit Cooler		I	I	4113	83-1
Reactor Bldg Unit Coolers I	GR-AVH211	Core Spray Unit Cooler		I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-AVH214	SACS Unit Cooler		I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-BVH209	HPCI Unit Cooler		I	I	4111	83-1
Reactor Bldg Unit Coolers I	GU-CC281	Unit Cooler Control Panel		I	I	4310	83-1
Reactor Bldg Unit Coolers I	GR-CVH210	RHR Unit Cooler		I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-CVH211	Core Spray Unit Cooler		I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-CVH214	SACS Unit Cooler		II	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-EVH210	RHR Unit Cooler		I	I	4214	83-1
Reactor Bldg Unit Coolers I	GR-EVH211	Core Spray Unit Cooler		I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-FSL-9385A1	SACS Air Flow Switch		I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-FSL-9385C1	SACS Air Flow Switch		II	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-GVH210	RHR Unit Cooler		I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-GVH211	Core Spray Unit Cooler		I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-TE-9382A	HPCI Room Temp		I	I	4111	83-1
Reactor Bldg Unit Coolers I	GR-TE-9382B	HPCI Room Temp		I	I	4111	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383A	RHR A Room Temp		I	I	4113	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383C	RHR C Room Temp		I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383E	RHR A Room Temp		I	I	4214	83-1
Reactor Bldg Unit Coolers I	GR-TE-9383G	RHR C Room Temp		I	I	4114	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384A	Core Spray Room Temp		I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384C	Core Spray Room Temp		I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384E	Core Spray Room Temp		I	I	4118	83-1
Reactor Bldg Unit Coolers I	GR-TE-9384G	Core Spray Room Temp		I	I	4117	83-1
Reactor Bldg Unit Coolers I	GR-TE-9385A	SACS A&C Room Temp		I	I	4309	83-1
Reactor Bldg Unit Coolers I	GR-TE-9385C	SACS A&C Room Temp		II	I	4309	83-1
RHR A	BC-AP202	RHR Pump A		I	I	4313	51-1-2
RHR A	BC-FT-N015A	RHR Flow A		I	I	4215	51-1-2
RHR A	BC-HV-F003A	RHR HX Outlet		I	I	4113	51-1-2
RHR A	BC-HV-F006A	Shutdown Suction to A Loop		I	I	4113	51-1-2
RHR A	BC-HV-F047A	RHR HX A Inlet		I	I	4214	51-1-2
RHR A	BC-HV-F048A	RHR HX A Bypass		I	I	4214	51-1-2
RHR A	BC-PDT-N058A	Interlock to F017A		I	I	4215	51-1-1
RHR C	BC-CP202	RHR Pump C		I	I	4114	51-1-2

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
RHR C	BC-FT-N015C	RHR Flow C		I	I	4114	51-1-2
RHR C	BC-HV-F010A	Supp Pool Return		I	I	4114	51-1-2
RHR C	BC-PDT-N058C	Interlock to F017A		I	I	4218	51-1-1
Nuclear Boiler Inst - I	BB-PDT-N004C	Reactor Level Ch C		I	I	4218	42-1-1
Nuclear Boiler Inst - I	SM-LT-N081C	Reactor Level Ch Y*		I	I	4218	42-1-1
SACS - Div I	EA-AC201	SACS Control Panel		I	I	4309	11-1-1
SACS - Div I	EG-AP210	SACS Pump		I	I	4309	11-1-1
SACS - Div I	EA-CC201	SACS Control Panel		I	I	4309	11-1-1
SACS - Div I	EG-CP210	SACS Pump		I	I	4309	11-1-1
SACS - Div I	EG-FT-2549A1	SACS Loop I Flow		I	I	4309	11-1-1
SACS - Div I	EG-HV-2491A	HX A1E201 Inlet		I	I	4309	11-1-1
SACS - Div I	EG-HV-2494A	HX A2E201 Inlet		I	I	4309	11-1-1
SACS - Div I	EG-HV-2522A	SACS Supply Valve to TACS		I	I	4309	11-1-1
SACS - Div I	EG-HV-2522C	SACS Supply Valve to TACS		I	I	4309	11-1-1
SACS - Div I	EG-HV-2512A	RHR HX AE205 Isol Valve		I	I	4214	11-1-1
SACS - Div I	EG-SV-2290A	RHR Pump A Room Unit Cooler A		I	I	4113	11-1-2
SACS - Div I	EG-SV-2290C	RHR Pump C Room Unit Cooler C		I	I	4114	11-1-2
SACS - Div I	EG-SV-2290E	RHR Pump A Room Unit Cooler E		I	I	4113	11-1-2
SACS - Div I	EG-SV-2290G	RHR Pump C Room Unit Cooler G		I	I	4114	11-1-2
SACS - Div I	EG-SV-2292A	HPCI Pump Room Unit Cooler A		I	I	4111	11-1-2
SACS - Div I	EG-SV-2292B	HPCI Pump Room Unit Cooler B		I	I	4111	11-1-2
SACS - Div I	EG-SV-2325A	CS Pump Room A Unit Cooler A		I	I	4118	11-1-2
SACS - Div I	EG-SV-2325C	CS Pump Room C Unit Cooler C		I	I	4116	11-1-2
SACS - Div I	EG-SV-2325E	CS Pump Room A Unit Cooler E		I	I	4118	11-1-2
SACS - Div I	EG-SV-2325G	CS Pump Room C Unit Cooler G		I	I	4116	11-1-2
SACS - Div I	EG-SV-2520A	RHR Pump AP202 Cooling Coil		I	I	4113	11-1-1
SACS - Div I	EG-SV-2520C	RHR Pump CP202 Cooling Coil		I	I	4114	11-1-1
SACS - Div I	EG-TE-2535A	SACS A1/A2 HX Bypass Temp.		I	I	4309	11-1-1
SACS - Div I	EG-TE-N005A	RHR HX A Sacs Temp.		I	I	4113	11-1-1
Service Water - Div I	EA-HV-2355A	Sacs A2 Disch		I	I	4309	10-1-2
Service Water - Div I	EA-HV-2371A	Sacs A1 Discharge		I	I	4309	10-1-2
Service Water - Div I	EA-PDT-2354A	Sacs HX A1 DP		I	I	4309	10-1-2
Service Water - Div I	EA-PDT-2373A	Sacs HX A2 DP		I	I	4309	10-1-2
Drywell			I or II				
Feedwater	AE-HV-F011A	FW Iso Inside Containment		I	I	4220	41-1-1
Feedwater	AE-HV-F011B	FW Iso Inside Containment		II	II	4220	41-1-1
HPCI Steam	FD-HV-F002	HPCI Steam Isol Valve		I	I	4220	55-1
Main Steam - Div I	AB-SV-3673B	For Inboard MSIV AB-HV-F022A		I	I	4220	41-1-1
Main Steam - Div I	AB-SV-3675B	For Inboard MSIV AB-HV-F022B		I	I	4220	41-1-1
Main Steam - Div I	AB-SV-3677B	For Inboard MSIV AB-HV-F022C		I	I	4220	41-1-1
Main Steam - Div I	AB-SV-3679B	For Inboard MSIV AB-HV-F022D		I	I	4220	41-1-2
Nuclear Boiler	AB-HV-F016	Inboard MSIV Drain		I	I	4220	41-1-1
Pri Cont Inst Gas - Div I	KL-HV-5152A	Supply Header Inboard Isln		I	I	4220	59-1-1
Pri Cont Ist Gas - Div II	KL-HV-5152B	Supply Header Inboard Isln		II	II	4220	59-1-1
RCIC Steam	FC-HV-F007	Inboard Iso Steam		II	II	4220	49-1
RCIC Steam	FC-HV-F076	Iso Valves Bypass		II	II	4220	49-1
Reactor Recirculation A	BB-HV-F031A	React Recirc Pump Disch		I	I	4220	43-1-1
Reactor Recirculation B	BB-HV-F031B	React Recirc Pump Disch		II	II	4220	43-1-1
RHR	BC-HV-F009	Shutdown Cooling Inside Cont		I	I/II	4220	51-1-1

* Nuclear Steam Supply Shutoff System Channel Y (Same as Channel C)

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
RWCU	BG-HV-F001	Inboard Cont Isolation		I	I	4220	44-1
Safety Relief Valves	SN-SV-3652A	PSV-F013A Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3652B	PSV-F013A Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3653A	PSV-F013B Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	SN-SV-3653B	PSV-F013B Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	SN-SV-3654A	PSV-F013C Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3654B	PSV-F013C Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3655A	PSV-F013D Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	SN-SV-3655B	PSV-F013D Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3656A	PSV-F013J Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3657A	PSV-F013F Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3658A	PSV-F013G Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3659A	PSV-F013H Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3660A	PSV-F013R Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3661A	PSV-F013K Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3662A	PSV-F013L Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	AB-SV-3663A	PSV-F013M Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	AB-SV-3664A	PSV-F013P Safety Relief Valve		II	II	4220	41-1-2
Safety Relief Valves	SN-SV-3665A	PSV-F013E Safety Relief Valve		II	I	4220	41-1-2
Safety Relief Valves	SN-SV-3665B	PSV-F013E Safety Relief Valve		II	I	4220	41-1-2
Reactor Building Main Steam Tunnel			I				
HPCI	BJ-HV-8278	HPCI Injection to FW		I	I	4316	55-1
Main Steam - Div II	AB-SV-3674B	For Outboard MSIV AB-HV-F028A		II	II	4316	41-1-1
Main Steam - Div II	AB-SV-3676B	For Outboard MSIV AB-HV-F028B		II	II	4316	41-1-1
Main Steam - Div II	AB-SV-3678B	For Outboard MSIV AB-HV-F028C		II	II	4316	41-1-1
Main Steam - Div II	AB-SV-3680B	For Outboard MSIV AB-HV-F028D		II	II	4316	41-1-2
Nuclear Boiler	AB-HV-F019	Inboard MSIV Drain		II	II	4316	41-1-1
Feed Water	AE-HV-4144	FW Line Cross Tie Isol Vlv		I	I	4316	41-1-1
RCIC	BD-HV-F013	RCIC Injection Valve		II	II	4316	49-1
Control/Diesel Fire Area Number 4			II				
Electrical Power - Div I	PJ-10D421	250 V DC Batteries		I	I	5104	NA
Control/Diesel Fire Area Number 6			I				
Diesel Generators - D	KJ-GP401	Fuel Transfer Pump		II	II	5107	30-1
Diesel Generators - D	KJ-HP401	Fuel Transfer Pump		II	II	5107	30-1
Control/Diesel Fire Area Number 7			I				
Diesel Generators - B	KJ-CP401	Fuel Transfer Pump		II	II	5108	30-1
Diesel Generators - B	KJ-DP401	Fuel Transfer Pump		II	II	5108	30-1
Control/Diesel Fire Area Number 8			II				
Diesel Generators - C	KJ-EP401	Fuel Transfer Pump		I	I	5109	30-1
Diesel Generators - C	KJ-FP401	Fuel Transfer Pump		I	I	5109	30-1

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Control/Diesel Fire Area Number 9			II				
Diesel Generators - A	KJ-AP401	Fuel Transfer Pump		I	I	5110	30-1
Diesel Generators - A	KJ-BP401	Fuel Transfer Pump		I	I	5110	30-1
Control/Diesel Fire Area Number 12			I				
Electrical Power - Div II	PJ-10D431	250 V DC Batteries		II	II	5128	NA
Control/Diesel Fire Area Number 13			II				
Electrical Power - Div I	PJ-10D423	250 V DC Battery Chargers		I	I	5129	NA
Electrical Power - Div I	PJ-10D450	250 V DC SWGR		I	I	5129	NA
Control/Diesel Fire Area Number 14			I				
Electrical Power - Div II	PJ-10D433	250 V DC Battery Chargers		II	II	5130	NA
Electrical Power - Div II	PJ-10D460	250 V DC SWGR		II	II	5130	NA
Control/Diesel Fire Area Number 21			I				
DG Room Recirc Sys D	GM-DV412	Diesel Gen Room Recirc Fan		II	II	5208	88-1-1
DG Room Recirc Sys D	GM-FSL-9557D	Air Flow Low		II	II	5208	88-1-1
DG Room Recirc Sys D	GM-FSL-9557H	Air Flow Low		II	II	5208	88-1-1
DB Room Recirc Sys D	GM-HV412	Diesel Gen Room Recirc Fan		II	II	5208	88-1-1
SACS - Div II	EG-SV-2395D	DG D HXs Cooling Water		II	II	5208	12-1-1
SACS - Div II	EG-SV-2398D	DG D Room Unit Cooler D		II	II	5208	12-1-1
SACS - Div II	EG-SV-2398H	DG D Room Unit Cooler H		II	II	5208	12-1-1
Control/Diesel Fire Area Number 22			I				
DG Room Recirc Sys B	GM-BV412	Diesel Gen Room Recirc Fan		II	II	5209	88-1-1
DG Room Recirc Sys B	GM-FSL-9557B	Air Flow Low		II	II	5209	88-1-1
DG Room Recirc Sys B	GM-FSL-9557F	Air Flow Low		II	II	5209	88-1-1
DG Room Recirc Sys B	GM-FV412	Diesel Gen Room Recirc Fan		II	II	5209	88-1-1
SACS - Div II	EG-SV-2395B	DG B HXs Cooling Water		II	II	5209	12-1-1
SACS - Div II	EG-SV-2398B	DG B Room Unit Cooler B		II	II	5209	12-1-1
SACS - Div II	EG-SV-2398F	DB B Room Unit Cooler F		II	II	5209	12-1-1
Control/Diesel Fire Area Number 23			II				
DG Room Recirc Sys C	GM-CV412	Diesel Gen Room Recirc Fan		I	I	5210	88-1-1
DG Room Recirc Sys C	GM-GV412	Diesel Gen Room Recirc Fan		I	I	5210	88-1-1
SACS - Div I	EG-SV-2395C	DB C HXs Cooling Water		I	I	5210	12-1-1
SACS - Div I	EG-SV-2398C	DG C Room Unit Cooler C		I	I	5210	12-1-1
SACS - Div I	EG-SV-2398G	DG C Room Unit Cooler G		I	I	5210	12-1-1
Control/Diesel Fire Area Number 24			II				
DG Room Recirc Sys A	GM-AV412	Diesel Gen Room Recirc Fan		I	I	5211	88-1-1
DG Room Recirc Sys A	GM-EV412	Diesel Gen Room Recirc Fan		I	I	5211	88-1-1
SACS - Div I	EG-SV-2395A	DG A HXs Cooling Water		I	I	5211	12-1-1
SACS - Div I	EG-SV-2398A	DG A Room Unit Cooler A		I	I	5211	12-1-1
SACS - Div I	EG-SV-2398E	DG A Room Unit Cooler E		I	I	5211	12-1-1
Control/Diesel Fire Area Number 26			RSP				
Electrical Power - Div I	PN-1YF401	120 V AC Fuse Pnl		I	I	5302	NA
Electrical Power - Div I	PN-1YF403	120 V AC Fuse Pnl		I	I	5302	NA
Electrical Power - Div II	PN-1YF402	120 V AC Fuse Pnl		II	II	5302	NA
Electrical Power - Div II	PN-1YF404	120 V AC Fuse Pnl		II	II	5302	NA
Electrical Control - Div I	BC-10C617	RHR & CS Relay Vertical Board		I	I	5302	NA

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Electrical Control - Div I	BJ-10C620	HPCI Relay Vertical Board		I	I	5302	NA
Electrical Control - Div I	1AC652	Logic Ch A		I	I	5302	NA
Electrical Control - Div I	1AC657	Logic Ch A		I	I	5302	NA
Electrical Control - Div I	BC-10C641	RHR & CS Relay Vertical Board		I	I	5302	NA
Electrical Control - Div I	1CC652	Logic Ch C		I	I	5302	NA
Electrical Control - Div I	1CC657	Logic Ch C		I	I	5302	NA
Electrical Control - Div II	BC-10C618	RHR & CS Relay Vertical Board		II	II	5302	NA
Electrical Control - Div II	BD-10C621	RCIC Relay Vertical Board		II	II	5302	NA
Electrical Control - Div II	BB-10C628	ADS Relay Vertical Board		II	II	5302	NA
Electrical Control - Div II	1BC652	Logic Ch B		II	II	5302	NA
Electrical Control - Div II	1BC657	Logic Ch B		II	II	5302	NA
Electrical Control - Div II	BC-10C640	RHR & CS Relay Vertical Board		II	II	5302	NA
Electrical Control - Div II	BB-10C631	ADS Relay Vertical Board		II	II	5302	NA
Electrical Control - Div II	1DC652	Logic Ch D		II	II	5302	NA
Electrical Control - Div II	1DC657	Logic Ch D		II	II	5302	NA
Control/Diesel Fire Area Number 28			I				
DG Room Recirc Sys D	GM-TS-9557D	Diesel Room Temperature		II	II	5304	88-1-1
DG Room Recirc Sys D	GM-TS-9557H	Diesel Room Temperature		II	II	5304	88-1-1
Diesel Generators - D	KJ-DG400	DG and Auxiliaries		II	II	5304	30-1
Control/Diesel Fire Area Number 29			I				
DG Room Recirc Sys B	GM-TS-9557B	Diesel Room Temperature		II	II	5305	88-1-1
DG Room Recirc Sys B	GM-TS-9557F	Diesel Room Temperature		II	II	5305	88-1-1
Diesel Generators - B	KJ-BG400	DG and Auxiliaries		II	II	5305	30-1
Control/Diesel Fire Area Number 30			II				
DG Room Recirc Sys C	GM-FSL-9557C	Air Flow Low		I	I	5306	88-1-1
DG Room Recirc Sys C	GM-FSL-9557G	Air Flow Low		I	I	5306	88-1-1
DG Room Recirc Sys C	GM-TS-9557C	Diesel Room Temperature		I	I	5306	88-1-1
DG Room Recirc Sys C	GM-TS-9557G	Diesel Room Temperature		I	I	5306	88-1-1
Diesel Generators - C	KJ-CG400	DG and Auxiliaries		I	I	5306	30-1
Control/Diesel Fire Area Number 31			II				
DG Room Recirc Sys A	GM-FSL-9557A	Air Flow Low		I	I	5307	88-1-1
DG Room Recirc Sys A	GM-FSL-9557E	Air Flow Low		I	I	5307	88-1-1
DG Room Recirc Sys A	GM-TS-9557A	Diesel Room Temperature		I	I	5307	88-1-1
DG Room Recirc Sys A	GM-TS-9557E	Diesel Room Temperature		I	I	5307	88-1-1
Diesel Generators - A	KJ-AG400	DG and Auxiliaries		I	I	5307	30-1
Control/Diesel Fire Area Number 37			I				
Diesel Generators - D	KJ-1DC422	Generator Panel		II	II	5410	30-1
Diesel Generators - D	KJ-1DC423	Diesel Panel		II	II	5410	30-1
Electrical Power - Div II	PB-10A404	4.16 KV SWGR		II	II	5411	NA
Electrical Power - Div II	PG-10B440	480 V SWGR		II	II	5411	NA
Electrical Power - Div II	PH-10B441	480 V MCC		II	II	5411	NA
Electrical Power - Div II	PG-10B480	480 V SWGR		II	II	5411	NA
Electrical Power - Div II	PH-10B481	480 V MCC		II	II	5411	NA
Electrical Power - Div II	PK-10D440	125 V DC SWGR		II	II	5411	NA
Electrical Power - Div II	PK-1DD417	125 V DC Dist Panel		II	II	5411	NA

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Control/Diesel Fire Area Number 38			I				
Diesel Generators - B	KJ-1BC422	Generator Panel		II	II	5412	30-1
Diesel Generators - B	KJ-1BC423	Diesel Panel		II	II	5412	30-1
Electrical Power - Div II	PB-10A402	4.16 KV SWGR		II	II	5413	NA
Electrical Power - Div II	PG-10B420	480 V SWGR		II	II	5413	NA
Electrical Power - Div II	PH-10B421	480 V MCC		II	II	5413	NA
Electrical Power - Div II	PG-10B460	480 V SWGR		II	II	5413	NA
Electrical Power - Div II	PH-10B461	480 V MCC		II	II	5413	NA
Electrical Power - Div II	PK-10D420	125 V DC SWGR		II	II	5413	NA
Electrical Power - Div II	PK-1BD417	125 V DC Dist Panel		II	II	5413	NA
Control/Diesel Fire Area Number 39			II				
Diesel Generators - C	KJ-1CC422	Generator Panel		I	I	5414	30-1
Diesel Generators - C	KJ-1CC423	Diesel Panel		I	I	5414	30-1
Electrical Power - Div I	PB-10A403	4.16 KV SWGR		I	I	5415	NA
Electrical Power - Div I	PG-10B430	480 V SWGR		I	I	5415	NA
Electrical Power - Div I	PH-10B431	480 V MCC		I	I	5415	NA
Electrical Power - Div I	PG-10B470	480 V SWGR		I	I	5415	NA
Electrical Power - Div I	PH-10B471	480 V MCC		I	I	5415	NA
Electrical Power - Div I	PK-10D430	125 V DC SWGR		I	I	5415	NA
Electrical Power - Div I	PK-1CD417	125 V DC Dist Panel		I	I	5415	NA
Control/Diesel Fire Area Number 40			II				
Diesel Generators - A	KJ-1AC422	Generator Panel		I	I	5416	30-1
Diesel Generators - A	KJ-1AC423	Diesel Panel		I	I	5416	30-1
Electrical Power - Div I	PB-10A401	4.16 KV SWGR		I	I	5417	NA
Electrical Power - Div I	PG-10B410	480 V SWGR		I	I	5417	NA
Electrical Power - Div I	PH-10B411	480 V MCC		I	I	5417	NA
Electrical Power - Div I	PG-10B450	480 V SWGR		I	I	5417	NA
Electrical Power - Div I	PH-10B451	480 V MCC		I	I	5417	NA
Electrical Power - Div I	PK-10D410	125 V DC SWGR		I	I	5417	NA
Electrical Power - Div I	PK-1AD417	125 V DC Dist Panel		I	I	5417	NA
Control/Diesel Fire Area Number 43			I				
Electrical Power - Div II	PN-1BD481	120 V AC Power		II	II	5448	NA
Electrical Power - Div II	PN-1BJ481	120 V AC UPS Dist Pnl		II	II	5448	NA
Electrical Power - Div II	PN-1DD481	120 V AC Power		II	II	5448	NA
Electrical Power - Div II	PN-1DJ481	120 V AC UPS Dist Pnl		II	II	5448	NA
Electrical Access Area - Div I, AB1			II				
1E Panel Room Chilled Water A GJ-TV-9768A		RSP Room 00VH316 Cooling Coil		I	I	5501	90-1-3
1E Panel Room Chilled Water B GJ-TV-9768B		RSP Room 00VH316 Cooling Coil		II	II	5501	90-1-3
Electrical Power - Div I	PN-1AD481	120 V AC Power		I	I	5501	NA
Electrical Power - Div I	PN-1AJ481	120 V AC UPS Dist Pnl		I	I	5501	NA
Electrical Power - Div I	PN-1CD481	120 V AC Power		I	I	5501	NA
Electrical Power - Div I	PN-1CJ481	120 V AC UPS Dist Pnl		I	I	5501	NA
RSP Supply Unit	GL-OVH316	RSP Room Supply		Non 1E RSP		5501	93-0-2
RSP Supply Unit	GL-SV-9768	RSP Room Supply		Non 1E RSP		5501	93-0-2

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Control/Diesel Fire Area Number 46			RSP				
Control Room HVAC A	GK-TE-9589A1	CRS AVH403 Supply Air		I	I	5510	89-1
Control Room HVAC B	GK-TE-9589B1	CRS AVH403 Supply Air		II	II	5510	89-1
Nuclear Boiler Inst - I	BB-LR-R623A	Reactor Level Ch A		I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-PR-R623A	Reactor Pressure Ch A		I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-PI-3684A	Reactor Pressure		I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-LR-3682A-1	Reactor Level		I	I	5510	42-1-1
Nuclear Boiler Inst - I	BB-LI-3682A	Reactor Level		I	I	5510	42-1-1
Nuclear Boiler Inst - II	BB-LR-R623B	Reactor Level Ch B		II	II	5510	42-1-1
Nuclear Boiler Inst - II	BB-PR-R623B	Reactor Pressure Ch B		II	II	5510	42-1-1
Control Room Panels	BB-10C651	Operators Console		I&II	I&II	5510	NA
Control Room Panels	BB-10C650	Main Vertical Board		I&II	I&II	5510	NA
Nuclear Boiler Inst - I	BB-LI-R606C	Reactor Level Ch C		NSR**	NSR**	5510	42-1-1
Nuclear Boiler Inst - I	BB-LI-R604C	Reactor Level Ch C		I	I	5510	42-1-1
Control/Diesel Fire Area Number 49			I				
Electrical Power - Div II	PK-1DD413	125 V DC Battery Chargers		II	II	5538	NA
Electrical Power - Div II	PK-1DD414	125 V DC Battery Chargers		II	II	5538	NA
Control/Diesel Fire Area Number 50			I				
Electrical Power - Div II	PK-1DD411	125 V DC Batteries		II	II	5539	NA
Control/Diesel Fire Area Number 51			I				
Electrical Power - Div II	PK-1BD413	125 V DC Battery Chargers		II	II	5540	NA
Electrical Power - Div II	PK-1BD414	125 V DC Battery Chargers		II	II	5540	NA
Control/Diesel Fire Area Number 52			I				
Electrical Power - Div II	PK-1BD411	125 V DC Batteries		II	II	5541	NA
Control/Diesel Fire Area Number 53			I				
Electrical Power - Div I	PK-1CD413	125 V DC Battery Chargers		I	I	5542	NA
Electrical Power - Div I	PK-1CD414	125 V DC Battery Chargers		I	I	5542	NA
Control/Diesel Fire Area Number 54			II				
Electrical Power - Div I	PK-1CD411	125 V DC Batteries		I	I	5543	NA
Control/Diesel Fire Area Number 55			II				
Electrical Power - Div I	PK-1AD413	125 V DC Battery Chargers		I	I	5544	NA
Electrical Power - Div I	PK-1AD414	125 V DC Battery Chargers		I	I	5544	NA
Control/Diesel Fire Area Number 56			II				
Electrical Power - Div I	PK-1AD411	125 V DC Batteries		I	I	5545	NA
Control/Diesel Fire Area Number 59			II				
1E Panel Room Chilled Water A	GJ-AP414	Chilled H2O Pump		I	I	5602	90-1-3
Control Area Chilled Water A	GJ-AC490	Panel		I	I	5602	90-1-1
Control Area Chilled Water A	GJ-AK400	Control Area Chiller		I	I	5602	90-1-1
Control Area Chilled Water A	GJ-AP400	Chilled H2O Pump		I	I	5602	90-1-1
Control Area Chilled Water A	GJ-FT-9648A2	Cont Room Chiller Loop A		I	I	5602	90-1-1
Control Area Chilled Water A	GJ-TE-9652A1	Chilled Water Temp		I	I	5602	90-1-1
Control Area Chilled Water A	GJ-TV-9637A	Cont Room Clr AVH403 Byp		I	I	5602	90-1-1
Control Room HVAC A	GK-AC485	Control Area HVAC Panel		I	I	5602	89-1
Control Room HVAC A	GK-AV415	Control Room Exhaust Fan A		I	I	5602	89-1
Control Room HVAC A	GK-AVH403	Control Room Supply		I	I	5602	89-1
Control Room HVAC A	GK-FD-9589A	Fan Inlet Vanes		I	I	5602	89-1
Control Room HVAC A	GK-FSL-9587A	Control Room AV415 Air Flow		I	I	5602	89-1
Control Room HVAC A	GK-FSL-9589A2	CRS AVH403 Heating Coil		I	I	5602	89-1
Control Room HVAC A	GK-FT-9589A	CRS AVH403 Supply Air		I	I	5602	89-1
Control Room HVAC A	GK-HD-9589A1	CRS AVH403 Return Air		I	I	5602	89-1

** Non-Safety Related

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Control Room HVAC A	GK-HD-9589A2	MCR Supply Damper		I	I	5602	89-1
Control Room HVAC A	GK-PDD-9587A	CRS AVH403 Pressure Control		I	I	5602	89-1
Control Room HVAC A	GK-PDT-9587A	CRS Fan Inlet Dif Pressure		I	I	5602	89-1
Control Room HVAC A	GK-SV-9588AA	Control Room Isol Ch C		I	I	5602	89-1
Control Room HVAC A	GK-SV-9588AB	Control Room Isol Ch D		II	I	5602	89-1
Control Room HVAC A	GK-TE-9589A	CRS AVH403 Supply Air		I	I	5602	89-1
Control/Diesel Fire Area Number 61			RSP				
Reactor Protection Sys (RSP)	SB-TT-3647J-2	Suppression Pool Temperature		II	II	5605	41-1-2
Reactor Protection Sys (RSP)	SB-TT-3647L-2	Suppression Pool Temperature		II	II	5605	41-1-2
Reactor Protection Sys (RSP)	SB-TT-3647M-2	Suppression Pool Temperature		II	II	5605	41-1-2
Reactor Protection Sys (RSP)	SB-TT-3647Q-2	Suppression Pool Temperature		II	II	5605	41-1-2
Switchgear Room Unit Cooler B	GM-HD-9549B	Outside Air		II	II	5605	88-1-1
Switchgear Room Unit Cooler D	GM-HD-9549D	Outside Air		II	II	5605	88-1-1
Control/Diesel Fire Area Number 62			I				
Switchgear Room Unit Cooler B	GM-BVH401	Switchgear Rm Unit Cooler		II	II	5606	88-1-1
Switchgear Room Unit Cooler D	GM-DVH401	Switchgear Rm Unit Cooler		II	II	5606	88-1-1
Control/Diesel Fire Area Number 63			I				
Electrical Power - Div II	PK-10D446	125 V DC SWGR		II	II	5607	NA
Electrical Power - Div II	PK-1DD444	125 V DC Battery Chargers		II	II	5607	NA
Electrical Power - Div II	PN-1DD482	120 V AC Power		II	II	5607	NA
Electrical Power - Div II	PN-1DJ482	120 V AC UPS Dist Pnl		II	II	5607	NA
Control/Diesel Fire Area Number 65			I				
Electrical Power - Div II	PK-1DD447	125 V DC Batteries		II	II	5609	NA
Control/Diesel Fire Area Number 67			II				
Switchgear Room Unit Cooler A	GM-HD-9549A	Outside Air		I	I	5612	88-1-1
Switchgear Room Unit Cooler C	GM-HD-9549C	Outside Air		I	I	5612	88-1-1
Control/Diesel Fire Area Number 68			II				
Electrical Power - Div I	PK-10D436	125 V DC SWGR		I	I	5613	NA
Electrical Power - Div I	PK-1CD444	125 V DC Battery Chargers		I	I	5613	NA
Electrical Power - Div I	PN-1CD482	120 V AC Power		I	I	5613	NA
Electrical Power - Div I	PN-1CJ482	120 V AC UPS Dist Pnl		I	I	5613	NA
Control/Diesel Fire Area Number 69			II				
Electrical Power - Div I	PK-1CD447	125 V DC Batteries		I	I	5614	NA
Control/Diesel Fire Area Number 70			I				
Electrical Power - Div II	PN-1BD482	120 V AC Power		II	II	5615	NA
Electrical Power - Div II	PN-1BJ482	120 V AC UPS Dist Pnl		II	II	5615	NA
Control/Diesel Fire Area Number 71			II				
Electrical Power - Div I	PN-1AD482	120 V AC Power		I	I	5616	NA
Electrical Power - Div I	PN-1AJ482	120 V AC UPS Dist Pnl		I	I	5616	NA
Control/Diesel Fire Area Number 60			RSP				
1E Panel Room Chilled Water A	GJ-TV-9667A	1E Pnl Rm Clr AVH408 Byp		I	I	5620	90-1-3
1E Panel Room Chilled Water B	GJ-TV-9667B	1E Pnl Rm Clr AVH408 Byp		II	II	5620	90-1-3
1E Panel Room HVAC A	GM-AC486	Control Panel		I	I	5620	88-1-2
1E Panel Room HVAC A	GM-AVH408	Supply Fan		I	I	5620	88-1-2
1E Panel Room HVAC A	GM-FD-9558A	Inlet Vanes		I	I	5620	88-1-2

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
1E Panel Room HVAC A	GM-FSL-9558A2	Air Flow		I	I	5620	88-1-2
1E Panel Room HVAC A	GM-FT-9558A	Air Flow		I	I	5620	88-1-2
1E Panel Room HVAC A	GM-HD-9558A1	Outside Air		I	I	5620	88-1-2
1E Panel Room HVAC A	GM-TE-9558A	Discharge Temperature		I	I	5620	88-1-2
1E Panel Room HVAC A	GM-TY-9558A	Heater Control		I	I	5620	88-1-2
1E Panel Room HVAC B	GM-BC486	Control Panel		II	II	5620	88-1-2
1E Panel Room HVAC B	GM-BVH408	Supply Fan		II	II	5620	88-1-2
1E Panel Room HVAC B	GM-FD-9558B	Inlet Vanes		II	II	5620	88-1-2
1E Panel Room HVAC B	GM-FSL-9558B2	Air Flow		II	II	5620	88-1-2
1E Panel Room HVAC B	GM-FT-9558B	Air Flow		II	II	5620	88-1-2
1E Panel Room HVAC B	GM-HD-9558B1	Outside Air		II	II	5620	88-1-2
1E Panel Room HVAC B	GM-TE-9558B	Discharge Temperature		II	II	5620	88-1-2
1E Panel Room HVAC B	GM-TY-9558B	Heater Control		II	II	5620	88-1-2
Control/Diesel Fire Area Number 82			II				
Switchgear Room Unit Cooler A	GM-AVH401	Switchgear Rm Unit Cooler		I	I	5629	88-1-1
Switchgear Room Unit Cooler C	GM-CVH401	Switchgear Rm Unit Cooler		I	I	5629	88-1-1
Control/Diesel Fire Area Number 83			I				
Control Area Chilled Water B	GJ-BC490	Panel		II	II	5630	90-1-2
Control Area Chilled Water B	GJ-BK400	Control Area Chiller		II	II	5630	90-1-2
Control Area Chilled Water B	GJ-BP400	Chilled H2O Pump		II	II	5630	90-1-2
Control Area Chilled Water B	GJ-FT-9648B2	Cont Room Chiller Loop B		II	II	5630	90-1-2
Control Area Chilled Water B	GJ-TE-9652B1	Chilled Water Temp		II	II	5630	90-1-2
Control Area Chilled Water B	GJ-TV-9637B	Cont Room Clr BVH403 Byp		II	II	5630	90-1-2
Control Room HVAC B	GK-BC485	Control Area HVAC Panel		II	II	5630	89-1
Control Room HVAC B	GK-BV415	Control Room Exhaust Fan B		II	II	5630	89-1
Control Room HVAC B	GK-BVH403	Control Room Supply		II	II	5630	89-1
Control Room HVAC B	GK-FD-9589B	Fan Inlet Vanes		II	II	5630	89-1
Control Room HVAC B	GK-FSL-9587B	Control Room BV415 Air Flow		II	II	5630	89-1
Control Room HVAC B	GK-FSL-9589B2	CRS BVH403 Heating Coil		II	II	5630	89-1
Control Room HVAC B	GK-FT-9589B	CRS BVH403 Supply Air		II	II	5630	89-1
Control Room HVAC B	GK-HD-9589B1	CRS BVH403 Return Air		II	II	5630	89-1
Control Room HVAC B	GK-HD-9589B2	MCR Supply Damper		II	II	5630	89-1
Control Room HVAC B	GK-PDD-9587B	CRS BVH403 Pressure Control		II	II	5630	89-1
Control Room HVAC B	GK-PDT-9587B	CRS Fan Inlet Dif Pressure		II	II	5630	89-1
Control Room HVAC B	GK-SV-9588BA	Control Room Isol Ch C		I	II	5630	89-1
Control Room HVAC B	GK-SV-9588BB	Control Room Isol Ch D		II	II	5630	89-1
Control Room HVAC B	GK-TE-9589B	CRS BVH403 Supply Air		II	II	5630	89-1
Control/Diesel Fire Area Number 84			RSP				
1E Panel Room Chilled Water A	GJ-AC487	Panel		I	I	5704	89-1
1E Panel Room Chilled Water A	GJ-AK403	Control Area Chiller		I	I	5703	90-1-3
1E Panel Room Chilled Water A	GJ-FT-9666A1	CHW Loop A AK403 Outlet		I	I	5703	90-1-3
1E Panel Room Chilled Water B	GJ-BC487	Panel		II	II	5704	89-1
1E Panel Room Chilled Water B	GJ-BK403	Control Area Chiller		II	II	5703	90-1-3
1E Panel Room Chilled Water B	GJ-BP414	Chilled H2O Pump		II	II	5703	90-1-3
1E Panel Room Chilled Water B	GJ-FT-9666B1	CHW Loop B BK403 Outlet		II	II	5703	90-1-3

TABLE 9A-3 (Cont)

System	Component	Function	Shutdown Method	Elec Div.	Mech. Div.	Room No.	P&ID
Control Area Chilled Water A	GJ-TV-9634A	Cont Equip Rm Clr AVH407 Byp		I	I	5703	90-1-1
Control Area Chilled Water B	GJ-TV-9634B	Cont Equip Rm Clr AVH407 Byp		II	II	5703	90-1-1
Control Area HVAC A	GK-AVH407	Control Equip Supply		I	I	5703	89-1
Control Area HVAC A	GK-FSL-9603A2	CERS AVH407 Discharger Air		I	I	5703	89-1
Control Area HVAC A	GK-FT-9603A	CERS AVH407 Supply Air		I	I	5703	89-1
Control Area HVAC A	GK-HD-9603A1	CERS AVH407 Outside Air		I	I	5703	89-1
Control Area HVAC A	GK-HD-9603A2	CERS AVH407 Supply Air		I	I	5703	89-1
Control Area HVAC A	GK-HD-9603A3	CERS AVH407 Return Air		I	I	5703	89-1
Control Area HVAC A	GK-TE-9603A	CERS AVH407 Supply Air		I	I	5704	89-1
Control Area HVAC A	GK-TT-9603A	CERS AVH407 Supply Air		I	I	5704	89-1
Control Area HVAC A	GK-TY-9603A	CERS AVH407 Supply Air		I	I	5703	89-1
Control Area HVAC B	GK-BVH407	Control Equip Supply		II	II	5703	89-1
Control Area HVAC B	GK-FSL-9603B2	CERS BVH407 Discharge Air		II	II	5703	89-1
Control Area HVAC B	GK-FT-9603B	CERS BVH407 Supply Air		II	II	5703	89-1
Control Area HVAC B	GK-HD-9603B1	CERS BVH407 Outside Air		II	II	5703	89-1
Control Area HVAC B	GK-HD-9603B2	CERS BVH407 Supply		II	II	5703	89-1
Control Area HVAC B	GK-HD-9603B3	CERS BVH407 Return Air		II	II	5703	89-1
Control Area HVAC B	GK-TE-9603B	CERS BVH407 Supply Air		II	II	5703	89-1
Control Area HVAC B	GK-TT-9603B	CERS BVH407 Supply Air		II	II	5703	89-1
Control Area HVAC B	GK-TY-9603B	CERS BVH407 Supply Air		II	II	5703	89-1
DG Room Recirc Sys A	GK-AC483	Panel		I	I	5704	88-1-1
DG Room Recirc Sys B	GK-BC483	Panel		II	II	5703	88-1-1
DG Room Recirc Sys C	GK-CC483	Panel		I	I	5704	88-1-1
DG Room Recirc Sys D	GK-DC483	Panel		II	II	5703	88-1-1

TABLE 9A-4

FIRE AREAS AND ASSOCIATED ROOM NUMBERS

Fire Area	Arch Room Numbers											
RB1, Reactor Bldg Div. I	4111	4112	4113	4114	4115	4116	4117	4118				
	4209	4210	4211	4212	4213	4214	4215	4216	4218	4219		
	4301	4309	4310	4311	4313	1/2 of 4315	4326	4328	4330	4331	4332	4333
RB2, Reactor Bldg Div. II	4101	4103	4104	4105	4106	4107	4108	4109	4110			
	4201	4202	4203	4205	4206	4207	4208					
	4303	4304	4305	4307	1/2 of 4315	4317	4318	4320	4322	4323	4324	
RB4, Reactor Bldg Main Steam Tunnel	4316											
RB3N, Reactor Bldg Torus Room North	4102N	4217	4327	4329	4409							
RB3S, Reactor Bldg Torus Room South	4102S	4204	4319	4321								
		4402		4505								
RB5, Reactor Bldg Elev. 132 and above	All room numbers 44xx through 47xx except the Technical Support Center and Reactor Bldg Torus Rooms											
RB6, Technical Support Center	4415	4416	4417	4418	4419	4420						
	4514	4515	4516	4517								
	3613											
RB7, Reactor Building Drywell	Drywell, 4220		4221									
AB4, Remote Shutdown Panel Room	3576											
AB1, Electrical Access Area Div. I	5237, 5339, vault in 5401 connecting 5339 and 5501, 5450, 5501											

TABLE 9A-4 (Cont)

Fire Area	Arch Room Numbers									
AB2, Electrical Access Area Div. II	3110	3110-1	5106							
	3204	5207								
	3301	3302	3303	3304	3314	3342	5301			
	3425	5401								
	5423	3301A								
AB3, Aux. Bldg Radwaste Area	All 3XXX room numbers plus 5619, excluding those 3XXX numbers in RSP, TSC, and Elec. Div. II areas above.									
	Only the following room numbers have safe shutdown cable in them.									
	3208	3329	3414	3442	3444	3449	3504	3601	3603	3605
									3606	5619
CD1 through CD85, Aux. Bldg Control Room Numbers are given on Table 9A-5 and Diesel Areas										
Table 9A-5 list the Control and Diesel Fire Area Numbers										
IS1, Intake Structure Div. I	101, 102, 103, 106, 107, 108, 112, 113, 203, 204, 205, 206									
	Panel Area									
	304, 305, 306, 307, 308									
IS2, Intake Structure Div. II	110, 114, 207, 208 and panel area									
	310, 311, 312									
IS3, Traveling Screen Motor Room	Traveling Screen Motor Area, elev. 114, Intake Structure									

TABLE 9A-5

CONTROL AND DIESEL FIRE AREAS
AND ASSOCIATED SHUTDOWN METHODS

Aux. Bldg Control and Diesel <u>Area Fire Areas by Room Number</u>			<u>Shutdown Method</u>
<u>Area No.</u>	<u>Room No(s)</u>		
CD 1	5101		I
CD 2	5102		I
CD 3	5103		I or II
CD 4	5104		II
CD 5	N/A		
CD 6	5107		I
CD 7	5108		I
CD 8	5109		II
CD 9	5110		II
CD 10	5111, 5112, 5121, 5215, 5217, 5233, 5308, 5315 5316, 5409, 5536, 5537		I
CD 11	5126		I or II
CD 12	5128		I
CD 13	5129		II
CD 14	5130		I
CD 15	5201		I
CD 16	5202		RSP
CD 17	5203, 5323, 5331, 5405, 5419, 5531		I
CD 18	5204, 5324, 5332, 5406, 5420, 5532		I
CD 19	5205, 5325, 5333, 5407, 5421, 5533		II
CD 20	5206, 5326, 5334, 5408, 5422, 5534		II
CD 25	5216		I or II

TABLE 9A-5 (Cont)

Aux. Bldg Control and Diesel
Area Fire Areas by Room Number

Shutdown
Method

<u>Area No.</u>	<u>Room No(s)</u>	
CD 26	5302	RSP
CD 27	5303, 5316	I or II
CD 28	5304, 5208	I
CD 29	5305, 5209	I
CD 30	5306, 5210	II
CD 31	5307, 5211	II
CD 32	5335	II
CD 33	5336	I
CD 34	5402	I or II
CD 35	5403, 5449	RSP
CD 36	5404	I or II
CD 37	N/A	
CD 38	N/A	
CD 39	N/A	
CD 40	N/A	
CD 41	5418	I or II
CD 42	5447	I
CD 43	5448	I
CD 44	5502	II
CD 45	5503, 5504, 5505, 5507, 5508, 5512, 5513, 5514, 5515, 5520, 5521, 5522, 5523	I or II
CD 46	5509, 5510, 5511	RSP
CD 47	5525	I
CD 48	5535	I
CD 49	5538	I
CD 50	5539	I
CD 51	5540	I
CD 52	5541	I

TABLE 9A-5 (Cont)

Aux. Bldg Control and Diesel
Area Fire Areas by Room Number

Shutdown
Method

<u>Area No.</u>	<u>Room No(s)</u>	
CD 53	5542	II
CD 54	5543	II
CD 55	5544	II
CD 56	5545	II
CD 57	5546	I or II
CD 58	5601	I or II
CD 59	5602	II
CD 60	5604, 5611, 5620, 5702, 5706	RSP
CD 61	5605	RSP
CD 62	5606, 5410, 5411, 5412, 5413	I
CD 63	5607	I
CD 64	5608	I or II
CD 65	5609	I
CD 66	5610	I or II
CD 67	5612	II
CD 68	5613	II
CD 69	5614	II
CD 70	5615	I
CD 71	5616	II
CD 72	N/A	
CD 73	5618	I
CD 74	5621	I
CD 75	5622	I
CD 76	5623	I
CD 77	5624	I or II
CD 78	5625	I or II
CD 79	5626	I or II

TABLE 9A-5 (Cont)

Aux. Bldg Control and Diesel
Area Fire Areas by Room Number

Shutdown
Method

<u>Area No.</u>	<u>Room No(s)</u>	
CD 80	5627	I or II
CD 81	5628	I or II
CD 82	5629, 5414, 5415, 5416, 5417	II
CD 83	5630	I
CD 84	5703, 5704, 5105, 5617	RSP
CD 85	5705	I or II

TABLE 9A-6

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: AB3, AUX BUILDING RADWASTE

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. There are Division I cable for the MCR HVAC at Elevation 153. For a fire in that area the redundant Division II equipment has III.G.2 separation and will be used for safe shutdown. There are Division II cables at elevation 124 for SACS, DG, 120 V ac, 125 V dc and 250 V dc. The redundant Division I equipment has III.G.2 separation and will be used for safe shutdown. The slabs between 124 and 153 (2 of them) are sealed as 2-hour fire barriers. The intermediate elevation has an automatic suppression system. Ionization detection and hose stations are installed in the above areas. This combination of separation, seals, detection and suppression is adequate.

Total BTU Combustibles: 7,455,995,455 BTU

Total floor area: 200,000 ft²

Average BTU/ft²: 37,280 BTU/ft²

Average Equivalent Fire Severity: 27.97 minutes.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Partial

Elevation 54': Rooms 3101 through 3199 except room 3110 Corridor and sample station 3110-1.

Equipment handling radioactive liquids, solids or gases in these rooms:

- Off-gas system charcoal vessels, cooler condensers, preheaters and recombiners
- Liquid radwaste collector and sample tanks, evaporators, condensers, separators, and pumps

All of the equipment containing or processing radioactive materials on this elevation will maintain their integrity during a fire. There will be no loss of radioactive materials to the environment. There are no pumps or valves which would fail in a fire and as a result release any radioactive materials from the process piping to the environment.

Refer to Fire Hazard Summary Sheets for each room's fire detection type, fire suppression type and combustibles. Refer to fire drawings, Figures 9.5-1 and 9.5-8, for rating of walls.

Shutdown methods I or II can be used following a fire in this area.

TABLE 9A-6 (Cont)

Elevation 77' & 87': Room numbers 3201 through 3222 except room 3204
Electrical Access Area

Equipment handling radioactive liquids, solids, or gases in these rooms:

- Off-gas holdup pipes
- Liquid radwaste evaporators and pumps

None of this equipment will suffer a loss of integrity due to a fire. Spurious actuation of pumps or valves due to a fire will not result in a release of radioactive materials. Therefore, no radioactive materials will be released to the environment due to a fire on this elevation.

Refer to Fire Hazard Summary Sheets for each room's fire detection type, fire suppression type and combustibles. Refer to fire drawings, Figures 9.5-2 and 9.5-8, for rating of walls.

Shutdown methods I or II can be used following a fire in this area. A fire in Room 3208 could affect both Division I and II RHR Shutdown Cooling, however alternate shutdown cooling mode methods I or II remain available.

The south wall of room 3215, constructed of gypsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.

TABLE 9A-6 (Cont)

Elevation 102': Room numbers 3301 through 3369 except rooms 3301, 3301A, 3302, 3303, 3304, 3314, and 3342, Electrical Access Area Div. II (AB2)

Equipment handling radioactive liquids, solids, or gases in these rooms:

- Liquid radwaste crystallizer, centrifuge, and pumps
- Solid radwaste extruders, pumps, and compactor
- Fuel pool filters
- Dry radwaste storage areas

None of the equipment on this elevation (including pumps and valves) will suffer a loss of integrity that would result in a release of radioactive materials to the environment as a result of a fire.

The dry radwaste storage areas, including waste in the compactor, have been given a Zone II rating. If a fire did occur which ignited the boxes holding the dry waste, only a very low level of radioactivity would be released to HVAC system. However, both dry waste storage systems are protected by an automatic-wet sprinkler system which should prevent any significant amount of trash from burning, resulting in a very low (if any) radioactive release to the HVAC system.

Refer to Fire Hazard Summary Sheets for each room's fire detection type, fire suppression type and combustibles. Refer to fire drawings, Figures 9.5-3 and 9.5-8, for rating of walls.

Shutdown methods I or II can be used following a fire in this area. A fire in Room 3329 could affect both Division I and II RHR Shutdown Cooling, however alternate shutdown cooling mode methods I or II remain available.

TABLE 9A-6 (Cont)

The west wall of room 5310-1 (an extension of room 3344), constructed of gypsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.

TABLE 9A-6 (Cont)

Elevation 124': Room numbers 3401 through 3451 except room 3425 Electrical Access Area

Equipment handling radioactive liquids, solids, or gases in these rooms:

- Liquid radwaste crystallizer equipment, condenser, heater, centrifuge and pumps
- Solid radwaste extruder evaporator filters

None of the equipment (except the evaporator filters) will suffer loss of integrity that would result in a release of radioactive materials to the environment as a result of a fire. The evaporator filters contain charcoal as part to the filtering elements. A transient fire could ignite the charcoal and degrade the filtering capability of the system. Hence, the radioactive releases from the evaporator would be passed directly to the vent stack. However, a radiation detector is mounted downstream of the filter, and in case of filter failure, would detect high radiation levels and shut down the system preventing any further release. In addition, the entire area is protected by an automatic wet sprinkler system that would put out any fire before it could ignite the charcoal in the filter.

A fire in rooms 3414, 3442, 3444 or 3449 could affect Div II cable for SACS, DG, 120 Vac, 125 Vdc, 250 Vdc, ect. However, the redundant Div I cable has III.G.2.a. separation and would be used for safe shutdown.

Refer to Fire Hazard Summary Sheets for each room's fire detection type, fire suppression type and combustibles. Refer to fire drawings, Figures 9.5-4 and 9.5-8, for rating of walls

TABLE 9A-6 (Cont)

Elevation 137': Rooms numbers 3501 through 3584 except room 3576 Remote Shutdown Panel room

Equipment handling radioactive liquids, solids, or gases in these rooms:

- Solid radwaste drum storage
- Liquid radwaste crystallizer vapor body and entrainment separator

None of the equipment on this elevation will suffer a loss of integrity that would result in a release of radioactive materials to the environment as a result of fire.

The drum storage area contains 55 gallon drums filled with a solidified mixture of concentrated radioactive waste in an asphalt medium. These drums are tightly sealed. This area is protected by an automatic wet sprinkler system that would prevent any long burning fire that could damage the integrity of the drums. Therefore, there will be no release of radioactivity to the environment due to a fire.

Refer to Fire Hazard Summary Sheets for each room's fire detection type, fire suppression type and combustibles. Refer to fire drawings, Figures 9.5-5 and 9.5-8, for rating of walls.

A fire in Room 3504 could affect HVAC for the Remote Shutdown (RSP) Room. However, shutdown methods I or II are not affected and can be used following a fire in this area.

TABLE 9A-6 (Cont)

Elevation 153'-0" & 155'-3": Rooms 3601 through 3609 and 5619

There is no equipment on this elevation that deals with the processing or holding of radioactive materials.

A fire in Rooms 3601 or 3603 could affect HVAC for the Remote Shutdown (RSP) Room. A fire in rooms 3605, 3606, or 5619 could affect the Div I Main Control Room HVAC or Div I chilled water system. However, the redundant Div II cable has III.G.2.a separation and would be used for safe shutdown.

Refer to Fire Hazard Summary Sheets for each room's fire detection type, fire suppression type and combustibles. Refer to fire drawings, Figures 9.5-3 and 9.5-8, for rating of walls.

TABLE 9A-7

FIRE HAZARD ANALYSIS TABULATION

ROOM: Remote Shutdown Panel Room		Fire Area: AB4, Remote Shutdown Panel Room	
ROOM NO.	3576	BLDG. Auxiliary/Radwaste	ELEV. 137
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE		FIRE DETECTION TYPE: Ionization
I & II	Remote shutdown panel 10C399 Control and instrumentation cable Division I (Division II cable is bottom entry into panel)		FIRE SUPPRESSION TYPE: None H ₂ O hose MHC301 available in Room 3544. Portable extinguisher available in Room 3504
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		CONSTRUCTION: FIRE RATING:	
<p>None. This area contains control cable for both safe shutdown divisions. The safe shutdown cable does not meet the requirements of Section III.G.2 of Appendix R; therefore, alternate shutdown is provided by operation of redundant Division I equipment (which has III.G.2.a separation) from the main control room and remote equipment operating locations. A fire in this area will have no effect on the ability to minimize and control the release of radioactivity. Spurious operation of equipment due to a fire in this area will not compromise the safe shutdown of the reactor.</p>		Wall:	
		North 3 hour	
		East 3 hour	
		South 3 hour	
		West 3 hour	
		Floor: 2 hour	
		Ceiling: 2 hour	
		Doors and Hatches: One 3-hour-rated door in east wall; no hatches	
		Reference Drawings: Electrical Drawings - E-170-0 Fire Drawings - Fig. 9.5-5 & 9.5-8	
		COMBUSTIBLES:	
MATERIAL:	QUANTITY	SEVERITY (MIN.)	
a. Cable insulation	1278 lb	10.7	
b. Lube oil	0	0	
c. Other (paper)	200 lb	2.7	
d. Transient	0	0	
AREA = 450 ft ²	TOTAL	13.0 min.	
DEVIATION REQUEST: None			

TABLE 9A-8

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: RB1, Reactor Building Division I

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

A postulated fire in room 4309 can damage both SACS room coolers GR-AVH214 and GR-CVH214 as they are located in the same room. A fire induced hot short in a control cable associated with the SACS room cooler GR-CVH214 low air flow switch could cause tripping of the credited Division II chilled water pump GJ-BP400 and prevent restart of the BP400 pump. Manual action to open breaker 10B242-221 is required to isolate fault from GR-CVH214. The automatic suppression and detection system installed over the Division II cable in 4301 gives an equivalent III.G.2.6 separation from the remainder of RB1. Therefore, an exposure fire in RB1 cannot prevent safe shutdown using Division II equipment (Shutdown Method II) with manual depressurization and low-pressure makeup. RHR shutdown cooling suction valve BC-HV-F009 could be affected in 4309, 4328 or 4326. The alternate shutdown path using CS is still available.

A postulated fire in room 4115 can impact Suppression Pool Level Indication BJ-LR-4805-1 in the Control Room and BJ-LT-4805-2 on the Remote Shutdown Panel. Also, a postulated fire in rooms 4218 and 4310 can impact BJ-LR-4805-2 on the Remote Shutdown Panel and BJ-LI-4801 in the Control Room. However, one indication of suppression pool level remains available as the rooms 4115 and 4218 & 4310 are separated by 3 hour fire walls within Fire Area RB1. The instrument tubing lines associated with BJ-LR-4805-2, BJ-LR-4805-1 and BJ-LI-4801 are routed through 4115. However, room 4115 is 690 square feet with a total combustible load of 17.44 minutes. The amount of combustible loading is not sufficient to cause loss of all three instruments.

Total Btu Combustibles: 1,622,938,120

Total Floor Area: 31,424 ft²

Average Btu/ft²: 51,654

Average Equivalent Fire Severity: 38.74 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Partial

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: HPCI Pump and Turbine Room Fire Area: RB1 R.B Division I

ROOM NO. 4111 BLDG. Reactor ELEV. 54			FIRE DETECTION TYPE: Photoelectric	FIRE SUPPRESSION TYPE: H ₂ O hose 1BHR200 Portable extinguishers
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		EMERG. LIGHTS: Yes	
I	1. HPCI pump 10P 204		CONSTRUCTION:	FIRE RATING:
I	2. HPCI booster pump 10P 217			
I	3. HPCI turbine 10S 211		Walls:	(1) 3 hour 3 hour (ctmt cyl)
I	4. HPCI gland steam cond. 10E 210			
I	5. HPCI jockey pump 1AP 228		East	3 hour
I	6. Valves:		South	Unrated (exterior wall)
I	a. HV 4922, HV F004, HV F007 (HPCI CH. A)		West	
I	b. HV F001, HV F059 (HPCI CH. A)			
I	b. HV F028, HV F026 (HPCI CH. C)			
I	7. Instrumentation (HPCI CH. A)			
I	8. Cable			
I	a. Control (HPCI CH. A)			
I	b. Power (HPCI CH. A)			
I	9. Unit Coolers 1AVH 209, 1BVH 209			
II	10. RHR A pump running signal to ADS			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. An exposure fire anywhere in the room would not prevent the reactor from being placed and maintained in a cold shutdown mode. Either the RCIC system or the manual depressurization and low pressure systems would be used for shutdown in the event all or part of the HPCI system was damaged by fire. A fide in the area would have no effect on the ability to minimize and control the release of radioactivity to the environment. The unrated steel pressure tight doors in the north and south walls are justified based the requirement for flood protection and the fire severity in the area of 18 minutes. The unrated steel blowout panel in the east wall is justified based on the requirement for steam over-pressure relief and the above listed fire severity. See the analysis of Room 4102.			Floor: Unrated (basemat)	
			Ceiling: (1) Unrated	
			Doors and Hatches	
			N. wall: (1) Unrated Steel PT door (to zone 4112)	
			S. wall: (2) Unrated Steel PT door (to zone 4110)	
			E. wall: (3) Unrated Steel blowout panel (to torus room)	
			Ceiling: (1) Unrated access hatch	
			(1) Does not separate redundant safe shutdown divisions.	
			(2) The justification for unrated construction is stated in the "Effects of Fire..." section at left.	
			Reference Drawings	
			Elec. Drawings: E-1621	
			Fire Drawings: Fig. 9.5-1 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable Insulation	2,036 lbs 4.1
			b. Lube Oil	175 gal 10.3
			c. Other (Floor Coating)	0 8.4
			d. Transient (lube oil)	55 gal 3.2
DEVIATION REQUEST: Unrated steel PT door in South wall Unrated steel blowout panel in east wall			AREA = 1,822 ft ²	TOTAL 26.0 min

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: HPCI Electrical Equip. Room		Fire Area: RB1, R.B Division I	
ROOM NO. 4112	BLDG. Reactor	ELEV. 54	
MECH		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Photoelectric	H ₂ O hose 1BHR200 Portable ext.
I	HPCI cable tray and conduit	EMERG. LIGHTS:	
I	250Vdc MCC for HPCI	Yes	
		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	
		North	3 hour
		East	Unrated
		South	3 hour
		West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	Unrated (basemat)
None. Fire in this area will not affect Division II equipment which will be used for shutdown. South 3 hr wall does not separate redundant division.		<u>Ceiling:</u>	Unrated
		<u>Doors and Hatches:</u>	Unrated (except for stairwell door)
		<u>Reference Drawings:</u>	
		Electrical Drawings - E-1611-1	
		Fire Drawings - Fig. 9.5-1 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable Insulation	8,573 lbs. 22.8
		b. Lube Oil	0
		c. Other (Floor Coating)	8.4
		d. Transient	0
DEVIATION REQUEST: None		AREA = 1403 ft ²	TOTAL 31.2 min

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: RHR Pump and Hx Room		Fire Area: RB1, R.B. Division I		
ROOM NO. 4113/4214 BLDG. Reactor		ELEV. 54/77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: I RHR pump AP202 I RHR heat exchanger AE205 I Channel A cable trays and conduit I Unit cooler AVH210 and EVH210		Photoelectric	H ₂ O hose 1BHR200 Portable ext.
SHUTDOWN DIVISION			EMERG. LIGHTS:	
			Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment will be used for safe shutdown. Rooms 4113 and 4214 are separated vertically by grating, so are treated as one fire area. RHR separated by 3 hr wall form HPCI (same division) at Elevation 54 and separated from RACS by unrated wall at elevation 77. Floor above contains Division I SACS (Elevation 102). Unrated steel blowout panel is provided to torus area. See the analysis of room 4102.		CONSTRUCTION:	FIRE RATING:	
		Walls:		
		North	Unrated	
		East	3 hour	
		South	3 hour and unrated	
		West	Unrated	
		Floor:	Unrated (basemat)	
		Ceiling:	Unrated (El. 102)	
		Doors and Hatches:	Unrated	
		Unrated blowout panel to torus area		
		Reference Drawings:		
		Electrical Drawings - E-1571-1, E-1611, E-1572 and E-1612		
		Fire Drawings - Fig. 9.5-1, 9.5-2, and 9.5-9		
		COMBUSTIBLES:	EQUIV. FIRE	
		MATERIAL:	QUANTITY SEVERITY (MIN.)	
		a. Cable Insulation	5,913 lbs 20.3	
		b. Lube Oil	39 gal 4	
		c. Other (Floor Coating)	8.4	
		d. Transient (lube oil)	39 gal 4	
DEVIATION REQUEST: Yes				
Blowout panel not UL rated				
AREA = 1091 ft ²		TOTAL	36.7 min.	

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: RHR Pump Room		Fire Area: RB1, R.B. Division I	
ROOM NO. 4114	BLDG: Reactor	ELEV. 54	
MECH		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Photoelectric	H ₂ O hose 1BHR200 Portable ext.
I	RHR Pump CP202	EMERG. LIGHTS:	
I	Unit Coolers CVH210 and GVH210	Yes	
I	Channel C cable trays and conduit		
I	Channel A cable		
II	ADS permissive PT-N056D and N055H	CONSTRUCTION:	FIRE RATING:
I	ECCS jockey pump CP228	Walls:	
		North	3 hour
		East	Unrated
		South	3 hour
		West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	Unrated (basemat)
None. RHR pump C not required for safe shutdown. Division II equipment will be used for shutdown. There are no redundant safe shutdown equipment or cable on the other side of the unrated walls or ceiling, except for in the torus compartment (room 4102). See the analysis of room 4102.		Ceiling:	Unrated
		Doors and Hatches:	Unrated
		Reference Drawings:	
		Elec. Drawings - E-1571-1	
		Fire Drawings - Fig. 9.5-1 and 9.5-9	
		COMBUSTIBLES:	
		MATERIAL:	QUANTITY EQUIV. FIRE SEVERITY (MIN.)
		a. Cable Insulation	4,292 lbs 9.7
		b. Lube Oil	39 gal 2.6
		c. Other (Floor Coating)	8.4
		d. Transient (lube oil)	39 gal 2.6
DEVIATION REQUEST: None		AREA = 1661 ft ²	TOTAL 23.3 min.

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRW and DRW Pumps and Sumps Room		Fire Area: RB1, R.B. Division I	
ROOM NO. 4115		BLDG. Reactor	ELEV. 54
MECH		FIRE DETECTION TYPE:	
SHUTDOWN DIVISION		Photoelectric	FIRE SUPPRESSION TYPE:
SAFE SHUTDOWN EQUIPMENT AND CABLE:			H ₂ O hose 1BHR200 & 1CHR200 Portable ext.
I	Division I conduit	EMERG. LIGHTS:	
		Yes	
		CONSTRUCTION:	
		FIRE RATING:	
		<u>Walls:</u>	
		North	3 hour
		East	Unrated
		South	3 hour
		West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	
None. Redundant Division II equipment will be used for shutdown. No redundant equipment located in adjacent rooms separated by unrated walls, except for the torus compartment. See analysis of rooms 4102.		Unrated (basemat)	
		<u>Ceiling:</u>	
		Unrated	
		<u>Doors and Hatches:</u>	
		Unrated	
		<u>Reference Drawings:</u>	
		Elec. Drawings - E-1541-1	
		Fire Drawings - Fig. 9.5-1 and 9.5-9	
		COMBUSTIBLES:	
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>EQUIV. FIRE SEVERITY (MIN.)</u>
		a. Cable Insulation	1,360 lbs 7.4
		b. Lube Oil	0
		c. Other (charcoal filter)	99 lbs 1.4
		(Floor Coating)	8.4
		(plastic blanket)	0.24
		d. Transient	0
DEVIATION REQUEST: None			
		AREA = 690 ft ²	TOTAL 17.44 min.

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Core Spray Pump Room		Fire Area: RB1, R.B. Division I	
ROOM NO. 4116	BLDG. Reactor	ELEV. 54	FIRE DETECTION TYPE:
MECH			Photoelectric
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE SUPPRESSION TYPE:
I	Core Spray Pump 1CP206		H ₂ O hose 1CHR200
I	Unit Coolers CVH211 and GVH 211		Portable ext.
II	ADS permissive PT-N055H		
		EMERG. LIGHTS:	
		Yes	
		CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	3 hour
		East	Unrated
		South	3 hour
		West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	Unrated (basemat)
None. Core Spray not required for safe shutdown. ADS permissive is not required for safe shutdown.		Ceiling:	Unrated
Division I and II cabling has coordinated protective devices; therefore will not effect shutdown using Division I or II from MCR.		Doors and Hatches:	Unrated
		Reference Drawings:	
		Elec. Drawings - E-1551-1	
		Fire Drawings - Fig. 9.5-1 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable Insulation	5,814 lbs 21.0
		b. Lube Oil	15 gal 1.7
		c. Other (Floor Coating)	8.4
		d. Transient (lube oil)	15 gal 1.7
DEVIATION REQUEST: None		AREA = 1000 ft ²	TOTAL 32.8 min

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule		Fire Area: RB1, R.B. Division I	
ROOM NO. 4117	BLDG. Reactor	ELEV. 54	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE:
SHUTDOWN DIVISION	None		Photoelectric
			FIRE SUPPRESSION TYPE:
			H ₂ O hose 1CHR200 Portalbe ext.
			EMERG. LIGHTS:
			Yes
			CONSTRUCTION:
			FIRE RATING:
			Walls:
			See Figure 9.5-1
			North
			East
			South
			West
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:
None			Unrated (basemat)
			Ceiling:
			Unrated
			Doors and Hatches:
			Unrated, except for stairwell door
			Reference Drawings:
			Electrical Drawings - F-1511
			Fire Drawings - Fig. 9.5-1 and 9.5-9
			COMBUSTIBLES:
			EQUIV. FIRE
			MATERIAL: QUANTITY SEVERITY (MIN.)
			a. Cable Insulation 0
			b. Lube Oil 0
			c. Other (Floor Coating) 8.4
			d. Transient 0
DEVIATION REQUEST: Yes			
Non-rated door			AREA = 96ft ² TOTAL 8.4

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Core Spray Pump Room		Fire Area: RB1, R.B. Division I	
ROOM NO. 4118	BLDG. Reactor	ELEV. 54	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE:
SHUTDOWN DIVISION			Photoelectric
I	Core Spray Pump AP206		FIRE SUPPRESSION TYPE:
I	Unit Coolers AVH211 and EVH211		H ₂ O hose 1CHR200
II	ADS permissive PT-N055D		Portable ext.
			EMERG. LIGHTS:
			Yes
			CONSTRUCTION:
			FIRE RATING:
			Walls:
			North 2 hour - Stairwell
			East 3 hour
			South 3 hour
			West 3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor: Basemat (unrated)
None. Core Spray is not required for safe shutdown. ADS permissive is not required for safe shutdown. Division I and II cable has coordinated protective devices; therefore, will not affect shutdown using Division I or II from the MCR.			Ceiling: Unrated
			Doors and Hatches: Unrated
			Reference Drawings:
			Elec. drawings - E-1511-1
			Fire drawings - Fig. 9.5-1 and 9.5-9
			COMBUSTIBLES:
			MATERIAL: QUANTITY EQUIV. FIRE SEVERITY (MIN.)
			a. Cable Insulation 3,892 lbs 16.4
			b. Lube Oil 15 gal 1.9
			c. Other (Floor Coating) 8.4
			d. Transient (lube oil) 15 gal 1.9
DEVIATION REQUEST: Yes			
Non-rated door			AREA = 888 ft ² TOTAL 28.6 min.

TABLE 9A-8 (Cont)

ROOM: RACS Pump/RACS Hx/ Passageway		Fire Area: RB1, R.B. Division I	
ROOM NO. 4209, 4211, 4213	BLDG. Reactor	ELEV. 77	
MECH		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Photoelectric	H ₂ O hose 1FHR200,
DIVISION			1EHR200
I	Channel A cable for: SSW control and inst, SACS, MCC control power, core spray, HPCI, RHR, SSW valve, HV2357A, RHR Hx flow, RHR room cooling	EMERG. LIGHTS:	Portable extinguisher
	Channel C Cable for: SSW valve HV2346 dampers and HPCI leak detection	Yes	
II	Channel D cable for: HV2357B, RHR Hx flow, RHR room cooling, RCIC trip, SWS bypass to yard, RACS, SACS/TACS isolation valves	CONSTRUCTION:	FIRE RATING:
	Channel D cable for: RCIC PT-N055D and H (RCIC trip)	Walls:	
		North	3 hour and unrated
		East	3 hour and unrated
		South	3 hour
		West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour (above 4108 & 4110)
None. An exposure fire anywhere in this area would not prevent the reactor from being placed and maintained in a cold shutdown mode.		Ceiling:	Unrated
Redundant Division I and II safe shutdown equipment (valves, cables, etc.) are greater than 100 feet apart. There are, however, four cable trays traversing between the divisions, and there is no automatic suppression system. Redundant Division II instruments can be lost without affecting the ability to shut down using manual depressurization and low-pressure injection in Division II.		Doors and Hatches:	
Spurious operation has been considered, and none will prevent safe shutdown. There are no associated circuits of concern in this area, since all associated circuits have coordinated protective devices.		Hatches: 3 hour above 4108 & 4110	
Redundant Division I and II instrumentation for HPCI and RCIC is located in rooms 4219 and 4210, respectively. These two rooms are adjacent to 4209/4211 unrated walls; however, there is greater than 40 feet and two 12-inch unrated walls between them. Loss of 4219 and 4210 instrumentation has already been assumed in the analysis of 4209 and 4211, since their cable is located therein.		Doors: Pressuretight	
Summation: All Division II cable and valve in this room can be lost and still retain the ability to shut down using Division II.		HVAC is south wall does not contain fire barrier	
The nearest redundant safe shut down cable is in 4205. See the analysis of 4207 for justification of PT door and HVAC into 4207.		Reference Drawings:	
		Electrical drawings - E-1612, E-1582, E-1622, E-1632	
		Fire drawings - Fig. 9.5-2 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable Insulation	15,940 lbs 14.8
		b. Lube Oil	6 gal 0.15
		c. Other(Floor Coating)	6.08
		d. Transient (lube oil)	6 gal 0.15
DEVIATION REQUEST: Yes		AREA = 4036 ft ²	TOTAL 21.18 min
HVAC ducts without fire dampers			

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Safeguard Instrumentation Room		Fire Area: RB1, R.B Division I	
ROOM NO.	BLDG. Reactor	ELEV. 77 to 87	FIRE DETECTION TYPE:
MECH			Photoelectric
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		H ₂ O hose 1EHR200 Portable extinguishers
II	Conduit and RCIC instruments		EMERG. LIGHTS:
			Yes
		CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	Unrated
		East	3 hour
		South	3 hour
		West	Unrated
		Floor:	3 hour
		Ceiling:	Unrated
		Doors and Hatches:	Unrated
		Pressure tight door	
		Reference Drawings:	
		Elec. drawings - E-1582 and E-1622	
		Fire drawings - Fig. 9.5-2 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable Insulation	0
		b. Lube Oil	0
		c. Other	0
		d. Transient	0
		AREA = 180 ft ²	TOTAL 0 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Division II equipment will be used for safe shutdown. There are unrated walls separating 4210 and the remainder of the Division I cable. Assuming the Division I cable in 4213/4211/4210 and 4209 are affected, shutdown can be accomplished using manual depressurization and low pressure systems in Division II which have III.G.2 separation.			
DEVIATION REQUEST: None			

TABLE 9A-8

FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: RBl, R.B. Division I

ROOM NO.	4212	BLDG.	Reactor.	ELEV.	77 to 87	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					None	H ₂ O hose 1FHR200
	None					EMERG. LIGHTS:	Portable extinguishers
						No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:						CONSTRUCTION:	FIRE RATING:
						Walls:	Unrated
						North	
						East	
						South	
						West	
						Floor:	Unrated
						Ceiling:	Unrated
						Doors and Hatches:	Unrated
						None	
Elec. Drawings - E-1612							
Fire Drawings - Fig. 9.5-2 and 9.5-9							
DEVIATION REQUEST: None						COMBUSTIBLES:	
						MATERIAL:	EQUIV. FIRE SEVERITY (MIN.)
						QUANTITY	
						a. Cable insulation	0
						b. Lube oil	0
						c. Other	0
						d. Transient	0
						AREA = 28 ft ²	TOTAL 0

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Elec. Equipment Area				Fire Area: RB1. R.B. Division 1					
ROOM NO. 4215		BLDG. Reactor		ELEV. 77		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH		SAFE SHUTDOWN EQUIPMENT AND CABLE:				Photoelectric		H ₂ O hose 1FHR200	
SHUTDOWN DIVISION						EMERG. LIGHTS:		Portable extinguishers	
I									
I									
II		RPV level and pressure 10C004 Channel A conduit for: Post Accident Monitoring, Core Spray testable logic, HPCI testable logic, RHR flow, RHR press and flow transmitters Channel C: SSW Channel B: RHR pressure PT-N057, FRVS torus room Channel D: ADS logic input				Yes			
						CONSTRUCTION:		FIRE RATING:	
						<u>Walls:</u>			
						North		3 hour	
						East		Unrated	
						South		3 hour	
						West		Unrated	
		EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				<u>Floor:</u>		Unrated	
		None. Redundant Division II equipment will be used for safe shutdown. Division II cable in this area is for the RHR shutdown suction pressure alarm and for the torus area FRVS air return. RHR alarm is not required. Lack of fresh air to torus area will not affect safe shutdown (Temperature is dictated by suppression pool temperature). Therefore, loss of Division II cable in this area will not affect shutdown using Division II equipment elsewhere. There are no redundant safe shutdown equipment or cable in rooms adjacent to 4215 unrated walls.				<u>Ceiling:</u>		Unrated	
						<u>Doors and Hatches:</u>		Unrated	
						HVAC into torus room contains pipe and valves which isolate on high temperature instead of duct and fire dampers.			
						<u>Reference Drawings:</u>			
						Elec. Drawings - E-1572 Fire Drawings - Fig. 9.5-2 and 9.5-9			
		COMBUSTIBLES:				EQUIV. FIRE			
		<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>			
		a. Cable Insulation		11,333 lbs		31.0			
		b. Lube Oil				0			
		c. Other (Floor Coating)				6.08			
		d. Transient				0			
DEVIATION REQUEST:		No fire damper							
		AREA = 1348 ft ²				TOTAL		37.08 min.	

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor		Fire Area: RB1, R.B. Division I																			
ROOM NO. 4216	BLDG. Reactor	ELEV. 77																			
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE: Photoelectric																		
SHUTDOWN DIVISION			FIRE SUPPRESSION TYPE: H ₂ O hose 1FHR200 & 1GHR200 Portable extinguishers																		
II	Conduit for: ADS permissive		EMERG. LIGHTS:																		
II	RHR Shutdown Cooling Suction Pressure Alarm																				
I	Post Accident Level Indication BB-LT-3622A																				
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		CONSTRUCTION: FIRE RATING:																			
None. Conduit/cable in this room is not required for safe shutdown.		<u>Walls:</u> North 3 hour East Unrated South 3 hour West Unrated <u>Floor:</u> Unrated <u>Ceiling:</u> Unrated <u>Doors and Hatches:</u> Unrated Pressure tight door to east <u>Reference Drawings:</u> Elec. Drawings - E-1542 Fire Drawings - Fig. 9.5-2 and 9.5-9																			
DEVIATION REQUEST: None		COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN.)</th> </tr> </thead> <tbody> <tr> <td>a. Cable Insulation</td> <td>4,305 lbs</td> <td>23.4</td> </tr> <tr> <td>b. Lube Oil</td> <td></td> <td></td> </tr> <tr> <td>c. Other (Floor Coating)</td> <td></td> <td>6.08</td> </tr> <tr> <td>d. Transient</td> <td></td> <td></td> </tr> <tr> <td colspan="2">AREA = 690 ft²</td> <td>TOTAL 29.48 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)	a. Cable Insulation	4,305 lbs	23.4	b. Lube Oil			c. Other (Floor Coating)		6.08	d. Transient			AREA = 690 ft ²		TOTAL 29.48 min.
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)																			
a. Cable Insulation	4,305 lbs	23.4																			
b. Lube Oil																					
c. Other (Floor Coating)		6.08																			
d. Transient																					
AREA = 690 ft ²		TOTAL 29.48 min.																			

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Motor Control Center Area		Fire Area: RB1, R.B. Division I	
ROOM NO. 4218	BLDG. Reactor	ELEV. 77	FIRE DETECTION TYPE:
MECH			Photoelectric
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE SUPPRESSION TYPE:
I	Channel C Cable tray and conduit for: SSW, SACS, HPCI, CS, RHR, RHR and CS Room Coolers.		H ₂ O hose 1GHR200
I	Channel A Suppression Pool Temperature Recorder		Portable extinguishers
II	ADS permissive		
		CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	3 hour
		East	3 hour
		South	3 hour
		West	Unrated
		Floor:	Unrated
		Ceiling:	Unrated
		Doors and Hatches:	See fire drawings
		South wall has unrated door and two HVAC ducts.	
		Reference Drawings:	
		Elec. Drawings - E-1512	
		Fire Drawings - Fig. 9.5-2 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable insulation	10,251 lbs 19.7
		b. Lube Oil	0
		c. Other (Floor Coating)	6.08
		d. Transient	0
		AREA = 1348 ft ²	TOTAL 25.78 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Redundant Division II equipment will be used for safe shutdown. Part of Redundant Division II cable is separated by 3-hour rated 12-inch thick wall* (to room 4201) and in addition, 30-feet without intervening combustibles or fire hazards (in room 4201). Fire detectors are provided, however, automatic suppression is not provided. There is over 120-feet of horizontal distance plus the 12-inch unrated wall between cable trays containing redundant safe shutdown cable. In addition, partial coverage by an automatic suppression system is provided over the Division II cable in 4201. An exemption is therefore requested for automatic suppression required by III.G.2.b.			
Division II cables in this area are not required for safe shutdown. There are no redundant safe shutdown cabling in the areas above or below 4218.			
*Door and HVAC through walls are not rated. See justification in 4201 EFFECTS OF FIRE.			
DEVIATION REQUEST: Automatic suppression system			

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Safeguard Instrument Room		Fire Area: RB1, R.B. Division I	
ROOM NO. 4219	BLDG. Reactor	ELEV. 77 to 87	FIRE DETECTION TYPE:
MECH			Photoelectric
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE SUPPRESSION TYPE:
I	HCPI leak detection rack 10C016 Channel A cable tray containing: HCPI Instrumentation, SACS Instrumentation		H ₂ O hose 1FHR200 Portable extinguishers
		EMERG. LIGHTS:	
		Yes	
		CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	Unrated
		East	3 hour
		South	Unrated
		West	Unrated
		Floor:	3 hour
		Ceiling:	Unrated
		Doors and Hatches:	Unrated
		Pressure tight door	
		Reference Drawings:	
		Elec. Drawings - E-1582 and E-1622	
		Fire Drawings - Fig. 9.5-2 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	SEVERITY (MIN.)
		a. Cable Insulation	0 lbs
		b. Lube Oil	0
		c. Other	0
		d. Transient	0
		AREA = 180 ft ²	TOTAL
			0 min
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Redundant Division II equipment will be used for safe shutdown. See also analysis of 4209/4211 and 4210. Shutdown is assured using manual depressurization and low pressure systems in Division II.			
DEVIATION REQUEST: None			

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor and Elect. Equip. Area		Fire Area: RB1, R.B. Division I	
ROOM NO. 4301 & 4310	BLDG. Reactor	ELEV. 102	
MECH			FIRE DETECTION TYPE:
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Photoelectric
DIVISION			Heat actuated
I	Channel C cable for: SACS C pump, Heat Exchanger Valves; RHR C Pump Motor Cooling; RHR Unit Cooler C and G Valves; Core Spray Unit Cooler C and G valves and Channel C dist. panel, SSW valves for 1A2E201 SACS Hx; HPCI, Primary Containment Inst Gas Iso valves; Suppression Pool level inst.; RHR pump C; Control Area Chilled Water valves to AVH214 and BVH214 SACS Unit Coolers.		EMERG. LIGHTS:
I	Channel C MCC 10B232		Yes
I	Channel A cable for Recirc Pump Trip		
II	Channel D cable for: SACS Valves to Cont Inst Gas Compressor; RCIC; RHR Valves for LPCI Injection, Shutdown Cooling Return; Main steam relief Valves (ADS) PSV F013 A,B,C,D and E		
II	Channel B cable for recirc. pump trip.		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		CONSTRUCTION:	FIRE RATING:
None. Partial coverage by an automatic preaction sprinkler system is provided over the Channel D cable. This cable is only located in the southern end of 4301. The sprinkler system covers all the Channel D cable plus the narrow corridor. There is greater than 120 feet separating Channel C and D which includes areas of negligible combustibles. An early warning Photoelectric detection system is installed. This combination of automatic suppression, detection, distance and combustible yields an equivalent III.G.2.b. separation. Shutdown will be accomplished using Division II equipment		Walls:	
		North	3 hour
		East	3 hour
		South	3 hour to 4303
		West	3 hour to 4315
		Floor:	3 hour above 4201
		Ceiling:	Unrated, except for 3 hr rated steam tunnel floor section
		Doors and Hatches:	
		Unrated pressure tight door to airlock 4313	
		Unrated floor hatches	
		Reference Drawings:	
		Elec. Drawings - E-1533, E-1563 and E-1522	
		E-1512	
		Fire Drawings - Fig. 9.5-3 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable Insulation	36,291 lbs 42.4
		b. Lube Oil	
		c. Other	
		(Floor Coating)	5.25
		d. Transient	
		AREA = 3226 ft ²	TOTAL 47.65 min.
DEVIATION REQUEST: Yes			
Non-rated doors			

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: SACS Heat Exchanger and Pump Room Fire Area: RB1, R.B. Division I

ROOM NO.	4309	BLDG.	Reactor	ELEV.	102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH						Photoelectric	H ₂ O hose 1KHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:						Portable extinguishers
DIVISION							
I	SACS Hx 1A1E201 and 1A2E201					EMERG. LIGHTS:	
	SACS pump 1AP210, 1CP210					Yes	
	SACS control panels: 1AC201, 1CC201						
	Power supply MCC10B212						
	Unit coolers 1AVH214 and 1CVH214						
	Valves HV2491A, HV2522A & C, and HV2496ARC						
	Power and control cabling for: SSW, SACS, HPCI-MCC, Recirc, Pump Trip, RHR, Core Spray, HPCI and Unit Coolers 1AVH214 and 1BVH214					CONSTRUCTION:	FIRE RATING:
						Walls:	
						North	3 hour
						East	3 hour (1)
						South	3 hour
						West	Unrated (exterior)
II	Power of Control for: FT-2544B (Channel B) & Ft-2544D, (Channel D); and Unit Cooler CVH214 Control and Instr.						
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:							
A postulated fire in room 4309 can damage both SACS room coolers GR-AVH214 and GR-CVH214 as they are located in the same room. A fire induced hot short in a control cable associated with the SACS room cooler GR-CVH214 low air flow switch could cause tripping of the credited Division II chilled water pump GJ-BP400 and prevent restart of the BP400 pump. Failure of GJ-BP400 can cause loss of cooling to SACS and switchgear room coolers, and control room HVAC. Manual action to open breaker 10B242-221 to isolate fault in GR-CVH214 is required as documented in Operational Procedures HC.OP-AB.FIRE-0001(Q) (for SACS room cooler GR-CVH214) located in the Reactor Building, Room 4201, Fire Area RB2 and to restart BP400 manually from the control room. Coordinated protective devices protect Division II power from hot shorts of shorts to ground caused by fire in this area. The TACS flow logic is not required for safe shutdown.							
The pressure tight door and access panel to room 4307 is required for flood protection. The door and panel are of substantial design, are constructed of non-combustible material except for the seal, and the fire loading in the adjacent room is low (8 minutes)							
There are no redundant equipment or cabling in rooms adjacent to unrated walls floors or ceilings except PT doors/panels noted above.							
DEVIATION REQUEST:						COMBUSTIBLES:	EQUIV. FIRE
See deviation request for Zone 4307.						MATERIAL:	QUANTITY SEVERITY (MIN.)
						a. Cable Insulation	26,792 lbs 16.2
						b. Lube Oil	4 gal 0.1
						c. Other (Floor Coating)	5.25
						d. Transient (lube oil)	4 gal 0.1
						AREA = 6420 ft ²	TOTAL 21.65 min

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule		Fire Area: RB1, R.B. Division I	
ROOM NO. 4311	BLDG. Reactor	ELEV. 102	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE:
SHUTDOWN DIVISION	None		Photoelectric
			FIRE SUPPRESSION TYPE:
			H ₂ O hose 1LHR200
			Portable extinguishers
			EMERG. LIGHTS:
			No
			CONSTRUCTION:
			FIRE RATING:
			Walls:
			North 3 hour
			East 2 hour
			South Unrated
			West Unrated
			Floor: Unrated
			Ceiling: Unrated
			Doors and Hatches: Unrated, except for stairwell door
			Reference Drawings:
			Elec. Drawings - E-1513
			Fire Drawings - Fig. 9.5-3
			COMBUSTIBLES:
			MATERIAL: QUANTITY EQUIV. FIRE SEVERITY (MIN.)
			a. Cable Insulation 0
			b. Lube Oil 0
			c. Other (Floor Coating) 5.25
			d. Transient 0
			AREA = 156 ft ² TOTAL 5.25 min
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None			
DEVIATION REQUEST: None			

TABLE 9A-8

FIRE HAZARD ANALYSIS TABULATION

ROOM: Personnel Airlock

Fire Area: RBI, RB, Division I

ROOM NO.	4313	BLDG.	Reactor	ELEV.	102 to 112	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Suppression Pool Level					None	H ₂ O hose 1NHR400, 1LHR200 Portable extinguishers	
						EMERG. LIGHTS:		
I						No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Division I or II can be used for safe shutdown.						CONSTRUCTION:	FIRE RATING:	
						Walls:	Unrated	
						North		
						East		
						South		
						West		
						Floor:	Unrated	
						Ceiling:	Unrated	
						Doors and Hatches:	Unrated	
						Reference Drawings:		
						Elec. Drawings - E-1513		
						Fire Drawings - Fig. 9.5-3		
						COMBUSTIBLES:		EQUIV. FIRE
						MATERIAL:	QUANTITY	SEVERITY (MIN.)
						a. Cable insulation		0
						b. Lube oil		0
						c. Other		0
						d. Transient		0
						AREA = 25 ft ²	TOTAL	0
DEVIATION REQUEST: None								

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRD Removal and Repair Area Fire Area: RB1, R.B. Division I

ROOM NO. 4326/4333 BLDG. Reactor ELEV. 102		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH		Photoelectric	H ₂ O hose 1PHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Portable extinguishers
I	Channel A Cable Tray containing: CS, HPCI, RHR, SACS, and PCIGS cable.	EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment will be used for safe shutdown. Separation consists of a 3 hour rated 8-in. thick wall. However, 4326 is connected to the Division II area without Appendix R fire barrier through 4328, 4331, and 4315. 4315 has 60 feet of clear space and a low ceiling (fire trap) which provides an adequate fire break between divisions. West wall is sealed as a 3-hour barrier, however, because of the wide open equipment airlock separating divisions, a fire damper is not needed in the HVAC to assure one division is free of fire damage.		CONSTRUCTION:	FIRE RATING:
		Walls: North East South West	Unrated Unrated Unrated 3-hour
		Floor:	3-hour
		Ceiling:	Unrated
		Doors and Hatches:	Unrated
		Open to CRD Storage Area 4333 without door Open to 4328 via 1/2 height wall	
		Reference Drawings: Elec. Drawings - E-1573 Fire Drawings - Figures 9.5-3 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	SEVERITY (MIN.)
		a. Cable Insulation 6,603 lbs	24.76
		b. Lube Oil	0
		c. Other (Floor Coating)	10.51
		d. Transient (wood) 500 lbs	3.38
		e. Transient (other)	3.00
		AREA = 1,000 ft ²	TOTAL 41.65 min.
DEVIATION REQUEST: Automatic suppression system			
Yes, Lack of 3 hr ceiling			

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRD Hydraulic Control Units Area Fire Area: RB1, R.B. Division I					
ROOM NO. 4328		BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: I Channel A Cable Tray for: SACS, CS, HPCI, RHR & PCIGS. I Channel C Cable Tray for: SACS, CS, RHR & PCIGS.			Photoelectric	H ₂ O hose 1AHR201
SHUTDOWN DIVISION					Portable extinguishers
				EMERG. LIGHTS:	
				Yes	
				CONSTRUCTION:	FIRE RATING:
				Walls:	See fire drawings
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	3 hour
None. Redundant Division II equipment will be used for safe shutdown. Room 4328 is connected to 4331 without a door or a wall. Both rooms contain only Division I safe shutdown cable and are separated by a clear space in 4315 from Division I cable tray.				Ceiling:	unrated
				Doors and Hatches:	unrated
				Reference Drawings:	
				Electrical Drawings -	E-1543
				Fire Drawings - Figures 9.5-3 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable Insulation	4,523 lbs 14.5
				b. Lube Oil	
				Hydraulic Fluid	3.64 gal 0.35
				c. Other (Floor Coating)	7.58
				d. Transient	0
DEVIATION REQUEST: Yes, Lack of 3 hr ceiling				AREA = 1,167 ft ²	TOTAL 22.43 min.

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Drywell Access Room		Fire Area: RB1, R.B. Division I	
ROOM NO. 4330	BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:
MECH			Photoelectric
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE SUPPRESSION TYPE:
I	Channel C Cable Tray for HPCI Steam and Primary Containment Instrumentation Gas inboard isolation valve.		H ₂ O hose 1AHR201
			Portable extinguishers
		EMERG. LIGHTS:	
		Yes	
		CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	
		East	
		South	
		West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour
None. Redundant Division II equipment will be used for safe shutdown.		Ceiling:	Unrated
		Doors and Hatches:	Unrated
		Drywell access plug	
		Reference Drawings:	
		Elec. Drawings - E-1543	
		Fire Drawings - Figures 9.5-3 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	SEVERITY (MIN.)
		a. Cable Insulation 1,986 lbs	29.8
		b. Lube Oil	0
		c. Other (plastic blanket) 11 lbs	0.48
		d. Transient	0
DEVIATION REQUEST: Yes, Lack of 3 hr ceiling		AREA = 250 ft ²	TOTAL 30.28 min.

TABLE 9A-8 (Cont)

ROOM: Personnel and Equipment Access Area Fire Area: RB1, R.B. Division I

ROOM NO. 4331	BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1AHR201
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguishers
I	Channel C cable tray and conduit for SACS, core spray, HPCI, RHR, and PCIGS		EMERG. LIGHTS:	
II	Channel B recirculation pump trip		Yes	
			CONSTRUCTION:	FIRE RATING:
			<u>Walls:</u>	
			North	Unrated
			East	Unrated
			South	Unrated
			West	3 hour/open
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	3 hour
	None. Redundant Division II equipment will be used for safe shutdown.		<u>Ceiling:</u>	Unrated
	Room 4315 has greater than 60 ft of clear space, with negligible in-situ combustibles.		<u>Doors and Hatches:</u>	Unrated
			No door between 4331, 4332, and 4315 areas	
			<u>Reference Drawings:</u>	
			Electrical Drawings - E-1513, E-1523, E-1543	
			Fire Drawings - Fig. 9 5-3 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			<u>MATERIAL:</u>	<u>QUANTITY</u>
			a. Cable Insulation	7773 lb 20.1
			b. Lube Oil	0
			c. Work station and associated material (Floor Coating)	235 lb 1.5
			d. Transient	7.58
				0
	DEVIATION REQUEST: Automatic suppression system		AREA = 1448 ft ²	TOTAL 29.18 min.
	Lack of 3 hr ceiling			

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

ROOM: Washdown Area		Fire Area: RB1, R.B. Division I	
ROOM NO. 4332	BLDG. Reactor	ELEV. 102	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE:
SHUTDOWN DIVISION	None		Photoelectric
I	HPCI valves cable		EMERG. LIGHTS:
			No
		CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	Unrated
		East	open to 4331
		South	3 hour (steam tunnel)
		West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour
None. This area is part of 4331. Division II will be used for safe shutdown.		Ceiling:	Unrated
		Doors and Hatches:	none
		Reference Drawings:	
		Elec. Drawings - E-1523	
		Fire Drawings - Figures 9.5-3 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable Insulation	1,190 lbs 33.1
		b. Lube Oil	0
		c. Other	0
		d. Transient	0
DEVIATION REQUEST: Yes, Lack of 3 hr ceiling		AREA = 135 ft ²	TOTAL 33 min.

TABLE 9A-8
FIRE HAZARD ANALYSIS TABULATION

THIS PAGE IS INTENTIONALLY LEFT BLANK. THIS INFORMATION IS NOW INCLUDED ON PAGE 21 OF THIS TABLE.

TABLE 9A-9

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: RB2, Reactor Building Division II

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

A postulated fire in room 4307 can damage both SACS room coolers GR-BVH214 and GR-DVH214 as they are located in the same room. A fire induced hot short in a control cable associated with the SACS room cooler GR-BVH214 low air flow switch could cause tripping of the credited Division I chilled water pump GJ-AP400 and prevent restart of the AP400 pump. Manual action to open breaker 10B232-154 is required to isolate fault from GR-BVH214. Redundant Division I equipment using HPCI will be relied upon for safe shutdown. Normally closed HPCI test return to Condensate Storage valve, BJ-HV-F008, could fail as is or spuriously close. This is acceptable since HPCI can be started on low reactor level and stopped on high level automatically or remote manually since those circuits are not affected. The ADS/SRV circuits are located in this Fire Area. A postulated fire in Rooms 4201, 4317, 4318, can cause failure of cables associated with both channels B and D for a number of ADS/SRVs control and actuations. A postulated fire in Rooms 4303, 4320 and 4322 can cause failure of all 14 ADS/SRVs.

Power and control circuitry for all SRVs are from Channel B (Div II) and ADS valves are from Channel B and D (Div II). In the unlikely event of a fire that propagates into multiple rooms in this Fire Area and affects all 14 SRV circuits, implementation of emergency repair actions for Remote Manual Operation of ADS/SRV's may be required. This will ensure the ability to depressurize the plant to the point for Shutdown Cooling mode of RHR operation.

Total BTU Combustibles: 1,064,946,048

Total Floor Area: 26908 ft²

Average BTU/ft²: 39,577

Average Equivalent Fire Severity: 29.68 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Partial

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Torus Water Clean-up Pump Room		Fire Area: RB2, Reactor Building Division II	
ROOM NO.	4101	BLDG.	Reactor
		ELEV.	54
FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
Photoelectric		H ₂ O hose 1CHR200 Portable ext.	
EMERG. LIGHTS:			
Yes			
CONSTRUCTION:		FIRE RATING:	
<u>Walls:</u>			
North		3 hour	
East		3 hour	
South		Unrated	
West		3 hour	
<u>Floor:</u>		Unrated (basemat)	
<u>Ceiling:</u>		Unrated	
<u>Doors and Hatches:</u>		Unrated	
<u>Reference Drawings:</u>			
Elec. Drawings - E-1521-1			
Fire Drawings - Fig. 9.5-1 and 9.5-9			
COMBUSTIBLES:		EQUIV. FIRE	
<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>	
a. Cable insulation		0	
b. Lube oil		0	
c. Other (Floor Coating)		8.4	
d. Transient		0	
AREA = 725 ft ²		TOTAL	8.4
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Coordinated protective devices will protect divisionalized cable in this room. Cable is not required for shutdown.			
DEVIATION REQUEST: Yes, Non-rated door			

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: RB2, Reactor Building Division II

ROOM NO.	4103	BLDG.	Reactor	ELEV.	54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH						Photoelectric	H ₂ O hose 1DHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:						Portable extinguisher
DIVISION	None					EMERG. LIGHTS:	
						Yes	
						CONSTRUCTION:	FIRE RATING:
						<u>Walls:</u>	Unrated, except stairwell enclosure
						North	
						East	
						South	
						West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:					<u>Floor:</u>	Unrated (basemat)
	None					<u>Ceiling:</u>	Unrated
						<u>Doors and Hatches:</u>	Unrated, except for stairwell door
						Reference Drawings:	
						Elec. Drawings -	E-1531
						Fire Drawings -	Fig. 9.5-1 and 9.5-9
						COMBUSTIBLES:	EQUIV. FIRE
						<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
						a. Cable insulation	0
						b. Lube oil	0
						c. Other (Floor Coating)	8.4
						d. Transient	0
	DEVIATION REQUEST: None					AREA = 126 ft ²	TOTAL 8.4

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Core Spray Pump Room

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4104	BLDG. Reactor	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1DHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable ext.
II	Core spray pump BP206		EMERG. LIGHTS:	
II	Unit coolers BVH211 and FVH211			
II	Cable tray and conduit for SSW, SACS, RCIC, CS, RHR	Yes		
I	Cable and valve BF-HV-4005 (control rod drive isolation valve)			
			CONSTRUCTION:	FIRE RATING:
			Walls:	See Fire Drawings
			North	
			East	
			South	
			West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	unrated (basemat)
	None. Redundant Division I SACS, SSW, HPCI and RHR will be used for shutdown. These systems are not located in rooms adjacent to 4104 unrated walls or ceiling.		Ceiling:	unrated
			Doors and Hatches:	unrated
			Reference Drawings:	
			Elec. Drawings - E-1531-1	
			Fire Drawings - Fig. 9.5-1 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable insulation	7,522 lb 31.8
			b. Lube oil	17.65 gal 2.2
			c. Other (Floor Coating)	8.4
			d. Transient (lube oil)	15 gal 1.9
			e. Plastic	0.26 lb. 0.0
			AREA = 888 ft ²	TOTAL 44.3 min
	DEVIATION REQUEST: Yes, Non-rated door			

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Core Spray Pump Room

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4105	BLDG. Reactor	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1DHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguisher
II	Core Spray Pump DP206 Unit Spray Coolers DVH211 and HVH211 Cable tray and conduit for SSW, CS, SACS, RCIC & RHR		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated (basemat)
None. Redundant Division I SSW, SACS, HPCI, and RHR will be used for shutdown. None of the redundant equipment or cabling is located in rooms adjacent to 4105 unrated walls or ceiling.			Ceiling:	Unrated
			Doors and Hatches:	Unrated
			Reference Drawings:	
			Elec. Drawings - E-1531-1	
			Fire Drawings - Fig. 9.5-1 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable insulation	2.879 lbs 12.7
			b. Lube oil	15 gal 2
			c. Other (Floor Coating)	8.4
			d. Transient (lube oil)	15 gal 2
			e. Plastic	4 lbs 0.07
			AREA = 848 ft ²	TOTAL 25.17 min.
DEVIATION REQUEST: None				

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRW/DRW Pumps and Sump Room

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4106	BLDG. Reactor	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1AHR200 & 1DHR200 Portable ext.
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	3 hour
			East	Unrated
			South	Unrated
			West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:	None		Floor:	Unrated (basemat)
			Ceiling:	Unrated
			Doors and Hatches:	Unrated
			Reference Drawings:	
			Elec. Drawings - E-1561-1	
			Fire Drawings - Fig. 9.5-1 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	1,275 lbs 6.9
			b. Lube oil	0
			c. Other (charcoal filter)	99 lbs 1.4
			(Floor Coating)	8.4
			d. Transient	0
DEVIATION REQUEST: None			AREA = 690 ft ²	TOTAL 16.7 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: RHR Pump Room

Fire Area: RB2, Reactor Building Division II

ROOM NO.4107		BLDG. Reactor	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Photoelectric	H ₂ O hose 1AHR200 Portable ext.
II	RHR Pump DP202			EMERG. LIGHTS:	
II	Unit Coolers DVH210 and HVH210			Yes	
II	ECCS jockey pump DP228				
II	RHR Rack 10C069				
II	Cable tray and conduit for SACS, RCIC, RHR, ADS			CONSTRUCTION:	FIRE RATING:
				<u>Walls:</u>	
				North	3 hour
				East	Unrated
				South	Unrated
				West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				<u>Floor:</u>	Unrated (basemat)
None. RHR D not required for safe shutdown. Division I will be used for safe shutdown. Redundant systems are not located in rooms adjacent to 4107 unrated walls or ceiling.				<u>Ceiling:</u>	Unrated
				<u>Doors and Hatches:</u>	Unrated
				<u>Reference Drawings:</u>	
				Elec. Drawings - E-1631-1	
				Fire Drawings - Fig. 9.5-1 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
				a. Cable insulation	4,900 lbs 13.6
				b. Lube oil	39 gal 3.1
				c. Other (Floor Coating)	8.4
				d. Transient (lube oil)	39 gal 3.1
DEVIATION REQUEST: None				AREA = 1384 ft ²	TOTAL 28.2 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: RCIC Elec. Equipment Room Fire Area: RB2, Reactor Building Division II

ROOM NO.	4108	BLDG.	Reactor	ELEV.	54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH						Photoelectric	H ₂ O hose 1AHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:						Portable ext.
II	Cable tray and conduit containing SSW, SACS					EMERG. LIGHTS:	
II	Nuc. Boiler Inst, RHR, RCIC, Unit Coolers						
II	Panels and Racks 10C207A and B					Yes	
	10C208A and B						
	10C021						
	10C031					CONSTRUCTION:	FIRE RATING:
II	250Vdc MCC (RCIC),10D261					<u>Walls:</u>	
						North	3 hour
						East	Unrated
						South	Unrated
						West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:						<u>Floor:</u>	Unrated (basemat)
None. Redundant Division I equipment separated by 3-hour barrier will be used for safe shutdown. Redundant equipment are not located in rooms adjacent to unrated 4108 walls. 3 hour wall contains pressure-tight unrated door but does not separate redundant divisions; therefore, no deviation exists.						<u>Ceiling:</u>	3 hour
						<u>Doors and Hatches:</u>	Unrated, except for stairwell door
						<u>Reference Drawings:</u>	
						Elec. Drawings - E-1631-1	
						Fire Drawings - Fig. 9.5-1 and 9.5-9	
						COMBUSTIBLES:	EQUIV. FIRE
						<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
						a. Cable insulation	6,973 lbs 27.7
						b. Lube oil	0
						c. Other (Floor Coating)	8.4
						d. Transient	0
DEVIATION REQUEST: None						AREA = 945 ft ²	TOTAL 36.1 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: RHR Pump and Heat Exchanger Room

Fire Area: RB2, Reactor Building Division II

ROOM NO.	4109/4208	BLDG.	Reactor	ELEV.	54/77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH						Photoelectric	H ₂ O hose 1AHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:						
DIVISION							Portable ext.
II			RHR Pump BP202			EMERG. LIGHTS:	
II			RHR Heat Exchanger BE205				
II			RHR Unit Coolers BVH210 and FVH210		Yes		
II			Cable tray and conduit for SSW, SACS, RCIC, RHR, CS, ADS, RPV Inst.				
I			HPCI auto transfer from CST logic.			CONSTRUCTION:	FIRE RATING:
						<u>Walls:</u>	
						North	3 hour
						East	3 hour (except blowout
						South	Unrated panel)
						West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:						<u>Floor:</u>	Unrated (basemat)
None. Redundant Division I equipment, cable and inst. will be used for safe shutdown. Rooms 4109 and 4208 are separated by grating at Elevation 77 and are treated as one fire area.						<u>Ceiling:</u>	Unrated (E1. 102)
Redundant equipment are not located in rooms adjacent to 4109 or 4208 unrated walls except 4102. Unrated steel blowout panel is provided to torus area. See the analysis of room 4102.						<u>Doors and Hatches:</u>	Unrated*
						* PT doors	
						<u>Reference Drawings:</u>	
						Elec. Drawings - E-1631-1	
						Fire Drawings - Fig. 9.5-1, 9.5-2 and 9.5-9	
						COMBUSTIBLES:	EQUIV. FIRE
						<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
						a. Cable insulation	4,182 lbs 14.4
						b. Lube oil	39 gal 4
						c. Other (Floor Coating)	8.4
						d. Transient (lube oil)	39 gal 4
DEVIATION REQUEST: Yes, Blowout panels not UL rated						AREA = 1089 ft ²	TOTAL 30.8 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: RCIC Pump and Turbine Room Fire Area: RB2, Reactor Building Division II

ROOM NO. 4110	BLDG. Reactor	ELEV. 54 to 75 ft	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1AHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguishers
II	1. RCIC pump 10P 203, turbine 10S 212			
II	2. RCIC oil cooler		EMERG. LIGHTS:	
II	3. RCIC gland steam cond 10E 209			
II	4. RCIC gland seal cond vac pump 10P 219		Yes	
II	5. RCIC vacuum tank cond pump 10P 220			
II	6. ECCS jockey pump 1BP 228			
	7. Valves		CONSTRUCTION:	FIRE RATING:
II	a. HV F010, HV F012 (RCIC CH B)		Walls:	
II	HV F045, HV F046 (RCIC CH B)		North	3 hour
II	b. HC F025, HV F004 (RCIC CH D)		East	3 hour
	8. Cable:		South	(1) 3 hour
II	a. Control cable (RCIC CH D)		West	Unrated (exterior wall)
II	b. Control and Power Cable (RCIC CH B)			
II	9. Instrumentation (RCIC CH B)			
II	10. Unit coolers 1AVH 208, 1BVH 208			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated (basemat)
None. An exposure fire anywhere in the area would not prevent the reactor from being placed and maintained in a cold shutdown mode.			Ceiling:	(3) 3 hour
The HPCI system is a backup for the RCIC system and would be used in the event all or part of the RCIC system in the room was damaged by fire. However, in the event both the HPCI and RCIC systems were damaged by fire, manual pressurization and low pressure systems could be used for shutdown, both of which are isolated from this area. The unrated steel pressure tight door in the north wall is justified based on the requirement for flood protection and the fire severity in the area of 9 minutes. The unrated steel blowout panel in the east wall is justified based on the requirement for steam overpressure relief and the above listed fire severity. Refer to the analysis of Room 4102 also.			Doors and Hatches:	
			N. wall:	(2) unrated steel PT door (to room 4111)
			S. wall:	(1) unrated steel PT door (to room 4108)
			E. wall:	(2) unrated steel blowout panel (to ctmt)
			(1)	Does not separate redundant divisions.
			(2)	The justification for unrated stated in "Effects of fire on.." section at left.
			(3)	Structural steel not fireproofed
			Reference Drawings:	
			Elec. Drawings: E-1621	
			Fire Drawings - Fig. 9.5-1 and 9.5-9	
An analysis of beam temperatures during a fire has been conducted. The steel temperature did not exceed 1100°F. Therefore, structural steel fireproofing has not been provided.			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	1,544 lbs 6.7
			b. Lube oil	10 gal 1.3
			c. Other (Floor Coating)	8.4
			d. Transient (Lube oil)	10 gal 1.3
DEVIATION REQUEST: Unrated steel pressure tight door in north wall				
Unrated steel blowout panel in east wall				
Unrated structural steel supporting ceiling			AREA = 858 ft ²	TOTAL 17.7 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Motor Control Center Area Fire Area: RB2, Reactor Building Division II

ROOM NO. 4201	BLDG. Reactor	ELEV. 77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1HHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Heat actuated	1GHR200 Portable extinguishers
II	Channel D cable for: power feeders to MCC, SSW, SACS, Reactor Wtr Cleanup, Core Spray, RHR, Control Area Chilled Water systems		EMERG. LIGHTS: Yes	Auto preaction sprinkler system (partial coverage)
II	Channel B cable for: SSW, SACS, RCIC, RHR, and CS systems		CONSTRUCTION:	FIRE RATING:
	ADS/SRVs AB-PSV-F013P SN-PSV-F013A, B, C, D, and E		Walls:	
			North	3 hour
			East	3 hour
			South	unrated
			West	3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	unrated
None. Redundant Division I equipment will be used for safe shutdown. See Room 4102 for discussion of the torus compartment HVAC penetration.			Ceiling:	3 hour (1)
The north wall contains a hollow metal core door and two HVAC ducts without fire dampers. The walls other penetrations are sealed for a 3-hour fire barrier. Since there is more than 120 feet between safe shutdown divisions plus 30 feet of space with negligible combustibles upgrading the door and HVAC is not needed to assure at least one safe shutdown division is free of fire damage.			Doors and Hatches:	unrated
The beams above 4201 are not required to support the 3-hour fire barrier, therefore, no fireproofing is provided. In addition, an automatic sprinkler system is installed in the area of high cable connection.			PT door between 4201 and 4202 (same division)	
			North wall contains door and HVAC which is unrated	
			West wall contains HVAC duct with PT dampers, no fire damper. (1) Structural steel not fireproofed.	
			Reference Drawings:	
			Elec. Drawings - E-1522, E-1532	
			Fire Drawings - Fig. 9.5-2 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	13,506 lbs 34.0
			b. Lube oil	0
			c. Other (Floor Coating)	6.08
			d. Transient	0
DEVIATION REQUEST: Wall penetrations			AREA = 1489 ft ²	TOTAL 40.08 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRD Pumps Area

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4202	BLDG. Reactor	ELEV. 77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1HHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:			
DIVISION				Portable extinguishers
II	Cable tray and conduit for SSW, SACS, RCIC Reactor Water Cleanup, CS, RHR, Main Steam, ECCS Room Unit Coolers, RCIC testable logic		EMERG. LIGHTS:	
			Yes	
	Division II control panels, 10C266, RHR; 10C026. Reactor level and pressure		CONSTRUCTION:	FIRE RATING:
			<u>Walls:</u>	
			North	3 hour (torus room)
			East	2 hour (stairwell only)
			South	unrated
			West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			<u>Floor:</u>	Unrated
None. Redundant Division I equipment will be used for safe shut-down. There are no redundant safe shutdown equipment or cable in rooms adjacent to 4202 unrated walls, floor or ceiling.			<u>Ceiling:</u>	Unrated
			<u>Doors and Hatches:</u>	Unrated
			Pressure tight doors	
			<u>Reference Drawings:</u>	
			Elec. Drawings - E-1532	
			Fire Drawings - Fig. 9.5-2 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
			a. Cable insulation	12,410 lbs 35.3
			b. Lube oil	3 gal 0.3
			c. Other (Floor Coating)	6.08
			d. Transient (lube oil)	3 gal 0.3
			e. Plastic	4 lbs. 0.04
DEVIATION REQUEST: None			AREA = 1320 ft ²	TOTAL 42.02 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: RB2, Reactor Building Division II

ROOM NO.	4203	BLDG.	Reactor	ELEV.	77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH						Photoelectric	H ₂ O hose 1EHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:						1HHR200
DIVISION							Port. ext.
I	Conduit and cable for: BJ-LTN061A and E (HPCI auto switchover from CST to suppression pool suction). Valves AP-HV-F011 and BS-HV-F008 (HPCI test return to CST).					EMERG. LIGHTS:	
						Yes	
II	Conduit and cable for: RCIC auto suction switchover level switches, RCIC test return to CST valve, Reactor Vessel Instrumentation, RCIC steamline break detection, RHR flow. RCIC valve BD-HV-F022.					CONSTRUCTION:	FIRE RATING:
	Cable tray containing: RHR, CS, RCIC, Reactor Vessel Instrumentation, SACS, UPS power to RCIC-MCC, RSP vessel level and pressure indication.					Walls:	
						North	3 hour
						East	Unrated
						South	Unrated
II	RPV level and pressure Rack 10C027					West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:						Floor:	unrated
None. Redundant Division I equipment will be used for safe shutdown. HCPI is available, taking suction from CST (if available) or suppression pool. A fire can not cause CST return valves BJ-HV-F008 or AP-HV-F011 to open; however, it could fail close or fail as is. This is acceptable. Spurious actuation of auto transfer or CST return closure has been analyzed and will not prevent safe shutdown. There are no redundant safe shutdown equipment or cable in rooms adjacent to 4203 unrated walls, floor, or ceiling.						Ceiling:	unrated
						Doors and Hatches:	unrated
						Pressure tight doors	
						Reference Drawings:	
						Elec. Drawings - E-1562	
						Fire Drawings - Fig. 9.5-2 and 9.5-9	
						COMBUSTIBLES:	EQUIV. FIRE
						MATERIAL:	QUANTITY SEVERITY (MIN.)
						a. Cable insulation	4,371 lbs 23.8
						b. Lube oil	0
						c. Other(Floor Coating)	6.08
						d. Transient	0
DEVIATION REQUEST: None						AREA = 690 ft ²	TOTAL 29.88 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Elect. Equipment Room Fire Area: RB2, Reactor Building Division II

ROOM NO. 4205		BLDG. Reactor	ELEV. 77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH				Photoelectric	H ₂ O hose 1EHR200
SHUTDOWN DIVISION		SAFE SHUTDOWN EQUIPMENT AND CABLE:			Port. ext.
II		Division II, channel B cable tray and conduit for: SACS valve, RCIC MCC UPS, Reactor Vessel level and pressure for MCR and RSP, RHR, RCIC, CS, RHR unit coolers. Division II, channel D, RCIC turbine exhaust leak detection.		EMERG. LIGHTS:	
				Yes	
				CONSTRUCTION:	FIRE RATING:
				Walls:	
				North	3 hour (torus room)
				East	Unrated
				South	Unrated
				West	Unrated
				Floor:	Unrated
				Ceiling:	Unrated
				Doors and Hatches:	Unrated
				Pressure tight doors	
				Reference Drawings:	
				Elec. Drawings - E-1592, E-1632	
				Fire Drawings - Fig. 9.5-2 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	6,978 lbs 19.0
				b. Lube oil	0
				c. Other (Floor Coating)	6.08
				d. Transient	0
				AREA = 1375 ft ²	TOTAL 25.08 min.
		DEVIATION REQUEST: Yes, Non-rated door			

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4206	BLDG. Reactor	ELEV. 77 to 87	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1EHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			
	None		EMERG. LIGHTS:	
			No	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
	None		Ceiling:	Unrated
			Doors and Hatches:	Unrated
			PT door to 4207 open to 4208	
			Reference Drawings:	
			Elec. Drawings - E-1632	
			Fire Drawings - Fig. 9.5-2	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST:	None		AREA = 28 ft ²	TOTAL 0

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Passageway

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4207	BLDG. Reactor	ELEV. 77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1EHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			
I	Conduit for HPCI test return to CST valves.		EMERG. LIGHTS:	
II	Conduit for RCIC turbine exhaust leak detection		Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	See fire drawings
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. Division I equipment will be used for safe shutdown.			Ceiling:	Unrated
The PT door is a 3-hour door modified for the leak tightness and not qualified by U.L. Because of the large distance between redundant divisions, low in situ combustibility of 4209 and 4205, upgrading HVAC to 3-hour fire barrier is not needed to assure at least one shutdown division is free of fire damage.			Doors and Hatches:	Unrated, except for stairwell door
A fire cannot cause the CST return valves BS-HV-F008 or AP-HV-F011 to open, however, it could cause a fail closed or fail as is. This is acceptable. Remote manual switchover from CST to suppression pool suction is used not the auto switchover circuits. Spurious actuation of auto transfer or CST return closure has been analyzed and will not prevent safe shutdown.			North door is pressure tight.	
			North wall has two HVAC ducts penetrating wall without fire dampers. See justification at left	
			Reference Drawings:	
			Elec. Drawings - E-1632	
			Fire Drawings - Fig. 9.5-2 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	3,258 lbs 64.3
			b. Lube oil	
			c. Other (Floor Coating)	6.08
			d. Transient	
DEVIATION REQUEST: Yes			AREA = 190 ft ²	TOTAL 70.38 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Motor Control Center Area		FIRE AREA: RB2, Reactor Building Division II	
ROOM NO.	4303	BLDG.	Reactor
		ELEV.	102
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		
II	Channel B MCC, 10B222		
II	Channel B conduit and cable tray containing: MCC power, RCIC-MCC power, Recirc Pump Trip, RHR, Reactor Vessel Instrumentation, CS, Relief valves PSV-F013 (14 total), Primary Containment Instrument Gas, and RCIC Auto Suction Switchover level switches.		
		FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE
		Photoelectric	H ₂ O hose 12HR200
			Portable extinguishers
		EMERG. LIGHTS	
		Yes	
		CONSTRUCTION:	FIRE RATING
		Walls:	
		North	3 hour / 2 hour / unrated
		East	3 hour
		South	unrated
		West	unrated
		Floor:	unrated
		Ceiling:	unrated
		Doors And Hatches:	unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Redundant Division I equipment will be used for safe shutdown.		Pressure tight door in West wall	
		Pressure tight equip. access panel to 4323	
		Reference Drawings	
		Elec. Drawings	E-1533, E-1563, E-1593
		Fire Drawings	Fig. 9.5-3 and 9.5-9
		COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN)
		MATERIAL:	QUANTITY
		a. Cable Insulation	32,293 lbs 52.5
		b. Lube Oil	0
		c. Other (Floor Coating)	5.25
		d. Transient	0
		e. Plastic	4 lbs 0.03
DEVIATION REQUEST: None		AREA = 2304.5ft ²	TOTAL 57.78 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4304	BLDG. Reactor	ELEV. 102 to 112	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1NHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:			
DIVISION				Portable extinguishers
	None		EMERG. LIGHTS:	
			No	
			CONSTRUCTION:	FIRE RATING:
			<u>Walls:</u>	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			<u>Floor:</u>	Unrated
None.			<u>Ceiling:</u>	Unrated
			<u>Doors and Hatches:</u>	Unrated
			Pressure tight doors	
			<u>Reference Drawings:</u>	
			Elec. Drawings -	E-1593
			Fire Drawings - Fig. 9.5-3 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 49 ft ²	TOTAL 0

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Personnel Airlock

Fire Area: RB2, Reactor Building Division II

ROOM NO.	4305	BLDG.	Reactor	ELEV.	102 to 112	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH						None	H ₂ O hose 1NHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:						
DIVISION							Portable extinguishers
			None			EMERG. LIGHTS:	
						No	
						CONSTRUCTION:	FIRE RATING:
						Walls:	Unrated
						North	
						East	
						South	
						West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:					Floor:	Unrated
			None			Ceiling:	Unrated
						Doors and Hatches:	Unrated
						Pressure tight doors	
						Reference Drawings:	
						Elec. Drawings - E-1593	
						Fire Drawings - Fig. 9.5-3 and 9.5-9	
						COMBUSTIBLES:	EQUIV. FIRE
						MATERIAL:	QUANTITY SEVERITY (MIN.)
						a. Cable insulation	0
						b. Lube oil	0
						c. Other	0
						d. Transient	0
	DEVIATION REQUEST: None					AREA = 49 ft ²	TOTAL 0

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: SACS Heat Exchanger and Pump Room Fire Area: RB2, R.B. Division II

ROOM NO.	BLDG.	Reactor	ELEV.	102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH					Photoelectric	H ₂ O hose 1JHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					Portable extinguishers
II	SACS Hx	1B1E210, 1B2E201				
	SACS pump	1BP210, 1DP210			EMERG. LIGHTS:	
	SACS Control Panels	1BC201, 1DC201				
	SACS Valves	HV2491B, HV2494B, HV2371, HV2355B, HV2496B, HV2496D and HV2522B, HV2522D			Yes	
	Cable for SSW, SACS, RHR, UPS to SACS panels, Chilled Wtr to SACS pump unit coolers, Channel C and D Unit Coolers 1CVH214, 1DVH214				CONSTRUCTION:	FIRE RATING:
I	Channel C, cable for: SACS pump room unit cooler BVH214 and SACS flow transmitter FT-2544C				Walls:	
	Cable for Channel A SACS flow transmitter FT-2544A				North	3 hour
					East	unrated
					South	unrated (exterior)
					West	unrated (exterior)
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:					Floor:	3 hour/unrated
A postulated fire in room 4307 can damage both SACS room coolers GR-BVH214 and GR-DVH214 as they are located in the same room. A fire induced hot short in a control cable associated with the SACS room cooler GR-BVH214 low air flow switch could cause tripping of the credited Division I chilled water pump GJ-AP400 and prevent restart of the AP400 pump. Failure of GJ-AP400 and the resulting loss of cooling to SACS and switchgear room coolers, and control room HVAC. In order to clear the hot short from the starting circuit if Division I chilled water pump GJ-AP400 (during fire in RB2), a manual action is required to manually open breaker 10B232-154 (for SACS room cooler GR-BVH214) located in the Reactor Building Elevation 102, Room 4310, Fire Area RB1 and to restart AP400 manually from the control room as documented in operations procedure HC.OP-AB.FIRE-0001(Q). All power, control and instrumentation cabling has coordinated protective devices to protect the redundant division power source. The unrated pressure tight door and access panel to Room 4309 are required for flood protection. The door and panel are of substantial design, are constructed of non-combustible material except for the seal, and the fire loading in the adjacent Room is low (16 minutes). There is more than 20-feet between 4309/4307 wall with negligible in-situ combustibles.					Ceiling:	unrated
There are no redundant equipment or cabling in rooms adjacent to unrated walls.					Doors and Hatches:	unrated
					Pressure tight doors and equipment access panel to areas 4309, 4323 and stairwell	
					Unrated hatches in ceiling	
DEVIATION REQUEST:					Reference Drawings:	
1. unrated pressure tight door to zone 4309					Electrical Drawings - E-1623, E-1633, E-1593	
2. unrated pressure tight acces panel to zone 4309					Fire Drawings - Figures 9.5-3 and 9.5-9	
					COMBUSTIBLES:	EQUIV. FIRE
					MATERIAL:	QUANTITY SEVERITY (MIN.)
					a. Cable Insulation	9,584 lbs 7.9
					b. Lube Oil	4 gal 0.1
					c. Other (Floor Coating)	5.25
					d. Transient (lube oil)	4 gal 0.1
					AREA = 4524 ft ²	TOTAL 13.35 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor Fire Area: RB1, Reactor Building Division I & RB2, Reactor Building Division II

ROOM NO. 4315		BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Photoelectric	H ₂ O hose 1AHR201, 1MRH200 Portable extinguishers
II	Channel D SACS control cable for valves to the primary containment instrument gas compressor coolers. Channel B control cable for recirc. pump trip control power.			EMERG. LIGHTS: Yes	
I	RPS Channel Y Rod Scram Circuits			CONSTRUCTION:	FIRE RATING:
				Walls:	
				North	open
				East	3 hour
				South	Open
				West	3 hour (steam tunnel)
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	3 hour
None. The equipment and cable in this area is not required for safe shutdown. However, this area is connected to rooms 4331 and 4317, north and south respectively, without barriers. There is greater than 60 feet with negligible in-situ combustibles and without auto suppression in this area. There is also a low ceiling which drops 10-feet from the adjacent rooms because of the main steam tunnel overhead. This creates a heat trap preventing hot gas in one area from affecting the redundant divisions. Because of the large distance without combustibles and heat trap in this area, 4315 should be considered an affective fire stop between primarily Division I in rooms to the north and Division II in rooms to the south.				Ceiling:	3 hour
				Doors and Hatches:	
				Corridor connects 4331 north and 4317 south without doors.	
				Reference Drawings:	
				Elec. Drawings - E-1523	
				Fire Drawings - Fig. 9.5-3 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	0
				b. Lube oil	0
				c. Other (Floor Coating)	7.58
				d. Transient	0
DEVIATION REQUEST: Automatic suppression system				AREA = 302 ft ²	TOTAL 7.58
Yes, Lack of 3 hr ceiling					

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRD Master Control Area Fire Area: RB2, R.B. Division II

ROOM NO. 4317	BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1MHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguishers
II	Channel D cable for: SACS valves to primary containment inst. gas compressor RHR valves for LPCI injection, shutdown cooling return MSRV ADS/SRVs AB-PSV-F013P SN-PSV-F013A, B, C, D, and E RWCU iso valve.		EMERG. LIGHTS: Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls: North East South West	unrated, except for 3 hour North wall adjacent to steam tunnel
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	3 hour
None. Redundant Division I equipment is separated by 4315 and will be used for safe shutdown.			Ceiling:	unrated
Zone 4315 has greater than 60 feet of clear space with negligible in situ combustibles.			Doors and Hatches:	open 4317 north and to 4320 west
			Reference Drawings:	
			Electrical Drawings -	E-1533, E-1563
			Fire Drawings -	Figures 9.5-3 and 9.5-9
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable Insulation	11,885 lbs 38.1
			b. Lube Oil	
			c. Other-Hydraulic Fluid	5 gal 0.47
			(Floor Coating)	7.58
			d. Transient	
DEVIATION REQUEST: Automatic suppression system			AREA = 1170 ft ²	TOTAL 46.15 min.
Yes, Lack of 3 hr ceiling				

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Neutron Monitoring System Area Fire Area: RB2, Reactor Building Division II

ROOM NO. 4318		BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH				Photoelectric	H ₂ O hose 1MHR200
SHUTDOWN		SAFE SHUTDOWN EQUIPMENT AND CABLE:			
DIVISION					Portable extinguishers
II		Channel D cable for SACS valves, RCIC, RHR, and Main Steam Relief valves AB-PSV-F013P PSV-F013A, B, C, D and E		EMERG. LIGHTS:	
				Yes	
				CONSTRUCTION:	FIRE RATING:
				Walls:	Unrated
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	3 hour
None. Redundant Division I equipment will be used for safe shut-down.				Ceiling:	Unrated
There are no redundant safe shutdown equipment or cable in rooms adjacent to 4318 unrated walls.				Doors and Hatches:	Unrated
				Reference Drawings:	
				Elec. Drawings - E-1533, E-1523	
				Fire Drawings - Fig. 9.5-3 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	4,965 lbs 37.2
				b. Lube oil	0
				c. Other	0
				d. Transient	0
DEVIATION REQUEST: Yes, Lack of 3 hr ceiling				AREA = 500 ft ²	TOTAL 37 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRD Hydraulic Control Units Area Fire Area: RB2, Reactor Building Division II

ROOM NO. 4320		BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: Channel B cable tray for: SACS, RCIC, Core Spray, RHR, SRVs (all 14), and Primary Containment Inst. Gas. Channel D conduit for Contain Atmos Control, RCIC leak detection, RHR valves			Photoelectric	H ₂ O hose 1MHR200
SHUTDOWN DIVISION					Portable extinguishers
II				EMERG. LIGHTS:	
II				Yes	
I				CONSTRUCTION:	FIRE RATING:
				<u>Walls:</u>	
				North	3 hour
				East	Unrated*
				South	Unrated
				West	Unrated*
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				<u>Floor:</u>	3 hour
None. Redundant Division I equipment will be used for safe shutdown. Redundant releif valve (Channel D) has approximately 78 feet separation with negligible intervening combustibles. In the unlikely event that both channels of SRVs are lost, the HPCI steam system is still available, and the SRVs are not required.				<u>Ceiling:</u>	Unrated
				<u>Doors and Hatches:</u>	unrated
				Presssuretight doors and hatches; *4320 open to 4322 and 4317 without door	
				<u>Reference Drawings:</u>	
				Elec. Drawings - E-1563	
				Fire Drawings - Fig. 9.5-3 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
				a. Cable insulation	3,630 lbs 11.1
				b. Lube oil	
				c. Other (Floor Coating)	7.58
				d. Transient	
DEVIATION REQUEST: Automatic suppression system					
Yes, Lack of 3 hr ceiling				AREA = 1225 ft ²	TOTAL 18.68 min.

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Personnel and Equipment Access Area Fire Area: RB2, R.B. Division II

ROOM NO. 4322		BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH				Photoelectric	H ₂ O hose 1NHR200
SHUTDOWN DIVISION		SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguishers
II		Channel B Tray for: SACS, RCIC, Core Spray, RHR, Safety Relief Valves (all). Primary Containment Instrument Gas.		EMERG. LIGHTS:	
				Yes	
I		Channel D conduit for Containment Atmosphere Control.		CONSTRUCTION:	FIRE RATING:
				Walls:	
				North	3 hour
				East	unrated
				South	unrated
				West	unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	3 hour
None. Redundant Division I equipment will be used for safe shutdown. Separation is by 3 hour fire barrier to the north and greater than 280 feet of separation through rooms 4319, 4317, 4315, 4328, and 4326.				Ceiling:	unrated
The Division I conduit/cable in this area are not required for safe shutdown. Spurious actuation has been considered and will not prevent safe shutdown.				Doors and Hatches:	unrated
				Doors and Hatches are pressure tight	
				Reference Drawings:	
				Electrical Drawings - E-1593, E-1563, and E-1583	
				Fire Drawings - Figures 9.5-3 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable Insulation	6,266 lbs 16.90
				b. Lube Oil	0
				c. Paper	25 lbs .11
				d. Plastic (Computer)	50 lbs .54
				e. Floor Coating	7.58
				f. Plastic (blanket)	24 lbs 0.18
				g. Transient	0
DEVIATION REQUEST: Automatic Suppression System				AREA = 1,390 ft ²	TOTAL 25.31 min.
Yes, Lack of 3 hr ceiling					

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Equipment Airlock

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4323	BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1NHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:			1PHP200
DIVISION				Portable extinguishers
	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	3 hour
			East	3 hour/unrated
			South	Unrated
			West	3 hour/unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	3 hour
None. This area is normally empty during operation. The assumption of new fuel wood crates is a bounding and temporary condition.			Ceiling:	Unrated
			Doors and Hatches:	Unrated
			Pressure-tight doors	
			hatches below and above	
			unrated requirement access panel	
			no HVAC fire dampers.	
			Reference Drawings:	
			Elec. Drawings - E-1593, E-1583, and E-1573	
			Fire Drawings - Figures 9.5-3 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	
			b. Lube oil	360 gal 14.8
			c. Other (new fuel wood crates)	5,500 lbs 12.2
			d. Ops locker	5.04
			e. Transient	
DEVIATION REQUEST: Yes, Non-rated access panel and			AREA = 2,700 ft ²	TOTAL 32.04 min.
Lack of 3 hr ceiling				

TABLE 9A-9
FIRE HAZARD ANALYSIS TABULATION

ROOM: Personnel Airlock

Fire Area: RB2, Reactor Building Division II

ROOM NO. 4324	BLDG. Reactor	ELEV. 102 to 112	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1PHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: Yes	Portable extinguishers
			CONSTRUCTION:	FIRE RATING:
			Walls: North East South West	unrated, except for 2-hour stairwell enclosure
			Floor:	3 hour
			Ceiling:	Unrated
			Doors and Hatches:	Unrated
			Doors are pressuretight.	
			Reference Drawings:	
			Elec. Drawings - E-1573	
			Fire Drawings - Figures 9.5-3	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
			AREA = 49 ft ²	TOTAL 0
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				
DEVIATION REQUEST: Yes, Lack of 3 hr ceiling				

TABLE 9A-10

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: RB3, Reactor Building Torus Room

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. The discussion on effects of fire in room 4102 sums up the effects of fire for the entire area.

Total BTU Combustibles: $53.017 \times 10E6$

Total Floor Area, ft^2 : 14,792

Average BTU/ ft^2 : 3,584

Average Equivalent Fire Severity: 2.69 min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Partial

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: Torus Compartment		Fire Area: RB3, Reactor Building Torus Room		
ROOM NO. 4102	BLDG. Reactor	ELEV. 54 to 101	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: I and II Valves for HPCI(I), RHR, CS, RCIC(I) I and II Cable Tray and Conduit for above valves: RHR, CS, HPCI(I), RCIC(II), Instrumentation and Control; and Suppression Pool temperature monitoring II RHR shutdown cooling valves HV-F015A&B (return) and HV-F008 (Suction)		Heat Actuated (in cable tray only)	Four H ₂ O hose reels 2
SHUTDOWN DIVISION			EMERG. LIGHTS:	
I and II			Yes	
I and II				
II			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hour
			North	
			East	
			South	
			West	
			Floor:	unrated (basemat)
			Ceiling:	unrated
			Doors and Hatches: unrated - The ceiling is open to pipe chases on el 102. The access doors are 3 hour pressure tight without UL label. The HVAC duct has 2 FT dampers without fire damper. Blowout panels are discussed in EFFECT EFFECTS OF FIRE.	
			Reference Drawings: Electrical Drawings - E-1551, E-1512, E-1541, E-1542, E-1571, E-1572, E-1521, E-1552, E-1581, and E-1582-1 Fire Drawings - Figures 9.5-1, 9.5-2 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable Insulation	9,548 lbs 3.02
			b. Lube Oil	
			c. Other Hydraulic Fluid	19 gal 0.19
			Plastic blanket	39 lbs 0.04
			d. Transient	0
			AREA = 11,860 ft ²	
			(Average floor to ceiling) TOTAL	3.25
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Cable trays are located approximately in the NE, SE, and NW quadrants of this area (refer to electrical drawings). There are large spaces without in-situ combustibles between redundant divisions in the north and south sections. Analyzing the Division II conduit in the predominantly Division I northern shutdown using Division I. However, loss of RHR valves HV-F008 will cause loss of RHR shutdown cooling mode. The valve can be opened by hand when needed, or the alternate shutdown mode, utilizing Core Spray and Main Steam Relief valves, can be used. There are four blowout panels on the west side of 4102. A fire in 4109 (RHB"B"), 4113 (RHR"A"), 4111 (HPCI) or 4110 (RCIC) or an exposure fire in the torus area adjacent to the blowout panels has been analyzed. The fire will not jeopardize more than one safe shutdown division. A transient fire of approximately 22-ft diameter could possibly render HPCI and RCIC inoperable. However, if this were to occur, Channel B & D SRVs and Division I & II Core Spray are more than 120-ft away from the HPCI and the RCIC blowout panels and, in conjunction with Division I or II RHR suppression pool cooling, can be used to achieve cold shutdown. There are negligible in-situ combustible between the HPCI and the RCIC conduit.				
DEVIATION REQUEST: Automatic suppression system				

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

Torus Compartment
Room 4102
Effects of Fires (Continued)

alternate shutdown path using SRV's and CS and suppression pool cooling may be required. Loss of one or more of the TEs in the suppression pool temperature monitoring system will not be detrimental to the average of the remaining TEs. The temperature averaging program can eliminate spurious temperature readings outside a norm. The two systems collect the TE cable in conduit and exit the torus compartment in four locations approximately 90 degrees apart.

Therefore, an exposure fire anywhere in this area will have no affect on safe shutdown or radioactive release.

The torus compartment floor area is approximately 17,423 ft²; however, for conservatism, the fire severity is based on an average area of vol/height = 11,860 ft². The in-situ combustibles (tray cable insulation) are separated by division and their pounds of combustibles and linear feet of 24-inch tray are as follows: "A" channel North, 1,190 lbs, North, 1,955 lbs 46-ft; "D" channel East, 1,275 lbs, 30-ft.

The ceiling slab above the torus compartment is sealed and rated as a 3-hour fire barrier, however, because of the low in-situ combustible loading, the structural steel is not fireproofed.

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: RB3, R.B. Torus Room (South)

ROOM NO. 4204	BLDG. Reactor	ELEV. 77 to 87	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1EHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Port. ext.
	None		EMERG. LIGHTS:	
			No	
			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hour
			North	
			East	
			South	
			West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour
	None		Ceiling:	3 hour
			Doors and Hatches:	
			Pressure tight door to 4205	
			Open to torus area 4102	
			Reference Drawings:	
			Elec. Drawings - E-1592	
			Fire Drawings - Fig. 9.5-2	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
			e. Plastic	4 lbs 1.03
			AREA = 58	TOTAL 1.03
	DEVIATION REQUEST: Yes, Non-rated door			

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Revision 16
May 15, 2008

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: RB3, R.B. Torus Room (north)

ROOM NO. 4217	BLDG. Reactor	ELEV. 77 to 87	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1GHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		EMERG. LIGHTS:	
	None		Yes	
		CONSTRUCTION:	FIRE RATING:	
		Walls:	3 hour	
		North		
		East		
		South		
		West		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour	
		Ceiling:	3 hour	
		Doors and Hatches:		
		Pressure tight door to 4218		
		Open to torus area 4102		
		Reference Drawings:		
		Elec. Drawings - E-1512		
		Fire Drawings - Fig. 9.5-2		
		COMBUSTIBLES:	EQUIV. FIRE	
		MATERIAL:	QUANTITY	SEVERITY (MIN.)
		a. Cable insulation		0
		b. Lube oil		0
		c. Other		0
		d. Transient		0
DEVIATION REQUEST: Yes, non-rated doors		AREA = NS	TOTAL	0

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: RCIC Pipe Chase

Fire Area: RB3, R.B. Torus Room (south)

ROOM NO.	4319	BLDG.	Reactor	ELEV.	99'-9"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH					None	H ₂ O hose 1MHR200	
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:						
II	RCIC valve HV-F008 and leak detection instrumentation				EMERG. LIGHTS:		
					Yes		
					CONSTRUCTION:	FIRE RATING:	
					Walls:	3 hour*	
					North		
					East		
					South		
					West		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:					Floor:	Open (grating)	
None. Redundant Division I equipment will be used for safe shutdown.					Ceiling:	Unrated	
Floor is open to Torus area, 4102, below.					Doors and Hatches:	Unrated pressure tight door	
Pressure tight door does not separate redundant divisions.					*HVAC contains double pressure tight isolation dampers without fire damper		
There are no safe shutdown cabling or equipment located in rooms adjacent to 4319 unrated walls or ceiling.					Reference Drawings:		
					Elec. Drawings - E-1563		
					Fire Drawings - Fig. 9.5-3 and 9.5-9		
					COMBUSTIBLES:	EQUIV. FIRE	
					MATERIAL:	QUANTITY	SEVERITY (MIN.)
					a. Cable insulation		0
					b. Lube oil		0
					c. Other		0
					d. Transient		0
DEVIATION REQUEST: Yes, detection and lack of 3 hour ceiling					AREA = NS	TOTAL	0

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Revision 14
July 26, 2005

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: Pipe Chase		Fire Area: RB3, Reactor Building Torus Room (south)	
ROOM NO. 4321	BLDG. Reactor	ELEV. 99'-9"	FIRE DETECTION TYPE:
MECH			None
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE SUPPRESSION TYPE:
II	Valves: RHR, BC-HV-F015B, BC-HV-F017D, BC-HV-F017B; Core Spray BE-HV-F005B and RACS, ED-HV-2553, ED-HV-2555. Channel B and D conduit for above valves.		H ₂ O hose 1NHR200
		EMERG. LIGHTS:	
		Yes	
		CONSTRUCTION:	FIRE RATING:
		Walls:	3 hour*
		North	
		East	
		South	
		West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	open (grating)
None. Redundant Division I equipment will be used for safe shutdown. Floor is open to torus area in 4102. There are no redundant safe shutdown equipment in rooms adjacent to 4321 unrated walls or ceiling.		Ceiling:	unrated
		Doors and Hatches:	unrated
		Door is pressure tight	
		*HVAC duct contains double pressure tight isolation dampers without fire damper	
		Reference Drawings:	
		Electrical Drawings - E-1563	
		Fire Drawings - Figures 9.5-3 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable Insulation	0
		b. Lube Oil	0
		c. Other - Hydraulic Fluid	4 gal 0.84
		d. Transient	0
		AREA = NS	TOTAL 0.84
DEVIATION REQUEST: Automatic suppression system			
Yes, Lack of 3 hr ceiling			

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: HPCI Pipe Chase

Fire Area: RB3, Reactor Building Torus Room (north)

ROOM NO.	4327	BLDG.	Reactor	ELEV.	102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH						None	H ₂ O hose 1FHR200, 1AHR210
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					EMERG. LIGHTS:	
I	Division I Valves: HPCI, FD-HV-F003, Division I Conduit for: HPCI valve above, RHR, Core Spray, leak detection, and SACS.					Yes	
						CONSTRUCTION:	FIRE RATING:
						Walls:	3 hour*
						North	
						East	
						South	
						West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:						Floor:	open (grating)
None. Redundant Division II equipment will be used for safe shut-down. Floor is open to torus area 4102. No redundant safe shutdown cable or equipment in rooms adjacent to unrated walls or ceiling.						Ceiling:	unrated
						Doors and Hatches:	unrated
						Door is pressure tight	
						*HVAC duct contains double pressure tight isolation dampers in lieu of fire damper.	
						Reference Drawings:	
						Electrical Drawings - E-1543	
						Fire Drawings - Figures 9.5-3 and 9.5-9	
						COMBUSTIBLES:	EQUIV. FIRE
						MATERIAL:	QUANTITY SEVERITY (MIN.)
						a. Cable Insulation	0
						b. Lube Oil	0
						c. Other - Hydraulic Fluid	1 gal 1.05
						d. Transient	0
DEVIATION REQUEST: Automatic suppression system						AREA = 106 ft ²	TOTAL 1.05
Yes, Lack of 3 hr ceiling							

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: Pipe Chase

Fire Area: RB3, R.B. Torus Room (north)

ROOM NO. 4329	BLDG. Reactor	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1AHR201
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		EMERG. LIGHTS:	
I	Channel A Valves: RHR, HV-F016A, HV-F017A, HV-F021A; Core Spray, HV-F005A< HV-F004A; HPCI, HV-F006		Yes	
	Channel C Valves: RHR, HV-F017C, Primary Containment Instrumentation Gas, HV-5126A			
I	Channel A & C conduit/cable for above valves		CONSTRUCTION:	FIRE RATING:
II	Channel D Valves: RHR, HV-F088 and HV-F015A		Walls:	3 hour*
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Open (grating)
None. Redundant Division II equipment will be used for safe shutdown. The redundant RHR and Primary Containment Instrument gas isolation valves are located in 4321 pipe chase, which has more than adequate horizontal separation plus walls. RHR valve HV-F008 is required for shutdown cooling; however, since BC-HV-F009 cabling is lot located in this area, manual operation of F008 would allow shutdown cooling to be established. In addition, alternative shutdown using core spray injection and MSRV return to suppression pool can be set up in Division II from the MCR. See also room 4102.			Ceiling:	Unrated
			Doors and Hatches:	Unrated
			Pressure tight door	
			Floor is open to torus area 4102	
			*HVAC contains double pressure tight isolation dampers in lieu of fire dampers	
			Reference Drawings:	
			Elec. Drawings - E-1543	
			Fire Drawings - Figures 9.5-3 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable Insulation	0
			b. Lube Oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: Automatic Suppression System			AREA = NS	TOTAL 0
Yes, Lack of 3 hr ceiling				

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: Pipe Chase

Fire Area: RB3, Reactor Building Torus Room (south)

ROOM NO. 4402	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1YHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		EMERG. LIGHTS:	
II	Conduit for RHR valves HV-F016B and HV-F021B (Containment spray).		Yes	
		CONSTRUCTION:	FIRE RATING:	
		Walls:	unrated	
		North		
		East		
		South		
		West		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	unrated (partial grating)	
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of the containment spray valves due to a fire in this area will not prevent safe shutdown. Redundant Division I equipment would be used for safe shutdown.		Ceiling:	unrated (grating)	
		Doors and Hatches:		
		Doors - Unrated		
		Hatches - None		
		Reference Drawings:		
		Electrical Drawings - E-1554-1 and E-1564-1		
		Fire Drawings - Figures 9.5-4 and 9.5-9		
		COMBUSTIBLES:	EQUIV. FIRE	
		MATERIAL:	QUANTITY	SEVERITY (MIN.)
		a. Cable Insulation		0
		b. Lube Oil		0
		c. Other - Hydraulic Fluid	1 gal	0.13
		d. Transient		0
		AREA = NS	TOTAL	0.13
DEVIATION REQUEST: Yes, Unrated fire barrier				

TABLE 9A-10

FIRE HAZARD ANALYSIS TABULATION

ROOM: Steam Vent

Fire Area: RB3N, R.B. Torus Room (North)

ROOM NO. 4409	BLDG. Reactor	ELEV. 102 to 162	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1QHR200 Portable Extinguisher
MECH SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area.			CONSTRUCTION:	FIRE RATING:
			Walls:	All walls are unrated, except for the 2-hour rated stairwell enclosure
			North	
			East	
			South	
			West	
			Floor:	None
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1584-1	
			Fire Drawings - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	
			MATERIAL:	EQUIV. FIRE SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = NS	TOTAL 0

TABLE 9A-10
FIRE HAZARD ANALYSIS TABULATION

ROOM: Pipe Chase

Fire Area: RB3, Reactor Building Torus Room (south)

ROOM NO.	4505	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH				None	H ₂ O hose 1THR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:				Portable extinguisher
II	RWCU isolation valve HV-F004			EMERG. LIGHTS:	
				No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not affect safe shutdown.				CONSTRUCTION:	FIRE RATING:
				Walls:	Unrated
				North	
				East	
				South	
				West	
				Floor:	Unrated (grating)
				Ceiling:	Unrated
				Doors and Hatches:	
				Doors - unrated	
				Hatches - None	
				Reference Drawings:	
				Elec. Drawings - E-1555-1 and E-1565-1	
				Fire Drawings - Figures 9.5-5 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	0
				b. Lube oil	0
				c. Other (plastic blnkt) 68 lbs	1.77
				d. Transient	0
DEVIATION REQUEST: None				AREA = NS	TOTAL 1.77

TABLE 9A-11

FIRE HAZARD ANALYSIS TABULATION

ROOM: Steam Tunnel

Fire Area: RB4, R.B. Steam Tunnel

ROOM NO.	4316	BLDG.	Reactor	ELEV.	102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:				None	H ₂ O hose 1AHR201	
II	Channel Z (RPS) outboard Main Steam Isolation Valves.				EMERG. LIGHTS:		
II	Channel B RCIC return to Feedwater Valve HV-F013				Yes		
I	Channel A HPCI supply to feedwater valve BJ-HV-8278				CONSTRUCTION:	FIRE RATING:	
<p>EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:</p> <p>None. Redundant Division II equipment will be used for safe shutdown. HPCI supply to feedwater is not required since the HPCI supply to core spray is adequate makeup.</p> <p>Pressure tight doors are required to protect reactor building from pressurization due to high energy line rupture in the steam tunnel.</p> <p>The unrated steel blowout panel is justified based on the requirement for steam overpressure relief, and also does not separate redundant safe shutdown divisions.</p> <p>Redundant temperature elements are installed to detect pipe break and will alarm on high temperature.</p>					Walls:	3 hour	
					North		
					East	*Unrated (ventilation barrier)	
					South		
					West		
					Floor:	3 hour	
					Ceiling:	3 hour	
					Doors and Hatches:	Unrated	
					Doors are pressure tight.		
					*Blowout panel between reactor and turbine building is not UL rated		
Reference Drawings:							
Elec. Drawings - E-1523							
Fire Drawings - Fig. 9.5-3 and 9.5-9							
COMBUSTIBLES:							
MATERIAL:					QUANTITY	EQUIV. FIRE SEVERITY (MIN.)	
a. Cable insulation						0	
b. Lube oil						0	
c. Other						0	
d. Transient						0	
AREA = NS					TOTAL	0	
DEVIATION REQUEST: Pressure tight door							

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

SUMMARY FOR FIRE AREA: RB5, Reactor Building Elev. 132 and Above

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. There are no safe shutdown equipment in fire area RB5. Division II shutdown equipment can be used, and as a minimum, the SRVs and low pressure systems can be used.

This area contains Div I and Div II Reactor Pressure and Level Instrument tubing associated with BB-PR-R623A & B and BB-LR-R623A & B. The sensing lines associated with both Division I and II Reactor Pressure (BB-PR-R623A&B) and level (BB-LR-R623A&B) instruments are routed in Fire Area RB5 Elevation 132', Room 4408. Fire Area RB5 configuration, fire protection features, combustible loading in the area, and the routing of instrument tubing, the potential for a fire event in Fire Area RB5 that would propagate and impact both division A and B of reactor water level and pressure instrumentation does not exist.

In addition, cables and instrument tubing associated with Channel C reactor water level instruments (LTN081C and PDT-N004C) are not routed in Fire Area RB5 and remain free of fire damage and available to provide diagnostic information to the plant operators during and following a postulated fire event in Fire Area RB5. Channel D reactor pressure indication (PT-7853D) remains available at the Remote Shutdown Panel (RSP).

Total BTU Combustibles: 1.9014×10^9

Total Floor Area: $45,443 \text{ ft}^2$

Average BTU/ft²: 41,841

Average Equivalent Fire Severity: 31.38 min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Partial

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Electrical Equipment Area Fire Area: RB5, Elev 132 and above

ROOM NO. 4401 BLDG. Reactor ELEV. 132		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH		Photoelectric	H ₂ O hose 1RHR200 and 1YHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Portable extinguisher
II	Channel D conduit and cable tray for SACS (LT-2508D, water for FRVS) and for RHR (PT-N094D & H)	EMERG. LIGHTS: Yes	
		CONSTRUCTION:	FIRE RATING:
		Walls: North East South West	All walls are unrated, except the 3-hour rated wall of the main steam tunnel
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.		Ceiling:	None
		Doors and Hatches:	
		Doors - Unrated Hatches - None	
		Reference Drawings:	
		Elec. Drawings - E-1524-1, 1534-1, and 1564-1	
		Fire Drawings - Figures 9.5-4 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable insulation	8,422 lb. 10.0
		b. Lube oil	3/8 gal oil <1 min.
		c. Other - Hydraulic Fluid	1 gal 0.04
		(Floor Coating)	6.15
		d. Transient	0
		AREA = 3,169 ft ²	TOTAL 17.15 min.
DEVIATION REQUEST: Yes, Lack of 3 hr floor			

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: RWCU Recirculation Pump Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4403	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1YHR200
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable Extinguisher
DIVISION	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawing - E-1564-1	
			Fire Drawing - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other (plastic blanket)	1.65
			d. Transient	0
			AREA = 114 ft ²	TOTAL 1.65
			DEVIATION REQUEST: Yes, Lack of 3 hr floor	

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: RB5, Elev 132 and above

ROOM NO. 4404	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: Channel B conduit and cable tray for SACS (LT-2508B, water for FRVS, water for fuel pool cooling) and for RHR (PT-N094B and F, containment spray valves HV-F016B and HV-F021B)		Photoelectric	H ₂ O hose 1YHR200 Portable Extinguisher
SHUTDOWN DIVISION			EMERG. LIGHTS:	
II			CONSTRUCTION:	FIRE RATING:
			Walls:	All walls are unrated, except for the 2-hour rated wall of the stairwell/elevator enclosure
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not prevent safe shutdown. In the event Division II RHR is lost due to the misoperation of valves HV-F016B and HV-R021B, Division I RHR will still be available for safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated, except for stairwell door	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1564-1 and 1594-1	
			Fire Drawing - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	5,631 lbs 21.2
			b. Lube oil	0
			c. Other (Floor Coating)	6.15
			d. Transient	0
DEVIATION REQUEST: Yes, Lack of 3 hr floor			AREA = 998 ft ²	TOTAL 27.35 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: RWCU Recirculation Pump Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4405	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1YHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable Extinguisher
II	Conduit for RHR valves HV-F016B and HV-F021B		EMERG. LIGHTS:	
			Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			CONSTRUCTION:	FIRE RATING:
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of the containment spray valves due to a fire in this area will not prevent safe shutdown. Redundant Division I equipment would be used for safe shutdown.			Walls:	Unrated
			North	
			East	
			South	
			West	
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1564-1	
			Fire Drawings - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	69 lbs 3.9
			d. Plastic blanket	0.85
			e. Transient	0
DEVIATION REQUEST: Yes, Lack of 3 hr floor			AREA = 266.5 ft ²	TOTAL 4.75 MIN.

TABLE 12

Fire Area: RB5, Elev 132 and above

6 of 42

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: RWCU Backwash Receiving Tank Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4407	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			None	H ₂ O hose 1QHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		EMERG. LIGHTS:	
	None		Yes	
		CONSTRUCTION:	FIRE RATING:	
		Walls:	Unrated	
		North		
		East		
		South		
		West		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	Unrated	
None. There is no safe shutdown equipment or cable in this area.		Ceiling:	Unrated	
		Doors and Hatches:		
		None		
		Reference Drawings:		
		Elec. Drawing - E-1554-1 and 1564-1		
		Fire Drawings - Figures 9.5-4 and 9.5-9		
		COMBUSTIBLES:	EQUIV. FIRE	
		MATERIAL:	QUANTITY	SEVERITY (MIN.)
		a. Cable insulation		0
		b. Lube oil		0
		c. Other		0
		d. Transient		0
DEVIATION REQUEST: Yes, Lack of 3 hr floor		AREA = 319 ft ²	TOTAL	0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Equipment Removal Area

Fire Area: RB5, Elev 132 and above

ROOM NO. 4408	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1QHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable Extinguisher
	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	All walls are unrated,
			East	except for the 2-hour
			South	rated wall at the
			West	stairwell enclosure
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated, except for stairwell door	
			Hatches - Unrated	
			Reference Drawings:	
			Elec. Drawings - E-1584-1 and 1594-1	
			Fire Drawings - Figures 9.5-4 and 935-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	12,432 lbs 14.2
			b. Lube oil (turbine)	.5 gal 0.02
			c. Other (Floor Coating)	6.15
			d. Transient	0
			AREA = 3,286 ft ²	TOTAL 20.37 min.
DEVIATION REQUEST:	Yes, Lack of 3 hr floor			

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: FRVS Recirculation Unit Area Fire Area: RB5, Elev 132 and above

ROOM NO. 4410 & 4411		BLDG. Reactor	ELEV. 132 & 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Photoelectric Heat actuated (in filter unit)	Preaction water spray (in charcoal filter only) H ₂ O hoses 1QHR200 and 1RHR200 Portable
I	Channel A & C conduit and cable tray for SACS (LT-2508A & C, water for FRVS, water for fuel pool cooling, water for containment instrument gas compressors) and for RHR (PT-N094 A, C, E, & G)			EMERG. LIGHTS: Yes	Extinguisher
				CONSTRUCTION:	FIRE RATING:
				Walls:	All walls are unrated, except for the 3-hour rated wall adjacent to the TSC (zone 4415)
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	Unrated
None. The Division I cable in this area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than on safe shutdown division.				Ceiling:	Unrated
				Doors and Hatches:	
				None	
				Reference Drawings:	
				Elec. Drawings - E-15114-1, 1515-1, 1524-1, 1525-1, 1544-1, 1545-1, 1554-1, 1555-1, 1574-1, and 1575-1	
				Fire Drawings - Figures 9.5-4 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	34,775 lbs 24.55
				b. Lube oil	0
				c. Other (Plastic blanket)	0.01
				d. Transient	15,000 lbs 31.40
DEVIATION REQUEST: Yes, Lack of 3 hr floor				AREA = 5,311 ft ²	TOTAL 55.96 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: CRD Control Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4410A	BLDG. Reactor	ELEV. 132 & 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		None	H ₂ O hoses 1QHR200 and 1RHR200 Portable Extinguisher
	None		EMERG. LIGHTS:	
			None	
			CONSTRUCTION:	FIRE RATING:
			Walls:	See Fire Drawings
			North	
			East	
			South	
			West	
EFFECTS OF FIRE-ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None			Ceiling:	Unrated
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Fire Drawings - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0 lbs 0
			b. Lube oil	0
			c. Other	0 lbs 0
			d. Transient	0
DEVIATION REQUEST: Yes, Lack of 3 hr floor			AREA = 317	* TOTAL 0 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Containment Instrument Gas Compressor Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4412	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1RHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable Extinguisher
II	Channel D conduit for SACS (water for containment instrument gas compressor).		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	Unrated
			East	3 hours
			South	3 hours
			West	Unrated
			Floor:	Unrated
			Ceiling:	None
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1514-1 and 1524-1	
			Fire Drawings - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	1,108 lbs 13.2
			b. Lube oil	1 gal 0.4
			c. Other	0
			d. Transient (lube oil)	1 gal 0.4
			AREA = 315 ft ²	TOTAL 14 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not affect safe shutdown. Propagation of a fire in this area to adjacent fire areas would not jeopardize more than one safe shutdown division.				
DEVIATION REQUEST: Yes, Lack of 3 hr floor				

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Containment Instrument Gas Compressor Room Fire Area: RB5 Elevation 132 and above

ROOM NO. 4413	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1RHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable Extinguisher
I	Channel C conduit for SACS (water for containment instrument gas compressor).		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	Unrated
			East	Unrated
			South	3 hour
			West	Unrated
			Floor:	Unrated
			Ceiling:	None
			Doors and Hatches:	
			Doors Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1514-1, 1515-1, 1524-1, and 1525-1	
			Fire Drawings - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable insulation	0
			b. Lube oil	1 gal 0.3
			c. Other	0
			d. Transient (lube oil)	1 gal 0.3
			AREA = 338 ft ²	TOTAL 1 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				
None. The Division I cable in the area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not affect safe shutdown. Propagation of a fire in this area to adjacent fire areas would not jeopardize more than one safe shutdown division.				
DEVIATION REQUEST: Yes, Lack of 3 hr floor				

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Electric Equipment Area

Fire Area: RB5, Elev 132 and above

ROOM NO. 4501	BLDG. Reactor	ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hoses 1BHR201 and 1THR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable Extinguisher
II	Channel D conduit for SACS (LT-2508D, water for FRVS) and for RHR (PT-N094D & H). RWCU valve HV-F004.		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	All walls are unrated, except for 3 hour walls of the personnel airlock (zone 4510)
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated, except for main steam tunnel roof portion
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E1525-1, 1535-1, and 1555-1	
			File Drawings - Figures 9.5-5 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	12,812 lbs 27.6
			b. Lube oil	0
			c. Other (Floor Coating)	4.28
			d. Transient	0
DEVIATION REQUEST: None			AREA = 1,742 ft ²	TOTAL 31.88 min.

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: RWCU Filter/Demin. Holding Pump Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4502	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1BHR201 Portable Extinguisher
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.		CONSTRUCTION:	FIRE RATING:	
		Walls: North East South West	Unrated	
		Floor:	Unrated	
		Ceiling:	Unrated	
		Doors and Hatches:		
		Doors - Unrated Hatches - None		
		Reference Drawings:		
		Elec. Drawings - E-1555-1 and 1565-1		
		Fire Drawings - Figures 9.5-5 and 9.5-9		
		COMBUSTIBLES:		
		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)
		a. Cable insulation	256 lbs	4.8
		b. Lube oil		0
		c. Other		0
		d. Transient		0
DEVIATION REQUEST: None		AREA = 200 ft ²	TOTAL	5 min.

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: RWCU Filter/Demin. Holding Pump Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4503	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1THR200 Portable Extinguisher
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1565-1	
			Fire Drawings - Figures 9.5-5 and 9.5-9	
			COMBUSTIBLES:	
			MATERIAL:	EQUIV. FIRE SEVERITY (MIN.)
			a. Cable insulation	142 lbs 2.7
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 197 ft ²	TOTAL 3 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Passageway

Fire Area: RB5, Elev 132 and above

ROOM NO. 4504	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1THR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable Extinguisher
II	Conduit and cable tray for SACS (LT-2508B, water for FRVS, water for fuel pool cooling) for RHR (PT-N094B & F) and for RWCU isolation valve HV-F004).		EMERG. LIGHTS: Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	All walls are unrated, except for the 2-hour rated walls of the stairwell/elevator enclosure
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to a fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated, except for stairwell door.	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1535-1, 1565-1, and 1595-1	
			Fire Drawings - Figures 9.5-5 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	10,119 lbs 13.94
			b. Lube oil	0
			c. Other (Floor Coating)	4.28
			(Plastic blanket)	0.01
			d. Transient	0
DEVIATION REQUEST: None			AREA = 2,731 ft ²	TOTAL 18.23 min.

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: RWCU Heat Exchanger Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4506	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1THR200
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area.			CONSTRUCTION:	FIRE RATING:
			Walls: North East South West	Unrated
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1555-1, 1565-1, 1585-1, and 1595-1 Fire Drawings - Figures 9.5-5 and 9.5-9	
DEVIATION REQUEST: None			COMBUSTIBLES:	
			MATERIAL:	EQUIV. FIRE SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
			AREA = 774 ft ²	TOTAL 0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: RB5, Elev 132 and above

ROOM NO. 4508	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1SHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguisher
	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	All walls are unrated, except for the 2-hour rated walls of the stairwell enclosure
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. There is no safe shutdown equipment or cable in this area. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			Ceiling:	
			Doors and Hatches:	
			Doors - Unrated, except for stairwell door	
			Hatches - Unrated	
			Reference Drawings:	
			Elec. Drawings - E-1585-1 and E-1595-1	
			Fire Drawings - Figures 9.5-5 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	10,581 lbs 15.26
			b. Lube oil	0
			c. Other (Floor Coating)	4.28
			d. (Plastic blanket)	0.06
			d. Transient	0
DEVIATION REQUEST: None			AREA = 2,601 ft ²	TOTAL 19.60 min.

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: Pipe Chase Fire Area: RB5, Elev 132 and above

ROOM NO. 4509 BLDG. Reactor ELEV. 145		FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1SHR200
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None	EMERG. LIGHTS: No	FIRE RATING: Unrated
		CONSTRUCTION: Walls: North East South West Floor: Unrated Ceiling: Unrated Doors and Hatches: None Reference Drawings: Elec. Drawings - E-1555-1 and 1585-1 Fire Drawings - Figures 9.5-5 and 9.5-9	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area.		COMBUSTIBLES: MATERIAL: QUANTITY EQUIV. FIRE SEVERITY (MIN.)	
DEVIATION REQUEST: None		a. Cable insulation	0
		b. Lube oil	0
		c. Other	0
		d. Transient	0
		AREA = 236.5 ft ²	TOTAL

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: Personnel Airlock Fire Area: RB5, Elev 132 and above

ROOM NO. 4510	BLDG. Reactor	ELEV. 145 to 155	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1BHR201 Portable extinguisher
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area.			CONSTRUCTION:	FIRE RATING:
			Walls: North East South West	3 hour
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1525-1 Fire Drawings - Figures 9.5-5 and 9.5-9	
			COMBUSTIBLES: MATERIAL:	EQUIV. FIRE SEVERITY (MIN.)
			QUANTITY	
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 48 ft ²	TOTAL 0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: FRVS Vent Unit Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4511	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE: Heat actuated (in filter unit)	FIRE SUPPRESSION TYPE: Preaction water spray (in charcoal filter only) H ₂ O hose 1BHR201 Portable extinguisher
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area.		CONSTRUCTION:		
		FIRE RATING:		
		Walls: North East South West		
		Floor: Unrated, except for main steam tunnel roof portion.		
		Ceiling: Unrated		
		Doors and Hatches: Doors - Unrated Hatches - None		
		Reference Drawings: Elec. Drawings - E-1525-1 Fire Drawings - Figures 9.5-5 and 9.5-9		
		COMBUSTIBLES: MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)
		a. Cable insulation		0
		b. Lube oil		0
		c. Other (charcoal)	2,250 lbs	52
		d. Transient		0
DEVIATION REQUEST: None		AREA = 480 ft ²	TOTAL	52 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: FRVS Vent Unit Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4512	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Heat actuated (in filter unit)	Preaction water spray (in charcoal filter only) H ₂ O hose 1BHR201 Portable extinguisher
	None		EMERG. LIGHTS:	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area.			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1525-1 and 1555-1	
			Fire Drawings - Figures 9.5-5 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			<u>MATERIAL:</u>	<u>QUANTITY</u>
			a. Cable insulation	0
			b. Lube oil	0
			c. Other (charcoal)	2,250 lbs 43.8
			d. Transient	0
DEVIATION REQUEST: None			AREA = 570 ft ²	TOTAL 44 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Sample Station Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4513	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1THR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguisher
	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. There is no safe shutdown equipment or cable in this area. Propagation of a fire in this area to the adjacent fire areas would not jeopardize more than one safe shutdown division.			Ceiling:	None
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Elec. Drawings - E-1525-1 and 1535-1	
			Fire Drawings - Fig. 9.5-5 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	634 lbs 7.5
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 318 ft ²	TOTAL 8 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Main Steam Tunnel HVAC Equipment Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4518	BLDG. Reactor	ELEV. 145	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1BHR201
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguisher
	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	Unrated
			East	3 hour
			South	Unrated
			West	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	3 hour
None. There is no safe shutdown equipment or cable in this area.			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - Unrated	
			Hatches - None	
			Reference Drawings:	
			Elec. Drawings - E-1525-1	
			Fire Drawings - Fig. 9.5-5 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 226 ft ²	TOTAL 0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor and Platform Area

Fire Area: RB5, Elev. 132 and above

ROOM NO. 4601, 4618		BLDG. Reactor	ELEV. 162 and 178' 6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH				Photoelectric	H ₂ O hose 1UHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:				(elev. 162 ft. and 1AHR202 (el. 178' - 6"))
I	Channel C conduit for RHR (PT-N094C and G)			EMERG. LIGHTS:	
II	Channel D conduit for RHR (PT-N094D and H) and for SACS (LT-2508D)			Yes	
	Channel B conduit for SACS (water for FRVS)			CONSTRUCTION:	FIRE RATING:
				Walls:	All walls are unrated, except for the 2-hour rated walls of the stairwell/elevator enclosure.
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	Unrated
None. The Division I and II cable in this area are not required for safe shutdown. Spurious operation of equipment due to an exposure fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.				Ceiling:	Unrated
				Doors and Hatches:	
				Doors - unrated, except for stairwell door.	
				Hatches - None	
				Reference Drawings:	
				Elec. Drawings - E-1526-1, 1536-1, 1556-1 and 1566-1	
				Fire Drawings - Fig. 9.5-6 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	3,822 lb. 13.5
				b. Lube oil	0
				c. Other (Floor Coating)	7.35
				d. Transient	0
DEVIATION REQUEST: None				AREA = 1064 ft ²	TOTAL 20.85 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Post-LOCA Recombiner

Fire Area: RB5, Elev 132 and above

ROOM NO. 4602, 4604	BLDG. Reactor	ELEV. 162	FIRE DETECTION TYPE: Photoelectric	FIRE SUPPRESSION TYPE: H ₂ O hose 1UHR200 Portable extinguisher
MECH				
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			
II	Conduit and cable tray for SACS (water for FRVS and fuel pool cooling).		EMERG. LIGHTS:	
	Conduit for SACS level transmitters LT-2508B and D		Yes	
	Conduit for RHR (PT-N094B and F)		CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to an exposure fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - none	
			Hatches - unrated	
			Reference Drawings:	
			Elec. Drawing - E-1566-1 and 1596-1	
			Fire Drawing - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	11,837 lb 17.7
			b. Lube oil	0
			c. Other (Floor Coating)	7.35
			d. Transient	0
DEVIATION REQUEST: None			AREA = 2514 ft ²	TOTAL 25.05 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Containment Prepurge Cleanup Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4603	BLDG. Reactor	ELEV. 162	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: Channel B conduit for SACS (water for fuel pool cooling) and for RHR (PT-N094 B and F)		Heat Actuated (in filter unit)35	Preaction water spray 1(in charcoal filter only)
SHUTDOWN			EMERG. LIGHTS:	H ₂ O hose 1VHR200
DIVISION			No	Portable extinguisher
II			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to an exposure fire in this area would not affect safe shutdown.			Ceiling:	Unrated
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Elec. Drawings - E-1556-1 and 1566-1	
			Fire Drawings - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other (charcoal)	750 lb. 9.4
			(plastic blanket)	23 lb. 0.27
			d. Transient	0
DEVIATION REQUEST: None			AREA = 885 ft ²	TOTAL 9.67 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Equipment Area and Corridor Fire Area: RB5, Elev. 132 and above

ROOM NO. 4605, 4608	BLDG. Reactor	ELEV. 162	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1VHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguishers
I & II	Cable for SACS (water for fuel pool cooling)		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	All walls are unrated except for the 2-hour rated walls of the stairwell enclosure.
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division I and II cable in thses rooms is not required for safe shutdown. Spurious operation of equipment due to an exposure fire in these rooms would not affect safe shutdown. Propagation of a fire in these rooms through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - unrated, except for stairwell door	
			Hatches - unrated	
			Reference Drawings:	
			Elec. Drawing -	
			Fire Drawing - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	5,953 lb. 7.3
			b. Lube oil	0
			c. Other (Floor Coating)	7.35
			d. Transient	0
DEVIATION REQUEST: None			AREA = 3041 ft ²	TOTAL 14.65 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Standby Liquid Control Area

Fire Area: RB5, Elev. 132 and above

ROOM NO. 4606	BLDG. Reactor	ELEV. 162	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1VHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguishers
	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			Doors - unrated	
			Hatches - none	
			Reference Drawings:	
			Elec. Drawings - E-1586-1 and 1596-1	
			Fire Drawings - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	3,485 lb. 14.0
			b. Lube oil	0
			c. Rubber Hose	20 lb 0.3
			d. Floor Coating	7.35
			e. Transient	0
			AREA = 931 ft ²	TOTAL 21.65 min.
DEVIATION REQUEST:	None			

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: Fuel Pool Water Suction Area

Fire Area: RB5, Elev 132 and above

ROOM NO.	4607	BLDG.	Reactor	ELEV.	162 to 173'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:				None	H ₂ O hose 1VHR200	
I	Channel A conduit for RHR (PT-N094 A and E)				EMERG. LIGHTS:		
II	Channel B conduit for SACS (water for fuel pool cooling) and for RHR (PT-N094 B and F)				No		
<p>EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:</p> <p>None. The Division I and II cable in this area is not required for safe shutdown. Spurious operation of the equipment due to a fire in this area would not affect safe shutdown.</p>					CONSTRUCTION:	FIRE RATING:	
					Walls:	Unrated	
					North		
					East		
					South		
					West		
					Floor:	Unrated	
					Ceiling:	Unrated	
					Doors and Hatches:		
					None		
Reference Drawings:							
Elec. Drawings - E-1556-1 and 1586-1							
Fire Drawings - Fig. 9.5-6 and 9.5-9							
COMBUSTIBLES:							
<u>MATERIAL:</u>					<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>	
a. Cable insulation						0	
b. Lube oil						0	
c. Other						0	
d. Transient						0	
AREA = 405.5 ft ²					TOTAL	0 min.	
DEVIATION REQUEST: None							

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: Gamma Scan Electronics Room

Fire Area: RB5, Elev 132 and above

ROOM NO.	4609	BLDG.	Reactor	ELEV.	162 to 173'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Conduit to fuel pool makeup valve HV-4648					None	H ₂ O hose 1VR200 Portable extinguishers			
						EMERG. LIGHTS:				
II						Yes				
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area. Spurious operation of HV-4648 due to a fire in this area would not affect safe shutdown.						CONSTRUCTION:	FIRE RATING:			
						Walls:	Unrated			
						North				
						East				
						South				
						West				
						Floor:	Unrated			
						Ceiling:	Unrated			
						Doors and Hatches:				
						Doors - unrated				
Hatches - none										
Reference Drawings:										
Elec. Drawings - E-1546-1 and 1576-1										
Fire Drawings - Fig. 9.5-6 and 9.5-9										
COMBUSTIBLES:										
MATERIAL:						QUANTITY	EQUIV. FIRE SEVERITY (MIN.)			
a. Cable insulation						0				
b. Lube oil						0				
c. Other						0				
d. Transient						0				
AREA = 81 ft ²						TOTAL	0 min.			
DEVIATION REQUEST: None										

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: Gamma Scan Detector Area

Fire Area: RB5, Elev 132 and above

ROOM NO.	4613	BLDG.	Reactor	ELEV.	160	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					None	H ₂ O hose 1VHR200
I	Conduit to fuel pool makeup valve HV-4647					EMERG. LIGHTS:	
II	Conduit to fuel pool makeup valve HV-4648					No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area. Spurious operation of the fuel pool makeup valves due to a fire in this area would not affect safe shutdown.						CONSTRUCTION:	FIRE RATING:
						Walls:	Unrated
						North	
						East	
						South	
						West	
						Floor:	Unrated
Ceiling:	Unrated						
Doors and Hatches:							
None							
Reference Drawings:							
Elec. Drawings - E-1546-1							
Fire Drawings - Fig. 9.5-6 and 9.5-9							
COMBUSTIBLES:							
MATERIAL:						QUANTITY	EQUIV. FIRE SEVERITY (MIN.)
a. Cable insulation							0
b. Lube oil							0
c. Other							0
d. Transient							0
AREA = 435 ft ²						TOTAL	0 min.
DEVIATION REQUEST: None							

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: FRVS Recirc. Unit Area

Fire Area: RB5, Elev. 132 and above

ROOM NO. 4614	BLDG. Reactor	ELEV. 162	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Photoelectric Heat actuated (in filter unit)	Preaction water spray (charcoal filter only) H ₂ O hose 1UHR200
I	Channel A conduit for SACS (water for FRVS) Channel C conduit for RHR (PT-N094 C and G)		EMERG. LIGHTS: Yes	Portable extinguisher
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North East South West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division I cable in this area is not required for safe shutdown. Spurious operation of equipment due to an exposure fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.			Ceiling:	Unrated
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Elec. Drawings - E-1516-1, 1526-1, 1546-1 and E-1556-1	
			Fire Drawings - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	3,842 lb. 6.1
			b. Lube oil	0
			c. Other (charcoal)	7,500 lb. 35.2
			d. Transient	0
DEVIATION REQUEST: None			AREA = 2368 ft ²	TOTAL 41 min

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: FRVS Recirc. Unit Area

Fire Area: RB5, Elev 132 and above

ROOM NO. 4615	BLDG. Reactor	ELEV. 162	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Photoelectric Heat Actuated (in filter unit)	Preaction water spray (in charcoal filter only)
				H ₂ O hose 1UHR200
II	Channel D conduit for RHR (PT-N094 D and H) and for SACS (LT-2508D)		EMERG. LIGHTS:	Portable extinguisher
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
			Floor:	Unrated
			Ceiling:	Unrated
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Elec. Drawings - E-1526-1 and 1536-1	
			Fire Drawings - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	1,271 lb. 2.0
			b. Lube oil	0
			c. Other (charcoal)	7,500 lb. 34.1
			d. Transient	0
			AREA = 2438 ft ²	TOTAL 36 min.
DEVIATION REQUEST:	None			

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: FRVS Recirc. Unit Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4616		BLDG. Reactor	ELEV. 178'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Photoelectric Heat actuated (filter unit)	Preaction water spray (in charcoal filter only)
II	Channel B conduit for SACS (water for FRVS)			H ₂ O hose 1AHR202	
				EMERG. LIGHTS:	Portable extinguisher
				No	
				CONSTRUCTION:	FIRE RATING:
				Walls:	Unrated
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to an exposure fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.				Ceiling:	Unrated
				Doors and Hatches:	
				None	
				Reference Drawings:	
				Elec. Drawings - E-1516-1, 1526-1, 1546-1 and E-1556-1	
				Fire Drawings - Fig. 9.5-6 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	7,636 lb. 10.5
				b. Lube oil	0
				c. Other (charcoal)	7,500 lb. 30.4
				d. Transient	0
DEVIATION REQUEST: None				AREA = 2740 ft ²	TOTAL 41 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: FRVS Recirc. Unit Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4617		BLDG. Reactor	ELEV. 178'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Photoelectric Heat actuated (in filter unit)	Preaction water spray (in charcoal filter only)
II	Channel B conduit for SACS (water for FRVS)			H ₂ O hose 1AHR202	
				EMERG. LIGHTS:	Portable extinguisher
				No	
				CONSTRUCTION:	FIRE RATING:
				Walls:	Unrated
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown. Spurious operation of equipment due to an exposure fire in this area would not affect safe shutdown. Propagation of a fire in this area through the unrated walls, floor, or ceiling would not jeopardize more than one safe shutdown division.				Ceiling:	Unrated
				Doors and Hatches:	
				None	
				Reference Drawings:	
				Elec. Drawings - E-1526-1 and 1536-1	
				Fire Drawings - Fig. 9.5-6 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	5,683 lb. 8.2
				b. Lube oil	0
				c. Other (charcoal)	7,500 lb. 32.2
				d. Transient	0
DEVIATION REQUEST: None				AREA = 2588 ft ²	TOTAL 40 min.

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Electrical Access Area Fire Area: RB5, Elev 132 and above

ROOM NO.	4619	BLDG.	Reactor	ELEV.	176	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:				
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None					None	None				
						EMERG. LIGHTS:					
						No					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area. This area is not readily accessible.					CONSTRUCTION:	FIRE RATING:					
					Walls:	Unrated					
					North						
					East						
					South						
					West						
					Floor:	Unrated					
					Ceiling:	Unrated					
					Doors and Hatches:						
					Doors - none						
Hatches - unrated											
Reference Drawings: Elec. Drawings - E-1566-1 Fire Drawings - Fig. 9.5-6 and 9.5-9					COMBUSTIBLES:						
					MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)				
					a. Cable insulation		0				
					b. Lube oil		0				
					c. Other		0				
					d. Transient		0				
					AREA = 0	TOTAL	0				
					DEVIATION REQUEST: None						

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: RWCU Filter/Demin. Vessel Rooms

Fire Area: RB5, Elev 132 and above

ROOM NO.	4620, 4621	BLDG.	Reactor	ELEV.	162	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None					None	H ₂ O hose 1AHR202 Portable extinguisher			
						EMERG. LIGHTS:				
						No				
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in these rooms.						CONSTRUCTION:	FIRE RATING:			
						Walls:	Unrated			
						North				
						East				
						South				
						West				
						Floor:	Unrated			
						Ceiling:	Unrated			
						Doors and Hatches:				
						Doors - none				
Hatches - unrated										
Reference Drawings:										
Elec. Drawings - E-1556-1 and 1566-1										
Fire Drawings - Fig. 9.5-6 and 9.5-9										
COMBUSTIBLES:										
MATERIAL:						QUANTITY	EQUIV. FIRE SEVERITY (MIN.)			
a. Cable insulation							0			
b. Lube oil							0			
c. Other							0			
d. Transient							0			
AREA = 144 ft ²						TOTAL	0			
DEVIATION REQUEST: None										

TABLE 9A-12

FIRE HAZARD ANALYSIS TABULATION

ROOM: Isolation Valve Room

Fire Area: RB5, Elev 132 and above

ROOM NO.	4624	BLDG.	Reactor	ELEV.	172'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None				None	None	
					EMERG. LIGHTS:		
					No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. There is no safe shutdown equipment or cable in this area.					CONSTRUCTION:		FIRE RATING:
					Walls:		Unrated
					North		
					East		
					South		
					West		
					Floor:		3-hr.
					Ceiling:		Unrated
					Doors and Hatches:		
					Doors - unrated		
Hatches - none							
					Reference Drawings:		
					Elec. Drawings -		
					Fire Drawings - Fig. 9.5-9		
					COMBUSTIBLES:		
					MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)
					a. Cable insulation		0
					b. Lube oil		0
					c. Other		0
					d. Transient		0
DEVIATION REQUEST: None					AREA = 450 ft ²	TOTAL	0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Fuel Pool Cooling Pump Room Fire Area: RB5, Elev 132 and above

ROOM NO. 4625		BLDG. Reactor	ELEV. 162 to 173'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH				Photoelectric	H ₂ O hose 1VHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:				Portable extinguisher
I	Conduit for fuel pool cooling valve HV-4689A			EMERG. LIGHTS:	
II	Conduit for fuel pool cooling valves HV-4689B and HV-4648.			Yes	
I	Fuel pool cooling pump 1AP211			CONSTRUCTION:	FIRE RATING:
				Walls:	Unrated
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	Unrated
None. The Division I and II cable and equipment in this area is not required for safe shutdown. Spurious operation of valves HV-4689A and B and HV-4648 or pump 1AP211, due to a fire in this area would not affect safe shutdown.				Ceiling:	Unrated
				Doors and Hatches:	
				None	
				Reference Drawings:	
				Elec. Drawing - E-1546 and 1576-1	
				Fire Drawings - Fig. 9.5-6 and 9.5-9	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	0
				b. Lube oil	0
				c. Other	0
				d. Transient	0
DEVIATION REQUEST: None				AREA = 196 ft ²	TOTAL 0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Fuel Pool Cooling Pump Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4626	BLDG. Reactor	ELEV. 162 to 173'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1VHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguisher
II	Channel B conduit for SACS (water for fuel pool cooling)		EMERG. LIGHTS:	
II	Fuel pool cooling pump 1BP211		Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division II cable and equipment in this area is not required for safe shutdown.			Ceiling:	Unrated
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Elec. Drawings - E-1546-1, 1556-1, 1576-1 and E-1586-1	
			Fire Drawings - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 210 ft ²	TOTAL 0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Fuel Pool Heat Exchanger Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4627	BLDG. Reactor	ELEV. 162 to 173'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1VHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguisher
	None		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. There is no safe shutdown equipment or cable in this area.			Ceiling:	Unrated
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Elec. Drawings - E-1576-1	
			Fire Drawings - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 145 ft ²	TOTAL 0

TABLE 9A-12
FIRE HAZARD ANALYSIS TABULATION

ROOM: Fuel Pool Heat Exchanger Room

Fire Area: RB5, Elev 132 and above

ROOM NO. 4628	BLDG. Reactor	ELEV. 162 to 173'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	H ₂ O hose 1VHR200
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Portable extinguisher
II	Channel D conduit for SACS (water for fuel pool cooling)		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	Unrated
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated
None. The Division II cable in this area is not required for safe shutdown.			Ceiling:	Unrated
			Doors and Hatches:	
			None	
			Reference Drawings:	
			Elec. Drawings - E-1576 and 1586-1	
			Fire Drawings - Fig. 9.5-6 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 145 ft ²	TOTAL 0

TABLE 9A-13

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: RB6, Technical Support Center

EFFECT OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. There are no safe shutdown equipment or cable in this fire area.

Total BTU Combustibles: 297,773,553

Total Floor Area: 5,084 ft²

Average BTU/ft² 58,571

Average Equivalent Fire Severity: 43.93 min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Full

TABLE 9A-13
FIRE HAZARD ANALYSIS TABULATION

ROOM: Technical Support Center		Fire Area: RB6, Technical Support Center	
ROOM NOS. 4415, 4416, 4417 4418, 4419, & 4420	BLDG. Reactor ELEV. 132	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None	Ionization Photo-el	H ₂ O hose 1HHR401 Portable Extinguisher
		EMERG. LIGHTS:	
		No	
		CONSTRUCTION:	FIRE RATING:
		Walls:	3 hour
		North East South West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour
None. There is no safe shutdown equipment or cable in this area.		Ceiling:	3 hour
		Doors and Hatches:	
		Doors - 3 hour Hatches - None	
		Reference Drawings:	
		Electrical Drawings - E-1514-1	
		Fire Drawings - Figures 9.5-4 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		General Office Area 8.0 lbs/sq. ft. (Paper) NFPA Handbook 19th Edition	
DEVIATION REQUEST: None.		AREA = 2,038 ft ²	TOTAL 48.00 min.

TABLE 9A-13

FIRE HAZARD ANALYSIS TABULATION

ROOM: Technical Support Center

Fire Area: RB6, Technical Support Center

ROOM NOS. 4514, 4515, 4516 & 4517 BLDG. Reactor ELEV. 145		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization	H ₂ O hose 1THR401 Portable extinguisher
	None	EMERG. LIGHTS:	
		No	
		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	3 hour
		North	
		East	
		South	
		West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	3 hour
None. There is no safe shutdown equipment or cable in this area.		<u>Ceiling:</u>	3 hour
		<u>Doors and Hatches:</u>	
		Doors - 3 hour	
		Hatches - None	
		<u>Reference Drawings:</u>	
		Elec. Drawings - E-1515-1	
		Fire Drawings - Figures 9.5-5 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		General Office Area	
		8.0 lbs/sq. ft. (Paper)	
		NFPA Handbook	
		19th Edition	
DEVIATION REQUEST:		AREA = 2,302 ft ²	TOTAL 48.00 min.
None			

TABLE 9A-14

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: AB1, Electrical Access Area Division I

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None: Redundant Division II equipment and cable with III.G.2.a separation will be used for safe shutdown. The alternate shutdown will be used for safe shutdown. The alternate shutdown mode may be necessary if RHR shutdown cooling suction valve BC-HV-F009 is affected.

Fire in Rooms 5237 or 5339 (elevations 77' and 102') can impact both suppression pool level indicators BJ-LR-4805-1 and BJ-LI-4801 located in the Control Room. Also suppression pool level recorder BJ-LR-4805-2 located in the Remote Shutdown Panel can be impacted by fire in room 5501 (elevation 137'). Although all three rooms are in Fire Area AB1, the same fire cannot impact all the rooms. Therefore, suppression pool level indication will be available at either the Control Room or Remote Shutdown Panel.

Consistent with the above, Fire Alarm Response Procedures alert operators for the potential loss of suppression pool water level indication due to a postulated fire in this Fire Area. The procedures provide guidance to the operators with respect to alternate locations where suppression pool water level indication is available depending on the specific fire location.

Total BTU Combustible: 340.004×10^6

Total Floor Area: 8716 ft^2

Average BTU/ft²: 39,009

Average Equivalent Fire severity: 29.26 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Full

TABLE 9A-14 (Cont)

ROOM: Electrical Access Area		Fire Area: AB1, Electrical Access Area Division I	
ROOM NO. 5237 BLDG.Auxiliary/Control & Diesel ELEV. 77		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization Heat actuated	H ₂ O hose 1LHR400 & 2 1GHR400 Auto preaction sprinkler
I	Class 1E cable trays containing power, control, and/or instrumentation for inboard isolation valve and containment instrument gas valves, diesel generator breaker indication at RSP, switchgear room cooling indication, control area HVAC, suppression pool temperature monitoring, HPCI, RHR, SSW, SACS, and SDG Suppression Pool level indicator BJ-LI-4801 and level recorder BJ-LR-4805-1	EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. A 3-hour fire barrier has been added at Column Q to separate Division I from Division II. Since only one division remains in this fire area, a fire in 5237 will not prevent safe shutdown using the MCR and redundant Division II equipment, which has III.G.2.a separation. The auto sprinkler system is installed to reduce the hazard due to cable concentrations. The east wall, constructed of gypsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	
		North	3 hour
		East	3 hour
		South	3 hour
		West	Unrated exterior
		<u>Floor:</u>	3 hour
		<u>Ceiling:</u>	3 hour
		<u>Doors and Hatches:</u>	3 hour, except for stairwell door
		<u>Reference Drawings:</u>	
		Electrical Drawings - E-1662, E-1672, and E-1682	
		Fire Drawings - Fig. 9.5-2 and 9.5-9	
DEVIATION REQUEST: None		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	28,147 lb 35.5
		b. Lube oil	0
		c. Other	0
		d. Transient	0
		AREA = 2977 ft ²	TOTAL 35 min

TABLE 9A-14 (Cont)

ROOM: Electrical Access Area		Fire Area: AB1, Electrical Access Area Division I	
ROOM NO. 5339	BLDG.Auxiliary/Control & Diesel	ELEV. 102	
MECH		Heat actuated	H ₂ O hose 1DHR401 & 2
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization	1BHR401
I & II	Diesel generator intake silencers	EMERG. LIGHTS:	Portable extinguisher
I	Channel A&C cable which includes the diesel A&C control power supply cable	Yes	Auto preaction sprinkler
	Cable is for HPCI, RHR, SACS, DGs, A&C, SWS, and CS	CONSTRUCTION:	FIRE RATING:
	Suppression Pool level indicator BJ-LI-4801 and level recorder BJ-LR-4805-1	<u>Walls:</u>	
		North	3 hour*
		East	3 hour
		South	3 hour
		West	2 hour (outside)
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	3 hour
None. Loss of Division I equipment is acceptable. Division II equipment and cable, etc, will be used for shutdown. Loss of diesel generator in Division II due to a fire and/or firefighting activity damaging the diesel generator intake silencers or connecting piping is not postulated. The piping material and configuration is such that a failure is not credible. The sprinkler system will more than compensate for the electrical bus ducts which penetrate the north wall.		<u>Ceiling:</u>	3 hour
The east wall, constructed of gypsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.		<u>Doors and Hatches:</u>	3 hour (except stairwell door)
		* Two electrical bus ducts penetrate this wall without a 3-hour fire barrier.	
		<u>Reference Drawings:</u>	
		Electrical Drawings - E-1663, E-1673, and E-1683	
		Fire Drawings - Fig. 9.5-3 and 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	29,153 lb 32.74
		b. Lube oil	0
		c. Other	0
		d. Transient	0
		e. Plastic	4 lb 0.02
DEVIATION REQUEST: Yes, Bus ducts without barrier.		AREA = 3339 ft ²	TOTAL 32.76min

TABLE 9A-14 (Cont)

ROOM: Electrical Access Area		Fire Area: AB1, Electrical Access Area Division I					
ROOM NO. 5450 West BLDG. Auxiliary/Diesel		ELEV. 130	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Photoelectric	H ₂ O hose 1GHR40 Portable extinguisher			
I	Division I cable trays for RHR, CS, SACS, chilled water, HPCI, IE inverters, diesel generator power, diesel generator sequencer, RSP indications, and control room HVAC		EMERG. LIGHTS:				
	Diesel generator air inlet filters AF413 and CF413		Yes				
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II cable and equipment have III.G.2.a separation and will be used for shutdown.			CONSTRUCTION:	FIRE RATING:			
			<u>Walls:</u>	See fire drawings			
			North	3 hour			
			East	3 hour			
			South	Unrated			
			West	Unrated			
			<u>Floor:</u>	3 hour			
			<u>Ceiling:</u>	Unrated			
			<u>Doors and Hatches:</u>	See fire drawing			
			<u>Reference Drawings:</u>				
			Electrical Drawings - E-1675-1 and E-1685-1				
			Fire Drawings - Fig. 9.5-4 and 9.5-9				
			COMBUSTIBLES:	EQUIV. FIRE			
			<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>			
			a. Cable insulation	2542 lb 9.5			
			b. Lube oil				
			c. Other				
			d. Transient (Lube oil)				
			DEVIATION REQUEST: None			AREA = 1000 ft ²	TOTAL 10 min.

TABLE 9A-14 (Cont)

ROOM: Electrical Access Area		Fire Area: AB1, Electrical Access Area Division I +-----	
ROOM NO. 5501	BLDG. Auxiliary/Control	ELEV. 137	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
I	Division I tray and conduit	Ionization	H ₂ O hose 1THR400 Portable extinguishers
	Power dist. panels 10D496, 1AD481, 0AD495, and 1CD481	EMERG. LIGHTS:	
	RSP room air handling unit 1VH316 (Ch. A)	Yes	
	Valve GJ-TV-9768A RSP cooling coil	CONSTRUCTION:	FIRE RATING:
II	Valve GJ-TV-9768B, RSP cooling coil	<u>Walls:</u>	
	RSP Suppression Pool level recorder BJ-LR-4805-2	North	3 hour
		East	3 hour
		South	3 hour
		West	3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	3 hour
None. Wall at Column R has been upgraded to 3-hour fire barrier. Redundant Division II equipment and cable have III.G.2.a separation and will be used for shutdown. No safe shutdown equipment in room adjacent to unrated wall.		<u>Ceiling:</u>	
Note: OVH316 may be powered from Division II in the future. This will have no effect on the analysis, since shutdown will be from main control room upon a fire in 5501. All associated circuits have coordinated protective devices.		<u>Doors and Hatches:</u>	3 hour
RSP unit 1VH316 is not required for a fire in this area.		<u>Reference Drawings:</u>	
GJ-TV-97688 is not required for a fire in this area.		Electrical Drawings - E-1655 & E-1665	
		Fire Drawings - Fig. 9.5-5 & 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>SEVERITY (MIN.)</u>
		QUANTITY	
		a. Cable insulation	8207 lb
		b. Lube oil	22.0
		c. Other	0
		d. Transient	0
DEVIATION REQUEST: None		AREA = 1400 ft ²	TOTAL
			22 min.

TABLE 9A-15

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: AB2, Electrical Access Area Division II

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division I safe shutdown equipment and cable has III.G.2.a. separation and will be used for safe shutdown since the RHR shutdown cooling suction and return valves BC-HV-F008 and BC-HV-F015A are in this fire area, the alternate shutdown path may be necessary or open these valves manually when needed.

Div I and Div II Reactor Level Indicators BB-LR-623A & B and Pressure Indicators BB-PR-R623A & B are impacted due to fire in this area. However, redundant level and pressure indication is available in the Main Control Room at Panel C650 via BB-PI-3684 and BB-LI-3682A (BB-LR-3682A). These level and pressure indicators receive input from Pressure Transmitter BB-PT-3684A and Level Transmitter BB-LT-3682A. The cables for these transmitters are routed from RB1 and AB1 and unaffected by fire in the area AB2.

The ADS/SRV circuits are located in this Fire Area. A postulated fire in Rooms 3204 and 3425 can cause failure of cables associated with both channels B and D for a number of ADS/SRVs control and actuations. A postulated fire in Rooms 3301, 3302, 3314, 3342, 5207, 5301, 5401, and 5423 can cause failure of all 14 ADS/SRVs .

Power and control circuitry for all SRVs are from Channel B (Div II) and ADS valves are from Channel B and D (Div II). In the unlikely event of a fire that propagates into multiple rooms in this Fire Area and affects all 14 SRV circuits, implementation of emergency repair actions for Remote Manual Operation of ADS/SRV's maybe required. This will ensure the ability to depressurize the plant to the point for Shutdown Cooling mode of RHR operation.

Total BTU Combustible: 1,165.9 x 10E6

Total Floor Area: 16,434 ftE2

Average BTU/ft²: 70,947

Average Equivalent Fire Severity: 53.21 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Full

TABLE 9A-15 (Cont)

ROOM: Future Controlled Storage Area Fire Area: AB2, Electrical Access Division II

ROOM NO.5106/3110 BLDG.Auxiliary/Diesel Control & Service ELEV.54		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: RCIC control and logic RHR A & B pressure and level control	Photoelectric Ionization	H ₂ O hose 1EHR400, 1FHR400, 1DHR400, and 1CHR400
II	RHR A & B pressure and level control	EMERG. LIGHTS:	Portable extinguisher
II	Battery room duct heaters	Yes	
I & II	SACS accumulator tanks	CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u> North East South West	See fire drawings
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	Unrated (basemat)
. HPCI will back up RCIC.		<u>Ceiling:</u>	See fire drawings
. RHR pressure and level control for steam condensing mode not required; backup valves provide isolation.		<u>Doors and Hatches:</u>	See fire drawings
. Loss of space heaters does not affect system operation.		<u>Reference Drawings:</u>	
. Redundant equipment has III.G.2.a separation.		Electrical Drawings - E-1651, E-1712, E-1716, E-1714, E-1661, E-1671, E-1681	
. Instrumentation on tanks will not affect SACS operation.		Fire Drawings - Fig. 9.5-1 & 9.5-10	
DEVIATION REQUEST:		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	21,914 lb 14.3
		b. Lube oil	360 gal 7.0
		(3122 sf)	
		c. Other	
		d. Transient	
		AREA = 3683 + 2058 = 5741 ft ²	TOTAL 21.3 min.

TABLE 9A-15 (Cont)

ROOM: Electrical Access Areas

Fire Area: AB2, Electrical Access Area Division II

ROOM NO.5207 & 3204 BLDG.Auxiliary/Control & /Service ELEV. 77		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization Heat actuated	H O hose 1LHR400 & 2 1JHR400 Portable extinguisher Auto preaction sprinkler
II	Class 1E cable trays containing ADS, RSP control and instrumentation for RCIC, SSW, SACS, switchgear room cooling and RHR shutdown cooling valves BC-HV-F008 and BC-HV-F015A	EMERG. LIGHTS: Yes	
	All 14 ADS/SRVs are affected in Room 5207 SN-PSV-F013A thru E are affected in Room 3204	CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u> North 3 hour East Unrated & 2 hr @ stairwell South 3 & 2 hr @ stairwell West 3 hour	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:	<u>Floor:</u>	2 hour
	None. A 3-hour fire barrier has been added at Column Q to separate Division II (east of Q) from Division I (west of Q). Therefore, a fire in 5207 East and/or 3204 will not prevent shutdown from the MCR using Division I, which has III.G.2.a separation. There is no safe shutdown equipment of cable in rooms adjacent to 5207/3204 unrated walls. An auto sprinkler system is installed to reduce the hazard due to cable concentrations.	<u>Ceiling:</u>	2 hour
	The west wall of room 5207, constructed of gypsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.	<u>Doors and Hatches:</u> 3 hour, except east wall	
		<u>Reference Drawings:</u> Electrical Drawings - E-1652, E-1662, E-1732, and E-1736 Fire Drawings - Fig. 9.5-2 & 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	81,634 lb 90.3
		b. Lube oil	0
		c. Sec. Cabinet	1 @ 0.04x10E6 Btu <0.01
		d. Transient	0
	DEVIATION REQUEST: None	AREA = 3391 ft ²	TOTAL 90.3 min.

TABLE 9A-15 (Cont)

ROOM: Electrical Access Areas		Fire Area: AB2, Electrical Access Area Division II	
ROOM NO. 5301&3314 BLDG.Auxiliary/Control & Diesel ELEV. 102		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization	H O hose 1AHR401, 2
SHUTDOWN DIVISION			1NHR400
II		EMERG. LIGHTS:	Portable extinguisher
II	Division II, Channel B cable tray includes RCIC, RSP control and inst. recirc. pump B trip	Yes	
	Circuits for RHR shutdown cooling valves BC-HV-F008 and BC-HV-F015A		
	All 14 ADS/SRVs are affected		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		CONSTRUCTION:	FIRE RATING:
None. A 3-hour fire barrier added at column Q separates Division II from I. Two electrical bus ducts penetrate this 3-hour fire barrier without a fire stop. An auto suppression system installed in 5339 prevents a fire in 5301 from affecting the redundant division in 5339 through these bus ducts. Redundant safe shutdown equipment in Division I has III.G.2.a separation and will be used for shutdown from the MCR. Areas 3314 and 4301 are separated by a series of pressure-tight doors with an airlock between. Area 3314 contains Division II as above; 4301 contains non-Class 1E cable tray and some Division I conduits within a 10-foot radius of the PT doors (see Fig. 9.5-3). These Division I conduits contain some Division I RSP suppression pool level indication and reactor recirculation pump trip signals. An auto suppression system is installed in 4301 adjacent to these PT doors. Loss or spurious actuation of these signals due to a fire in 3314 is acceptable; therefore, no deviation is requested.		<u>Walls:</u>	
		North	3 hour
		East	2 hour
		South	3 hour/2 hour
		West	* 3 hour
		<u>Floor:</u>	3 hour/2 hour
		<u>Ceiling:</u>	3 hour/2 hour
		<u>Doors and Hatches:</u>	
		*Two electrical bus ducts penetrate 3-hour wall without fire stop.	
		<u>Reference Drawings:</u>	
		Electrical Drawings - E-1663	
		Fire Drawings - Fig. 9.5-3 & 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	54,205 lb 103.2
		b. Lube oil	
		c. Other	
		(sec. cabinet)	1 @ 0.04x10E6 Btu 0.02
		d. Transient	
		AREA = 1970 ft ²	TOTAL 103.22 min.
DEVIATION REQUEST: Yes, Bus ducts without barrier and Non-UL rated Pressure Doors			

TABLE 9A-15 (Cont)

ROOM: Electrical Access Area		Fire Area: AB2, Electrical Access Area Division II	
ROOM NO. 5401 & 3425BLDG.Auxiliary/Control & Radwaste ELEV. 124		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization Photoelectric Heat actuated	H ₂ O hose 1RHR400 in 5401 Portable extinguisher (in 5401) Auto preaction sprinkler
II	Division II cable	EMERG. LIGHTS:	
II	Circuits for RHR shutdown cooling valves BC-HV-F008 and BC-HV-F015A	Yes	
	All 14 ADS/SRVs are affected in Room 5401	CONSTRUCTION:	FIRE RATING:
	AB-PSV-13F, H and M are affected in Room 3425	<u>Walls:</u>	
		North	3 hour
		East	1 and 2 hour
		South	3 hour
		West	Open to 5423 east
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	3 hour
None. Redundant Division I cable has III.G.2.a separation and would be used for safe shutdown.		<u>Ceiling:</u>	3 hour
The auto sprinkler system is installed to reduce the hazard due to inaccessible cable concentrations.		<u>Doors and Hatches:</u>	3 hour
The gypsum board barriers that enclose the electrical vault are 1-hour rated and provide III.G.2.c separation.		<u>Reference Drawings:</u>	
		Electrical Drawings - E-1654, E-1664, E-1767 & E-1769	
		Fire Drawings - Fig. 9.5-4 & 9.5-10	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	33,154 lb 46.1
		b. Lube oil	0
		c. Other	0
		d. Transient	0
DEVIATION REQUEST: None		AREA = 2696 ft ²	TOTAL 46.1 min.

TABLE 9A-15 (Cont)

ROOM: Electrical Access Area Fire Area: AB2, Elec Access Area Div. II

ROOM NO. 5423	BLDG. Auxiliary Diesel	ELEV. 130	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H ₂ O hose 1CHR401 Portable Extinguishers
II	Division II cable trays for RHR, CS, SACS, chilled water, RCIC, 1E inverters, DG power, DG sequencer, RSP indications, control room HVAC.		EMERG. LIGHTS:	
	DG air inlet filters BF413 and DF 413		Yes	
II	Circuits for RHR shutdown cooling valve BC-HV-F015A All 14 ADS/SRVs are affected		CONSTRUCTION:	FIRE RATING:
			<u>Walls:</u> North East South West	See Fire Drawings All 3-hour walls except outside walls and opening to Zone 5401.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			<u>Floor:</u>	3 hour
None. Redundant Division I cable has III.G.2.a separation and will be used for safe shutdown. East end of 5423 is connected to 5401 which also is a Division II area.			<u>Ceiling:</u>	Unrated (outside)
			<u>Doors and Hatches:</u>	See Fire Drawings
			<u>Reference Drawings:</u> Elec. Drawings - E-1665 Fire Drawings - Figures 9.5-4 and 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
			a. Cable insulation	13,724 lbs. 73.9
			b. Lube oil	
			c. Other	
			d. Transient	
DEVIATION REQUEST: None			AREA = 696 ft ²	TOTAL 73.9 min.

TABLE 9A-15 (Cont)

ROOM: Electrical Access Area

Fire Area: AB2, Elec Access Area Div. II

ROOM NO. 3301,3302,3303,3304 & 3342 BLDG. Auxiliary & Diesel ELEV 102		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization	H ₂ O hoses 1NHR400, 1PHR400, & 0QHC300
II	Division II, conduit and cable tray includes SSW, SACS, Rx. Protection, ADS, 250 VDC (Class 1E), 480 V MCC (Class 1E), Nuclear Boiler & Rx Recirc, RCIC, Core Spray, RHR, Cont. Instr. Gas, Main Steam, Fuel Pool Cooling & Cleanup, Fresh Water Pretreatment, Aux. Bldg. Chilled Water - Ctrl Rm	EMERG. LIGHTS: Yes	
	All 14 ADS/SRVs are affected in Rooms 3301, 3302 and 3342	CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	
		North	2 hour
		East	3 hour/2 hour/open to Vestibule 3313
		South	2 hour
		West	3 hour/2hour at Stair 31-01
		<u>Floor:</u>	2 hour
		<u>Ceiling:</u>	3 hour/Unrated Roof
		<u>Doors and Hatches:</u>	1 1/2 hour/ No Hatches
		<u>Reference Drawings:</u>	
		Elec. Drawings - E-1754-0 & E-1756-0 Fire Drawings - Figures 9.5-3 and 9.5-8	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		Cable insulation	17,248 lbs. 41.4
		Lube oil	0 0
		Paper	500 lbs. 1.9
		Transient	0 0
		AREA = 1561 ft ²	TOTAL 43.3 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Redundant Division I cable has III.G.2.a separation and would be used for safe shutdown.			
The section of the south wall of room 3301, consisting of a gypsum board wall and ceiling, contains features (penetration seals) rated at less than 2 hours. This is acceptable as outlined in Section 9A.1.2.1.			
DEVIATION REQUEST: None			

TABLE 9A-16

FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: CD1

ROOM NO. 5101	BLDG. Auxiliary/Control	ELEV. 54	FIRE DETECTION TYPE: None		FIRE SUPPRESSION TYPE: H ₂ O hose 1EHR400 Portable extinguisher	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: No			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None			CONSTRUCTION:		FIRE RATING:	
			<u>Walls:</u> North 3 hour East 2 hour South 3 hour West 2 hour <u>Floor:</u> Unrated (basemat) <u>Ceiling:</u> See fire drawings <u>Doors and Hatches:</u> See fire drawings <u>Reference Drawings:</u> Electrical Drawings - E-1651-1 Fire Drawings - Fig. 9.5-1 & 9.5-9			
DEVIATION REQUEST: None			COMBUSTIBLES:			
			MATERIAL:		QUANTITY	EQUIV. FIRE SEVERITY (MIN.)
			a. Cable insulation		566 lb	37.0
			b. Lube oil			0
			c. Other			0
			d. Transient			0
			AREA = 57 ft ²		TOTAL	37 min.

TABLE 9A-17
FIRE HAZARD ANALYSIS TABULATION

Fire Area: CD2

ROOM NO. 5102	BLDG. Auxiliary/Control	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:	None	Ionization	H O hose 1BHR400, 2 1EHR400
SHUTDOWN DIVISION			EMERG. LIGHTS:	Portable Extinguisher
			No	
			CONSTRUCTION:	FIRE RATING:
			Walls:	See fire drawings
			North	
			East	
			South	
			West	
			Floor:	Unrated (basemat)
			Ceiling:	3 hour
			Doors and Hatches:	See fire drawings
			Reference Drawings:	
			Electrical Drawings - E-1651-1	
			Fire Drawings - Fig. 9.5-1 & 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	35,460 lb. 31.83
			b. Lube oil	0
			c. Other	0
			d. Transient	0
			e. Plastic	4 lb 0.01
			AREA = 4178 ft ²	TOTAL 31.84 min.
			DEVIATION REQUEST: None	

TABLE 9A-18
FIRE HAZARD ANALYSIS TABULATION

ROOM: 125-V DC Equipment Room

Fire Area: CD3

ROOM NO. 5103		BLDG. Auxiliary/Control	ELEV. 54	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			Photoelectric Ionization		H ₂ O hose 1GHR400 Portable extinguisher	
				EMERG. LIGHTS: No			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:		FIRE RATING:	
				<u>Walls:</u> North East South West <u>Floor:</u> <u>Ceiling:</u> <u>Doors and Hatches:</u>		See fire drawings Unrated (basemat) 3 hour See fire drawings	
				<u>Reference Drawings:</u> Electrical Drawings - E-1651-1 & E-1661-1 Fire Drawings - Fig. 9.5-1 & 9.5-9			
				COMBUSTIBLES: <u>MATERIAL:</u>		<u>QUANTITY</u>	
				a. Cable insulation		4282 lb	
				b. Lube oil		0	
				c. Other		0	
				d. Transient		0	
DEVIATION REQUEST: None				AREA = 449 ft ²		TOTAL	
						36 min.	

TABLE 9A-19
FIRE HAZARD ANALYSIS TABULATION

ROOM: HPCI Battery Room

Fire Area: CD4

ROOM NO. 5104		BLDG. Auxiliary/Control		ELEV. 54		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: HPCI 250-V dc battery 100421 Division I cabling					Ionization		H ₂ O hose 18HR400 Portable extinguisher			
						EMERG. LIGHTS: Yes					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II cabling, which has III.G.2.a separation, will be used for shutdown.						CONSTRUCTION:		FIRE RATING:			
						<u>Walls:</u> North East South West		3 hour			
						<u>Floor:</u>		Unrated (basemat)			
						<u>Ceiling:</u>		3 hour			
						<u>Doors and Hatches:</u>		3 hour			
						<u>Reference Drawings:</u> Electrical Drawings - E-1661-1 Fire Drawings - Fig. 9.5-1 & 9.5-9					
						COMBUSTIBLES:		EQUIV. FIRE			
						MATERIAL:		QUANTITY		SEVERITY (MIN.)	
						a. Cable insulation		0			
						b. Lube oil		0			
						c. Other		152 lb		4.2	
						d. Transient		0			
DEVIATION REQUEST: None						AREA = 365 ft ²		TOTAL		4 min.	

TABLE 9A-20

TABLE NOT USED

(refer to Table 9A-99)

TABLE 9A-21
FIRE HAZARD ANALYSIS TABULATION

ROOM: Deisel Fuel Oil Storage Tanks and Pumps Fire Area: CD6

ROOM NO. 5107	BLDG. Auxiliary/Deisel	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	CO ₂ Total Flooding System
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Infra Red	Manual Deluge System.
DIVISION			Heat Actuated	H ₂ O hose 1BHR400 and
II	Diesel Fuel Oil Storage Tank 1GT403 and Pump 1GP401		EMERG. LIGHTS:	Portable Extinguishers
	" " " " " 1HT403 and Pump 1GP401		Yes	available in Room 5112.
	Channel D Conduit			
			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hour
			North	
			East	
			South	
			West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	Unrated (basemat)
	None. Loss of D diesel-generator is postulated. Shutdown using		Ceiling:	3 hour
	A,B,&C channel equipment form MCR. Redundand equipment has		Doors and Hatches:	3 hour
	III.G.2.a separation.			
			Reference Drawings:	
			Elec. Drawings - E-1671-1	
			Fire Drawings - Figure 9.5-1	
			Figure 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil (fuel oil	53,000 gal
			No.2)	5,350
			c. Other	0
			d. Transient	0
			AREA = 1100 ft ²	TOTAL 5.350 min.
	DEVIATION REQUEST: None			

TABLE 9A-22
FIRE HAZARD ANALYSIS TABULATION

ROOM: Diesel Fuel Oil Storage Tanks and Pumps

Fire Area: CD7

ROOM NO. 5108	BLDG. Auxiliary/Diesel	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Photoelectric Infra-red Heat Actuated	CO ₂ Total Flooding System Manual Deluge System. H ₂ O hose 1BHR400 and Portable Extinguishers available in Room 5112.
II	Diesel Fuel Oil Storage Tank 1CT403 and Pump 1CP401 " " " " " 1DT403 and Pump 1DP401 Channel B Conduit		EMERG. LIGHTS: Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hour
			North East South West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated (basemat)
None. Loss of B diesel-generator postulated. Shutdown using A,C, and D equipment form MCR. Redundant equipment has III.G.2.a separation.			Ceiling:	3 hour
			Doors and Hatches:	3 hour
			Reference Drawings: Elec. Drawing - E-1671-1 Fire Drawings - Figure 9.5-1 Figure 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable insulation	0
			b. Lube oil (fuel oil No. 2)	53,000 gal 5,350
			c. Other	0
			d. Transient	0
DEVIATION REQUEST: None			AREA = 1100 ft ²	TOTAL 5,350 min.

TABLE 9A-23
FIRE HAZARD ANALYSIS TABULATION

ROOM: Diesel Fuel Oil Storage Tanks and Pumps

Fire Area: CD8

ROOM NO. 5109	BLDG. Auxiliary/Diesel	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	CO ₂ Total Flooding System
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Infra-Red Heat Actuated	Manual Deluge System. H ₂ O Hose 1AHR400 and Portable Extinguishers available in Room 5112.
I	Diesel Fuel Oil Storage Tank 1ET403 and Pump 1EP401 " " " " " 1FT403 and Pump 1FP401 Channel C Conduit		EMERG. LIGHTS: Yes	
		CONSTRUCTION:	FIRE RATING:	
		Walls:	3 hour	
		North		
		East		
		South		
		West		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	Unrated (basemat)	
None. Loss of C diesel-generator postulated. Shutdown using A,B, and D equipment from MCR. Redundant equipment has III.G.2.a separation.		Ceiling:	3 hour	
		Doors and Hatches:	3 hour	
		Reference Drawings:		
		Elec. Drawing - E-1681		
		Fire Drawings - Figure 9.5-1 Figure 9.5-10.		
		COMBUSTIBLES:	EQUIV. FIRE	
		MATERIAL:	QUANTITY	SEVERITY (MIN.)
		a. Cable insulation		0
		b. Lube Oil (fuel oil No. 2)	53,000 gal	5,350
		c. Other		0
		d. Transient		0
DEVIATION REQUEST: None		AREA = 1100 ft ²	TOTAL	5,350 min.

TABLE 9A-24
FIRE HAZARD ANALYSIS TABULATION

ROOM: Diesel Fuel Oil Storage Tanks and Pumps

Fire Area: CD9

ROOM NO. 5110	BLDG. Auxiliary/Diesel	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	CO ₂ Total Flooding System
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Infra-Red	Manual Deluge System.
DIVISION			Heat Actuated	H ₂ O Hose 1AHR400 and
				Portable Extinguishers
I	Diesel Fuel Oil Storage Tank 1AT403 and Pump 1AP401		EMERG. LIGHTS:	available in Room 5112.
	" " " " " 1BT403 and Pump 1BP401			
			Yes	
I	Channel A Conduit			
			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hour
			North	
			East	
			South	
			West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	Unrated (basemat)
	None. Loss of A diesel-generator postulated. Shutdown using		Ceiling:	3 hour
	B,C and D equipment form MCR. Redundant equipment has III.G.2.a		Doors and Hatches:	3 hour
	separation.			
			Reference Drawings:	
			Elec. Drawing - E-1681	
			Fire Drawings - Figure 9.5-1	
			Figure 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube Oil (fuel oil	53,000 gal
			No. 2)	5,350
			c. Other	0
			d. Transient	0
			AREA = 1100 ft ²	TOTAL 5,350 min.
	DEVIATION REQUEST: None			

TABLE 9A-25

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD10, Control Diesel Corridors

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIATION RELEASE:

None. Redundant Division I safe shutdown equipment and cable will be used for safe shutdown.

Total BTU Combustible: 101,542,613

Total Floor Area: 9106 ft²

Average BTU/ft²: 11,151

Average Equivalent Fire Severity: 8.36 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Partial

TABLE 9A-25
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD10

ROOM NO. 5111/5112	BLDG. Auxiliary/Diesel	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		Photoelectric Ionization	H ₂ O Hose 1AHR400, 1BHR400
			EMERG. LIGHTS: Yes	Portable Extinguisher
			CONSTRUCTION:	FIRE RATING:
			<u>Walls:</u>	
			North	3 hour
			East	3 hour
			South	3 hour
			West	Unrated
			<u>Floor:</u>	Unrated (basemat)
			<u>Ceiling:</u>	See Fire Drawings
			<u>Doors and Hatches:</u>	See Fire Drawings
			<u>Reference Drawings:</u>	
			Elec. Drawings - E-1671 and E-1681	
			Fire Drawings - Figure 9.5-1 Figure 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE
			<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
			a. Cable insulation	5,752 lbs 9.61
			b. Lube oil	0
			c. Other	0
			d. Transient	0
			e. Plastic	4 lbs 0.03
			AREA = 2244 ft ²	TOTAL 9.64 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				
None				
Note: Cable only in 5112 area, 2244 ft ² . No cable in 5111 area 611 ft ² .				
DEVIATION REQUEST: Yes, Ruskin fire damper 1GMD279D6				

TABLE 9A-25 (Cont)

ROOM: Vestibule		Fire Area: CD10																	
ROOM NO. 5121	BLDG. Auxiliary/Control	ELEV. 54																	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:																
	None	None	H ₂ O hose 1BHR400 Portable extinguisher																
		EMERG. LIGHTS:																	
		Yes																	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		CONSTRUCTION:	FIRE RATING:																
		<u>Walls:</u> North East South West <u>Floor:</u> Unrated (basemat) <u>Ceiling:</u> Unrated <u>Doors and Hatches:</u> See fire drawings <u>Reference Drawings:</u> Electrical Drawings - E-1661 Fire Drawings - Fig. 9.5-1 & 9.5-10																	
None		COMBUSTIBLES:																	
		<table border="1"> <thead> <tr> <th><u>MATERIAL:</u></th> <th><u>QUANTITY</u></th> <th><u>EQUIV. FIRE SEVERITY (MIN.)</u></th> </tr> </thead> <tbody> <tr> <td>a. Cable insulation</td> <td>425 lb</td> <td>26.6</td> </tr> <tr> <td>b. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>c. Other</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient</td> <td></td> <td>0</td> </tr> <tr> <td>AREA = 60 ft²</td> <td>TOTAL</td> <td>27 min.</td> </tr> </tbody> </table>	<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>	a. Cable insulation	425 lb	26.6	b. Lube oil		0	c. Other		0	d. Transient		0	AREA = 60 ft ²	TOTAL
<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>																	
a. Cable insulation	425 lb	26.6																	
b. Lube oil		0																	
c. Other		0																	
d. Transient		0																	
AREA = 60 ft ²	TOTAL	27 min.																	
DEVIATION REQUEST: None																			

TABLE 9A-25
FIRE HAZARD ANALYSIS TABULATION

ROOM: Access Area and Corridor

Fire Area: CD10

ROOM NO. 5215 5217 BLDG. Auxiliary/Diesel		ELEV. 77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: DIVISION		Ionization	H2O hose 1FHR401 & 1MHR400	
SHUTDOWN			EMERG. LIGHTS:	Portable Extinguisher	
DIVISION			Yes		
II	Cable in conduit for SWS		CONSTRUCTION:	FIRE RATING:	
I	Cable in conduit for SWS		<u>Walls:</u>		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. The Division II cable are exposed in 5215. The Division I cable are enclosed in a 3-hour fire barrier, thus, separating them by III.G.2.A separation from the Division II cable. Shut-down will be with the Division I equipment.			North	3 hour	
			East	3 hour	
			South	3 hour	
			West	Unrated	
			<u>Floor:</u>	See Fire Drawings	
			<u>Ceiling:</u>	See Fire Drawings	
			<u>Doors and Hatches:</u>	See Fire Drawings	
			<u>Reference Drawings:</u>		
			Elec. Drawings 0 E-1682 and E-1672		
			Fire Drawings - Figures 9.5-2 and 9.5-10		
DEVIATION REQUEST: None			COMBUSTIBLES:	EQUIV. FIRE	
			<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>
			a. Cable insulation		0
			b. Lube oil		0
			c. Other		0
			d. Transient		0
			e. Plastic 2	4 lbs	0.03
AREA = 1800 ft	TOTAL	0.03			

FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: CD10

ROOM NO. 5233		BLDG. Auxiliary/Control	ELEV. 77	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			None		H ₂ O hose 1MHR400 Portable Extinguisher			
				EMERG. LIGHTS: Yes					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:		FIRE RATING:			
				Walls:					
				North		2 hour			
				East		3 hour			
				South		2 hour			
				West		3 hour			
				Floor:		Unrated			
				Ceiling:		Unrated			
				Doors and Hatches:		See Fire Drawings			
				Reference Drawings:					
Elec. Drawings - E-1662									
Fire Drawings - Figures 9.5-2 and 9.5-10									
DEVIATION REQUEST: None				COMBUSTIBLES:		EQUIV. FIRE			
				<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
				a. Cable insulation				0	
				b. Lube oil				0	
				c. Other				0	
				d. Transient				0	
AREA = 132 ft ²		TOTAL		0					

TABLE 9A-25 (Cont)

ROOM: Corridor		Fire Area: CD10	
ROOM NO. 5308 & 5315		BLDG. Auxiliary/Diesel	ELEV. 102
MECH SHUTDOWN DIVISION		SAFE SHUTDOWN EQUIPMENT AND CABLE:	FIRE DETECTION TYPE:
None			Ionization
			EMERG. LIGHTS:
			Yes
			CONSTRUCTION:
			Walls:
			North
			East
			South
			West
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:
None. The north wall of room 5313, between column lines "W" & "X" at 8 inches north of 30.7, constructed of gypsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.			Ceiling:
			Doors and Hatches:
			Doors
			Hatches
			Reference Drawings:
			Electrical Drawings - E-1673-1 & E-1683-1
			Fire Drawings - Fig. 9.5-3 & 9.5-10
COMBUSTIBLES:			EQUIV. FIRE
MATERIAL:		QUANTITY	SEVERITY (MIN.)
a. Cable insulation		1615 lb	3.4
b. Lube oil		317 gal	19.9
c. Plastic		204 lb	1.73
d. Cloth/Paper		200 lb	1.0
e. Transient plastic tanks		300 lb	2.54
AREA = 1770 ft ²		TOTAL	28.57min.
DEVIATION REQUEST: None			

TABLE 9A-25 (Cont)

ROOM: Corridor		Fire Area: CD10	
ROOM NO. 5409	BLDG. Auxiliary Diesel	ELEV. 130	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE:
SHUTDOWN			Photoelectric
DIVISION			Ionization
	None		EMERG. LIGHTS:
			Yes
			CONSTRUCTION:
			Walls:
			North 3 hour
			East 3 hour
			South 3 hour
			West Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor: Unrated
None. The north wall between column line "W" & "X" at 5'6" south of 30.7, constructed of gypsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.			Ceiling: Unrated
			Doors and Hatches:
			Door 3 hours
			Hatches Unrated
			Reference Drawings:
			Electrical Drawings - E-1675-1 and E-1685-1
			Fire Drawings - Fig. 9.5-4, 9.5-9, and 9.5-10
			COMBUSTIBLES:
			MATERIAL: QUANTITY EQUIV. FIRE SEVERITY (MIN.)
			a. Cable insulation 0 0
			b. Lube oil 0
			c. Other (plastic) 4 lbs 0.04
			d. Transient 0
DEVIATION REQUEST: None			AREA = 1550 ft ² TOTAL 0.04

FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: CD10

ROOM NO. 5536	BLDG. Auxiliary/Diesel	ELEV. 146	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1VHR400 Portable ext.
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS:	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None			CONSTRUCTION:	FIRE RATING:
			<u>Walls:</u> North 2 hour East 3 hour South 2 hour West Open <u>Floor:</u> Unrated <u>Ceiling:</u> Unrated <u>Doors and Hatches:</u> See Fire Drawings <u>Reference Drawings:</u> Elec. Drawings - E-1676-1, E-1686-1, E-1665-1 Fire Drawings - Fig. 9.5-5 and 9.5-10	
DEVIATION REQUEST: None			COMBUSTIBLES: MATERIAL: QUANTITY EQUIV. FIRE SEVERITY (MIN.) a. Cable insulation 0 b. Lube oil 0 c. Other 0 d. Transient 0 AREA = 100 ft ² TOTAL 0	

TABLE 9A-25 (Cont)

ROOM: Corridor

Fire Area: CD10

ROOM NO. 5537		BLDG. Auxiliary/Diesel	ELEV. 146	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE:	None		Ionization	H O hose 1UHR401 and	
SHUTDOWN				Photoelectric	1JHR401	
DIVISION						
				EMERG. LIGHTS:	Portable extinguisher	
				Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. The north wall, between column lines "W" & "X" at 5'-6" south of 30.7, constructed of gupsum board, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.				CONSTRUCTION:	FIRE RATING:	
				Walls:		
				North	3 hour	
				East	3 hour	
				South	3 hour	
				West	Unrated (outside)	
				Floor:	Unrated	
				Ceiling:	Unrated	
				Doors and Hatches:		
				Doors	3 hour (2 hour at stairwell)	
Hatches	Unrated					
DEVIATION REQUEST: None				Reference Drawings:		
				Electrical Drawings - E-1676 & E-1686		
				Fire Drawings - Fig. 9.5-5 & 9.5-10		
				COMBUSTIBLES:	EQUIV. FIRE	
				MATERIAL:	QUANTITY	SEVERITY (MIN.)
				a. Cable insulation	585 lb	1.51
				b. Lube oil		0
				c. Other (plastic)	4 lb	0.04
				d. Transient		0
				AREA = 1450 ft ²		TOTAL

TABLE 9A-26
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room Fire Area: CD11

ROOM NO. 5126 BLDG. Auxiliary/Control ELEV. 54		FIRE DETECTION TYPE: Photoelectric Ionization		FIRE SUPPRESSION TYPE: H ₂ O hose 1BHR400 Portable extinguisher	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None	EMERG. LIGHTS: No			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None		CONSTRUCTION:		FIRE RATING:	
		<u>Walls:</u> North East South West <u>Floor:</u> <u>Ceiling:</u> <u>Doors and Hatches:</u>		3 hour Unrated (basemat) 3 hour 3 hour	
DEVIATION REQUEST: None		COMBUSTIBLES:			
		<u>MATERIAL:</u> a. Cable insulation b. Lube oil c. Other (battery case) d. Transient AREA = 808 ft ²		<u>QUANTITY</u> 620 lb TOTAL	
				EQUIV. FIRE SEVERITY (MIN.) 0 0 7.7 0 8 min.	

TABLE 9A-27
FIRE HAZARD ANALYSIS TABULATION

ROOM: RCIC Battery Room

Fire Area: CD12

ROOM NO. 5128		BLDG. Auxiliary/Control	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Ionization	H2O hose 1EHR400 Portable extinguisher	
	II	250-V dc battery, Class 1E, 10D431 for RCIC system				EMERG. LIGHTS:
II	Division II conduit			Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment (i.e., HPCI), which has III.G.2.a separation, will be used for shutdown.				CONSTRUCTION:	FIRE RATING:	
				<u>Walls:</u>	3 hour	
				North East South West		
				<u>Floor:</u>	Unrated (basemat)	
				<u>Ceiling:</u>	3 hour	
				<u>Doors and Hatches:</u>	3 hour	
				<u>Reference Drawings:</u>		
				Electrical Drawings - E-1661		
				Fire Drawings - Fig. 9.5-1 & 9.5-9		
				COMBUSTIBLES:	EQUIV. FIRE	
				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>
				a. Cable insulation		0
				b. Lube oil		0
				c. Other	73 lb	3.2
				d. Transient		0
				AREA = 230 ft ²	TOTAL	3
DEVIATION REQUEST: None						

TABLE 9A-28
FIRE HAZARD ANALYSIS TABULATION

ROOM: HPCI Electrical Equipment Area Fire Area: CD13

ROOM NO. 5129 BLDG. Auxiliary/Control ELEV. 54		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: 250-V dc, Ch. A, Class 1E switchgear 10D450 Ch. A conduit	Ionization		H ₂ O hose 18HR400 Portable extinguisher	
		EMERG. LIGHTS: Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment, which has III.G.2a separation, will be used for shutdown.		CONSTRUCTION:		FIRE RATING:	
		<u>Walls:</u>		3 hour	
		North East South West			
		<u>Floor:</u>		Unrated (basemat)	
		<u>Ceiling:</u>		3 hour	
		<u>Doors and Hatches:</u>		3 hour	
		<u>Reference Drawings:</u>			
		Electrical Drawings - E-1661-1			
		Fire Drawings - Fig. 9.5-1 & 9.5-9			
DEVIATION REQUEST: None		COMBUSTIBLES:		EQUIV. FIRE	
		<u>MATERIAL:</u>		<u>QUANTITY</u>	
				<u>SEVERITY (MIN.)</u>	
		a. Cable insulation		1415 lb	23.1
		b. Lube oil			0
c. Other			0		
d. Transient			0		
		AREA = 230 ft ²		TOTAL	23 min

TABLE 9A-29
FIRE HAZARD ANALYSIS TABULATION

ROOM: RCIC Electrical Equipment Area Fire Area: CD14

ROOM NO. 5130 BLDG. Auxiliary/Control ELEV. 54		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION II	SAFE SHUTDOWN EQUIPMENT AND CABLE: 250-V dc, Class 1E, Ch. B switchgear Ch. B conduit	Ionization	H ₂ O hose 18HR400 Portable extinguisher
		EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment, which has III.G.2.a separation, will be used for shutdown.		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	3 hour
		North East South West	
		<u>Floor:</u>	Unrated (basemat)
		<u>Ceiling:</u>	3 hour
		<u>Doors and Hatches:</u>	3 hour
		<u>Reference Drawings:</u>	
		Electrical Drawings - E-1661-1	
		Fire Drawings - Fig. 9.5-1 & 9.5-9	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>SEVERITY (MIN.)</u>
		a. Cable insulation 848 lb	7.2
		b. Lube oil	0
		c. Other	0
		d. Transient	0
DEVIATION REQUEST: None		AREA = 444 ft ²	TOTAL 7 min.

TABLE 9A-30
FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: CD15

ROOM NO. 5201		BLDG. Auxiliary/Control	ELEV. 77	FIRE DETECTION TYPE: None		FIRE SUPPRESSION TYPE: H ₂ O hose 11HR400 Portable extinguisher																			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			EMERG. LIGHTS: No		CONSTRUCTION: FIRE RATING: <u>Walls:</u> North 3 hour East 2 hour (stairwell) South 3 hour West 2 hour (elevator enclosure) <u>Floor:</u> 3 hour <u>Ceiling:</u> 3 hour <u>Doors and Hatches:</u> North and South walls: 3-hour door Elevator: Unrated door Stairwell: 1-1/2-hour door <u>Reference Drawings:</u> Electrical Drawings - E-1652-1 Fire Drawings - Fig. 9.5-2 & 9.5-9																			
	II	Ch. D cable trays																							
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable has III.G.2.a separation.																									
DEVIATION REQUEST: None				COMBUSTIBLES: <table border="1"> <thead> <tr> <th><u>MATERIAL:</u></th> <th><u>QUANTITY</u></th> <th><u>EQUIV. FIRE SEVERITY (MIN.)</u></th> </tr> </thead> <tbody> <tr> <td>a. Cable insulation</td> <td>948 lb</td> <td>59.3</td> </tr> <tr> <td>b. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>c. Other</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient</td> <td></td> <td>0</td> </tr> <tr> <td>AREA = 60 ft²</td> <td>TOTAL</td> <td>59 min.</td> </tr> </tbody> </table>				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>	a. Cable insulation	948 lb	59.3	b. Lube oil		0	c. Other		0	d. Transient		0	AREA = 60 ft ²	TOTAL	59 min.
<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>																							
a. Cable insulation	948 lb	59.3																							
b. Lube oil		0																							
c. Other		0																							
d. Transient		0																							
AREA = 60 ft ²	TOTAL	59 min.																							

TABLE 9A-31
FIRE HAZARD ANALYSIS TABULATION

ROOM: Cable Spreading Room

Fire Area: CD16

ROOM NO. 5202	BLDG. Auxiliary/Control	ELEV. 77 to 101 ft.	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH			Photoelectric	Fire H 0 1LHR400, 1IHR400 2
SHUTDOWN DIVISION I & II	SAFE SHUTDOWN EQUIPMENT AND CABLE: Power, instrumentation and control cable for both safe shutdown divisions.		Ionization	Preaction sprinkler Portable extinguisher
			EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hour
			North	
			East	
			South	
			West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	
	None. The cable spreading room contains power instrumentation and control cabling for both safe shutdown divisions. Alternate shutdown is accomplished from the remote shutdown panel and local equipment operating areas if both divisions of cable in this area are damaged, in accordance with III.G.3 if Appendix R. Transfer switches located at the remote shutdown panel (room 3576) allow one train of safe shutdown equipment to be isolated from the control building. Spurious actuations have been analyzed and will not prevent safe shutdown using the RSF.		Ceiling:	
			Doors and Hatches:	
			North wall: 3 hour rated door	
			South wall: 3 hour rated door (two)	
			East wall: 3 hour rated door (four) to elect shafts and (one) to corridor	
			Reference Drawings:	
			Elec. Drawings - E-1652 E-1662	
			Fire Drawings - Figure 9.5-2 Figure 9.5-9	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	182,112 lbs 119
			b. Lube oil	0
			c. Other	0
			d. Transient	0
	DEVIATION REQUEST: None		AREA = 5760 ft ²	TOTAL 119 min

TABLE 9A-32

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD17, Cable Chase D

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division I safe shutdown cable has III.G.2.a separation and will be used for safe shutdown.

Total BTU Combustible: 1.48×10^8

Total Floor Area: 1130 ft^2

Average BTU/ ft^2 : 127,294

Average Equivalent Fire Severity: 96 min.

Automatic Suppression Coverage: Full

Automatic Detection Coverage: Full

TABLE 9A-32

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Tray Area		FIRE AREA: CD 17	
ROOM NO.	5203	BLDG.	Aux/Control
			ELEV. 77
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		
	Division II Cable Trays.		
FIRE DETECTION TYPE		FIRE SUPPRESSION TYPE	
Heat actuated Ionization (Detectors located in Zone 5531)		H ₂ O hose 1LKR404 Portable extinguisher Auto preaction sprinkler	
EMERG. LIGHTS			
No			
CONSTRUCTION:		FIRE RATING	
<u>Walls:</u>		3 hour	
North			
East			
South			
West			
<u>Floor:</u>			
<u>Ceiling:</u>		None (open to 5323)	
<u>Doors And Hatches:</u>		4 hour	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Redundant Division I cable has 1 I.G.2.a separation and will be used for shutdown. The sprinkler system is installed to reduce the hazard due to the vertical cable tray concentrations.			
<u>Reference Drawings</u>			
<u>Elec. Drawings</u>		E-1662	
<u>Fire Drawings</u>		Figures 9.5-2 and 9.5-9	
<u>COMBUSTIBLES:</u>			
<u>MATERIAL:</u>	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	
a. PA cable/FRP		0	
b. Cable insulation	3,090 lbs	190	
c. Lube oil		0	
d. Transient/Other		0	
AREA =	61 ft ²	TOTAL	190 min.
DEVIATION REQUEST:			
None			

TABLE 9A-32

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chases		FIRE AREA: CD 17																	
ROOM NO. 5323	BLDG. Aux/Diesel	ELEV. 102																	
MECH SHUTDOWN DIVISION II	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division II Tray and conduit.	FIRE DETECTION TYPE Heat actuated Ionization (Detectors located in room 5531)	FIRE SUPPRESSION TYPE H ₂ O hose 1DHR401 Portable extinguisher Auto preaction sprinkler																
		EMERG. LIGHTS No																	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable, which has I I.G.2.a separation, will be used for shutdown. The sprinkler system is installed to reduce the hazard due to vertical cable tray concentrations.		CONSTRUCTION:	FIRE RATING																
		<u>Walls:</u> North East South West <u>Floor:</u> <u>Ceiling:</u> <u>Doors And Hatches:</u>	3 hour Unrated (grating) Unrated (grating) 3 hour																
		See note under effects of fire.																	
		Reference Drawings																	
		Elec. Drawings	E-1663-1																
		Fire Drawings	Figure 9.5-3																
DEVIATION REQUEST: None		COMBUSTIBLES:																	
		<table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN)</th> </tr> </thead> <tbody> <tr> <td>a. PA cable/FRP</td> <td></td> <td>0</td> </tr> <tr> <td>b. Cable insulation</td> <td>2,449 lbs</td> <td>151</td> </tr> <tr> <td>c. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient/Other</td> <td></td> <td>0</td> </tr> <tr> <td>AREA =</td> <td>61 ft²</td> <td>TOTAL 151 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	a. PA cable/FRP		0	b. Cable insulation	2,449 lbs	151	c. Lube oil		0	d. Transient/Other		0	AREA =
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)																	
a. PA cable/FRP		0																	
b. Cable insulation	2,449 lbs	151																	
c. Lube oil		0																	
d. Transient/Other		0																	
AREA =	61 ft ²	TOTAL 151 min.																	

TABLE 9A-32

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chases		FIRE AREA: CD 17		
ROOM NO. 5331	BLDG.	Aux/Diesel	ELEV. 102	
MECH SHUTDOWN DIVISION II	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division II tray and conduit.	FIRE DETECTION TYPE Heat actuated Ionization (Detectors located in room 5531)		
		FIRE SUPPRESSION TYPE H ₂ O hoses 1BHR401 & 1QHR400 Portable extinguisher Auto preaction sprinkler		
		EMERG. LIGHTS No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable has I I.G.2.a separation and would be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		CONSTRUCTION:		
		FIRE RATING 3 hour		
		Walls: North East South West		
		Floor: Unrated (grating)		
		Ceiling: Unrated (grating)		
		Doors And Hatches: 3 hour		
		Reference Drawings		
		Elec. Drawings E-1683-1		
		Fire Drawings Figure 9.5-3		
		COMBUSTIBLES:		
		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
		a. PA cable/FRP		0
		b. Cable insulation	381 lbs	26
		c. Lube oil		0
		d. Transient/Other		0
DEVIATION REQUEST: None		AREA =	55 ft ²	TOTAL 26 min.

TABLE 9A-32

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chases		FIRE AREA: CD 17	
ROOM NO.	5405	BLDG.	Aux/Diesel
		ELEV.	124
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Cable tray and conduit (Ch. D).	FIRE DETECTION TYPE	
		Heat actuated Ionization (in 5531)	
		EMERG. LIGHTS	
II		No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable, which has I I I.G.2.a separation, would be used for shutdown. Note: Detection, suppression, construction, and combustibles are per room. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		CONSTRUCTION:	
		Walls:	
		North	
		East	
		South	
		West	
		Floor:	
		Open to 5323	
		Ceiling:	
		Open to 5531	
		Doors And Hatches:	
		3 hour	
		Reference Drawings	
		Elec. Drawings	
		E-1664-1	
		Fire Drawings	
		Figures 9.5-4 & 9.5-9	
		COMBUSTIBLES:	
		MATERIAL:	
		QUANTITY	EQUIV. FIRE SEVERITY (MIN)
		a. PA cable/FRP	0
		b. Cable insulation	1,460 lbs
		c. Lube oil	0
		d. Transient/Other	0
		AREA =	61 ft ²
		TOTAL	90 min.
DEVIATION REQUEST:			
None			

TABLE 9A-32

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Chases		FIRE AREA: CD 17			
ROOM NO.	5419	BLDG.	Aux/Diesel	ELEV.	130
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:				FIRE DETECTION TYPE
	Cable Tray and Conduit (Ch. D)				Heat actuated Ionization (in 5531)
II					EMERG. LIGHTS
					No
					CONSTRUCTION:
					Walls:
					North
					East
					South
					West
					FIRE RATING
					3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:					
None. Redundant Division I cable which has I I I.G.2.a separation will be used for shutdown.					
The auto suppression system is installed to reduce the hazard due to vertical cable concentration.					
					Reference Drawings
					Elec. Drawings
					E-1685-1
					Fire Drawings
					Figure 9.5-4
					COMBUSTIBLES:
					MATERIAL:
					QUANTITY
					EQUIV. FIRE SEVERITY (MIN)
					a. PA cable/FRP
					0
					b. Cable insulation
					272 lbs
					c. Lube oil
					0
					d. Transient/Other
					0
DEVIATION REQUEST:					
None					
					AREA =
					55 ft ²
					TOTAL
					19 min.

TABLE 9A-32
FIRE HAZARD ANALYSIS TABULATION

ROOM: Electrical Cable Chase

Fire Area: CD17

ROOM NO. 5531		BLDG. Auxiliary/Diesel	ELEV. 150	FIRE DETECTION TYPE: Ionization	FIRE SUPPRESSION TYPE: Auto preaction sprinkler
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Heat actuated	H ₂ O hose 1THR400
	Cable tray and conduit (Ch. D)			EMERG. LIGHTS: Yes	Portable Ext.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable, which has III.G.2.a separation, would be used for shutdown.				CONSTRUCTION:	
				FIRE RATING:	
				Walls: 3 hour	
				North East South West	
				Floor: 3 hour (except ends)	
				Ceiling: 3 hour	
				Doors and Hatches: 3 hour	
				Floor is open to vertical electrical shaft at each end.	
				Reference Drawings:	
				Elec. Drawings - E-1665-1, 1676-1, 1686-1	
				Fire Drawings - Fig. 9.5-5 and 9.5-10	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	21,881 lbs 98
				b. Lube oil	0
				c. Other	0
				d. Transient	0
DEVIATION REQUEST: None				AREA = 837 ft ²	TOTAL 98 min.

TABLE 9A-33

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD18, Cable Chase B

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division I equipment cable has III.G.2.a separation and will be used for safe shutdown.

Total BTU Combustible: 1.48×10^8

Total Floor Area: 1130 ft^2

Average BTU/ft²: 127,924

Average Equivalent Fire Severity: 96 min.

Automatic Suppression Coverage: Full

Automatic Detection Coverage: Full

TABLE 9A-33

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Tray Area		FIRE AREA: CD 18	
ROOM NO.	5204	BLDG.	Aux/Control ELEV. 77
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE
	Division II Cable Trays		Heat actuated Ionization (Detectors located in Room 5532)
II			FIRE SUPPRESSION TYPE
		EMERG. LIGHTS	H ₂ O hose 1LHR400 Portable extinguisher Auto preaction sprinkler
		No	
		CONSTRUCTION:	FIRE RATING
		Walls:	3 hour
		North	
		East	
		South	
		West	
		Floor:	
		Ceiling:	None (open to 5324)
		Doors And Hatches:	3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Reference Drawings	
None. Redundant Division I cable has I I I.G.2.a separation and will be used for shutdown.		Elec. Drawings	E-1662
The sprinkler system is installed to reduce the hazard due to the vertical cable tray concentration.		Fire Drawings	Figures 9.5-2 & 9.5-9
		COMBUSTIBLES:	
		MATERIAL:	QUANTITY EQUIV. FIRE SEVERITY (MIN)
		a. PA cable/FRP	0
		b. Cable Insulation	3,090 lbs 190
		c. Lube oil	0
		d. Transient/Other	0
DEVIATION REQUEST:		AREA =	61 ft ² TOTAL 190 min.
None			

TABLE 9A-33

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chase		FIRE AREA: CD 18																			
ROOM NO. 5324	BLDG. Aux/Diesel	ELEV. 102																			
MECH SHUTDOWN DIVISION II	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division II tray and conduit	FIRE DETECTION TYPE Heat actuated Ionization (detectors located in Room 5532)	FIRE SUPPRESSION TYPE H ₂ O hose 1DHR401 Portable extinguisher Auto preaction sprinkler																		
		EMERG. LIGHTS No																			
		EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable, which has I I I.G.2.a separation, will be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		CONSTRUCTION: <u>Walls:</u> North East South West <u>Floor:</u> Unrated (grating) <u>Ceiling:</u> Unrated (grating) <u>Doors And Hatches:</u> 3 hour See note under EFFECTS OF FIRE <u>Reference Drawings</u> <u>Elec. Drawings</u> E-1663-1 <u>Fire Drawings</u> Figure 9.5-3	FIRE RATING 3 hour																
DEVIATION REQUEST: None		COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN)</th> </tr> </thead> <tbody> <tr> <td>a. PA cable/FRP</td> <td></td> <td>0</td> </tr> <tr> <td>b. Cable insulation</td> <td>2,449 lbs</td> <td>151</td> </tr> <tr> <td>c. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient/Other</td> <td></td> <td>0</td> </tr> <tr> <td>AREA =</td> <td>61 ft²</td> <td>TOTAL 151 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	a. PA cable/FRP		0	b. Cable insulation	2,449 lbs	151	c. Lube oil		0	d. Transient/Other		0	AREA =	61 ft ²	TOTAL 151 min.
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)																			
a. PA cable/FRP		0																			
b. Cable insulation	2,449 lbs	151																			
c. Lube oil		0																			
d. Transient/Other		0																			
AREA =	61 ft ²	TOTAL 151 min.																			

TABLE 9A-33

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chase		FIRE AREA: CD 18		
ROOM NO. 5332	BLDG. Aux/Diesel	ELEV. 102		
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE	
	Division II tray and conduit	Heat actuated Ionization (detectors located in Room 5532)	H ₂ O hoses 1BHR401 & 1QHR400 Portable extinguisher Auto preaction sprinkler	
II		EMERG. LIGHTS		
		No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		CONSTRUCTION:	FIRE RATING	
		Walls:	3 hour	
None. Redundant Division I cable has I I I.G.2.a separation and would be used for shutdown.		North		
		East		
The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		South		
		West		
		Floor:	Unrated (grating)	
		Ceiling:	Unrated (grating)	
		Doors And Hatches:	3 hour	
		See note under EFFECTS OF FIRE		
		Reference Drawings		
		Elec. Drawings	E-1683-1	
		Fire Drawings	Figure 9.5-3	
		COMBUSTIBLES:		
DEVIATION REQUEST:		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
		a. PA cable/FRP		0
None		b. Cable insulation	381 lbs	26
		c. Lube oil		0
		d. Transient/Other		0
		AREA =	55 ft ²	TOTAL 26 min.

TABLE 9A-33

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chases		FIRE AREA: CD 18																			
ROOM NO. 5406	BLDG.	Aux/Diesel Area	ELEV. 124																		
MECH SHUTDOWN DIVISION II	SAFE SHUTDOWN EQUIPMENT AND CABLE: Cable Tray and Conduit (CH. B)		FIRE DETECTION TYPE Heat actuated Ionization (in 5532) EMERG. LIGHTS No																		
			FIRE SUPPRESSION TYPE H ₂ O hose 1GHR401 Portable extinguisher Auto preaction sprinkler																		
			CONSTRUCTION: <u>Walls:</u> North East South West <u>Floor:</u> Open to 5324 <u>Ceiling:</u> Open to 5532 <u>Doors And Hatches:</u> 3 hour See note under EFFECTS OF FIRE																		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable, which has I I I.G.2.a separation, would be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		FIRE RATING 3 hour <u>Reference Drawings</u> <u>Elec. Drawings</u> E-1664-1 <u>Fire Drawings</u> Figures 9.5-4 and 9.5-9																			
DEVIATION REQUEST: None		COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN)</th> </tr> </thead> <tbody> <tr> <td>a. PA cable/FRP</td> <td></td> <td>0</td> </tr> <tr> <td>b. Cable insulation</td> <td>1,460 lbs</td> <td>90</td> </tr> <tr> <td>c. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient/Other</td> <td></td> <td>0</td> </tr> <tr> <td>AREA =</td> <td>61 ft²</td> <td>TOTAL 90 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	a. PA cable/FRP		0	b. Cable insulation	1,460 lbs	90	c. Lube oil		0	d. Transient/Other		0	AREA =	61 ft ²	TOTAL 90 min.
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)																			
a. PA cable/FRP		0																			
b. Cable insulation	1,460 lbs	90																			
c. Lube oil		0																			
d. Transient/Other		0																			
AREA =	61 ft ²	TOTAL 90 min.																			

TABLE 9A-33

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Chases		FIRE AREA: CD 18					
ROOM NO.	5420	BLDG.	Aux/Diesel Area	ELEV.	130		
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Cable Tray and Conduit (CH. B)				FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE	
					Heat actuated Ionization (in 5531/5532)		H ₂ O hose 1GHR401 Portable extinguisher Auto preaction sprinkler
II					EMERG. LIGHTS	FIRE RATING	
					No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:					CONSTRUCTION:	3 hour	
					Walls:		
None. Redundant Division I cable which has I I I.G.2.a separation will be used for shutdown.					North		
					East		
The auto suppression system is installed to reduce the hazard due to vertical cable concentration.					South		
					West		
					Floor:	Open to 5332	
					Ceiling:	Open to 5532	
					Doors And Hatches:	3 hour	
					Reference Drawings		
					Elec. Drawings	E-1685-1	
					Fire Drawings	Figure 9.5-4	
DEVIATION REQUEST:					COMBUSTIBLES:		
None					MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
					a. PA cable/FRP		0
					b. Cable insulation	272 lbs	19
					c. Lube oil		0
					d. Transient/Other		0
					AREA =	55 ft ²	TOTAL

TABLE 9A-33

ROOM: Electrical Cable Chase

Fire Area: CD18

ROOM NO. 5532		BLDG. Auxiliary/Diesel	ELEV. 150	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Cable tray and conduit (Ch. B)			Ionization		H ₂ O hose 1THR400 Portable extinguisher Auto preaction sprinkler	
				Heat actuated			
II				EMERG. LIGHTS:			
				Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable, which has III.G.2.a separation, would be used for shutdown.				CONSTRUCTION:		FIRE RATING:	
				<u>Walls:</u>			
				North		3 hour	
				East			
				South			
				West			
				<u>Floor:</u>		3 hour (except ends)	
				<u>Ceiling:</u>		3 hour	
				<u>Doors and Hatches:</u>		3 hour	
				Floor is open to vertical electrical shaft at each end.			
				<u>Reference Drawings:</u>			
				Electric Drawings - E-1665-1, -1676-1 & -1686-1 Fire Drawings - Fig. 9.5-5 & 9.5-10			
				COMBUSTIBLES:		EQUIV. FIRE	
				<u>MATERIAL:</u>		<u>QUANTITY</u>	
						<u>SEVERITY (MIN.)</u>	
				a. Cable insulation		21,881 lb 98	
				b. Lube oil		0	
				c. Other		0	
				d. Transient		0	
DEVIATION REQUEST: None				AREA = 837 ft ²		TOTAL 98 min.	

TABLE 9A-34

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD19, Cable Chase C

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division II equipment cable has III.G.2.a separation and will be used for safe shutdown.

Total BTU Combustible: 1.48×10^8

Total Floor Area: 1130 ft^2

Average BTU/ ft^2 : 127,924

Average Equivalent Fire Severity: 96 min.

Automatic Suppression Coverage: Full

Automatic Detection Coverage: Full

TABLE 9A-34

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Tray Area		FIRE AREA: CD 19	
ROOM NO.	5205	BLDG.	Aux/Control ELEV. 77
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE
	Division I Cable Trays and Conduit		Heat actuated Ionization (Detectors located in Room 5533)
			FIRE SUPPRESSION TYPE
			H ₂ O hose 1LHR404 Portable extinguisher Auto preaction sprinkler
			EMERG. LIGHTS
			No
			CONSTRUCTION:
			Walls:
			North
			East
			South
			West
			Floor:
			3 hour
			Ceiling:
			None (open to 5325)
			Doors And Hatches:
			3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Reference Drawings
None. Redundant Division II cable has I.I.G.2.a separation and will be used for shutdown.			Elec. Drawings
The sprinkler system is installed to reduce the hazard due to the vertical cable tray concentrations.			Fire Drawings
			E-1662-1
			Figures 9.5-2 & 9.5-9
			COMBUSTIBLES:
			MATERIAL:
			QUANTITY
			EQUIV. FIRE SEVERITY (MIN)
			a. PA cable/FRP
			0
			b. Cable insulation
			3,090 lbs
			190
			c. Lube oil
			0
			d. Transient/Other
			0
DEVIATION REQUEST:			AREA =
None			61 ft ²
			TOTAL
			190 min.

TABLE 9A-34

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chase		FIRE AREA: CD 19	
ROOM NO. 5325	BLDG. Aux/Diesel	ELEV. 102	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I tray and conduit	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE
		Heat actuated Ionization (Detectors located in Room 5533)	H ₂ O hose 1DHR401 Portable extinguisher Auto preaction sprinkler
		EMERG. LIGHTS	
		No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II cable, which has I I I.G.2.a separation, will be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		CONSTRUCTION:	FIRE RATING
		Walls:	3 hour
		North	
		East	
		South	
		West	
		Floor:	Unrated (grating)
		Ceiling:	Unrated (grating)
		Doors And Hatches:	3 hour
		See note under EFFECTS OF FIRE	
Reference Drawings			
Elec. Drawings		E-1663-1	
Fire Drawings		Figure 9.5-3	
COMBUSTIBLES:			
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	
a. PA cable/FRP		0	
b. Cable insulation	2,449 lbs	151	
c. Lube oil		0	
d. Transient/Other		0	
AREA =	61 ft ²	TOTAL	151 min.
DEVIATION REQUEST: None			

TABLE 9A-34

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chase		FIRE AREA: CD 19																			
ROOM NO. 5333	BLDG. Aux/Diesel	ELEV. 102																			
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I tray and conduit	FIRE DETECTION TYPE Heat actuated Ionization (Detectors located in Room 5533)	FIRE SUPPRESSION TYPE H ₂ O hoses 1BHR401 & 1QHR400 Portable extinguisher Auto preaction sprinkler																		
		EMERG. LIGHTS No																			
		CONSTRUCTION: <u>Walls:</u> North East South West <u>Floor:</u> <u>Ceiling:</u> <u>Doors And Hatches:</u>	FIRE RATING 3 hour Unrated (grating) Unrated (grating) 3 hour																		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II cable has ILL.G.2.a separation and would be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		<u>Reference Drawings</u> <u>Elec. Drawings</u> E-1683-1 <u>Fire Drawings</u> Figure 9.5-3 COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN)</th> </tr> </thead> <tbody> <tr> <td>a. PA cable/FRP</td> <td></td> <td>0</td> </tr> <tr> <td>b. Cable insulation</td> <td>381 lbs</td> <td>26</td> </tr> <tr> <td>c. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient/Other</td> <td></td> <td>0</td> </tr> <tr> <td>AREA =</td> <td>55 ft²</td> <td>TOTAL 26 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	a. PA cable/FRP		0	b. Cable insulation	381 lbs	26	c. Lube oil		0	d. Transient/Other		0	AREA =	55 ft ²	TOTAL 26 min.
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)																			
a. PA cable/FRP		0																			
b. Cable insulation	381 lbs	26																			
c. Lube oil		0																			
d. Transient/Other		0																			
AREA =	55 ft ²	TOTAL 26 min.																			
DEVIATION REQUEST: None																					

TABLE 9A-34

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chase		FIRE AREA: CD 19	
ROOM NO.	5407	BLDG.	Aux/Diesel
		ELEV.	124
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Cable tray and conduit (Ch. C)	FIRE DETECTION TYPE	
		Heat actuated Ionization (in 5533)	
		EMERG. LIGHTS	
		No	
		FIRE SUPPRESSION TYPE	
		H ₂ O hose 1HHR401 Portable extinguisher Auto preaction sprinkler	
		CONSTRUCTION:	
		Walls:	
		North	
		East	
		South	
		West	
		Floor:	
		Open to 5325	
		Ceiling:	
		Open to 5533	
		Doors And Hatches:	
		3 hour	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Reference Drawings	
None. Redundant Division II cable, which has I I I.G.2.a separation, would be used for shutdown.		Elec. Drawings	
The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		E-1664-1	
		Fire Drawings	
		Figures 9.5-4 & 9.5-9	
		COMBUSTIBLES:	
		MATERIAL:	
		QUANTITY	EQUIV. FIRE SEVERITY (MIN)
		a. PA cable/FRP	0
		b. Cable insulation	1,460 lbs
		c. Lube oil	0
		d. Transient/Other	0
DEVIATION REQUEST:		AREA =	61 ft ²
None		TOTAL	90 min.

TABLE 9A-34

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Chases		FIRE AREA: CD 19			
ROOM NO.	5421	BLDG.	Aux/Diesel Area	ELEV.	130
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Cable tray and conduit (Ch. C)			FIRE DETECTION TYPE	
				Heat actuated Ionization (in 5533)	
				EMERG. LIGHTS	
				No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I I cable which has I I I.G.2.a separation will be used for shutdown. The auto suppression system is installed to reduce the hazard due to vertical cable concentrations.				FIRE SUPPRESSION TYPE	
				H ₂ O hose 1GHR401 Portable extinguisher Auto preaction sprinkler	
				CONSTRUCTION:	
				Walls:	
				North	
				East	
				South	
				West	
				Floor:	
				Open to 5333	
Ceiling:					
Open to 5533					
Doors And Hatches:					
3 hour					
				Reference Drawings	
				Elec. Drawings	
				E-1685-1	
				Fire Drawings	
				Figure 9.5-4	
DEVIATION REQUEST: None				COMBUSTIBLES:	
				MATERIAL:	
				QUANTITY	
				EQUIV. FIRE SEVERITY (MIN)	
				a. PA cable/FRP	
				0	
b. Cable insulation					
272 lbs					
c. Lube oil					
0					
d. Transient/Other					
0					
AREA =					
55 ft ²					
TOTAL					
19 min.					

TABLE 9A-34 (Cont)

ROOM: Electrical Cable Chase

Fire Area: CD19

ROOM NO. 5533		BLDG. Auxiliary/Diesel		ELEV. 150		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE:				Ionization		H ₂ O hose 1THR400 Portable extinguisher Auto preaction sprinkler		
	Cable tray and conduit (Ch. C)				Heat actuated				
					EMERG. LIGHTS:				
				Yes					
				CONSTRUCTION:		FIRE RATING:			
				<u>Walls:</u>					
				North					
				East					
				South					
				West					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II cable, which has III.G.2.a separation, would be used for shutdown.				<u>Floor:</u>		3 hour (except ends)			
				<u>Ceiling:</u>		3 hour			
				<u>Doors and Hatches:</u>		3 hour			
				Floor is open to vertical electrical shaft at each end.					
				<u>Reference Drawings:</u>					
				Electrical Drawings - E-1665-1, 1676-1 & 1686-1					
				Fire Drawings - Fig. 9.5-5 & 9.5-10					
				COMBUSTIBLES:		EQUIV. FIRE			
				<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
				a. Cable insulation		21,881 lb		98	
				b. Lube oil				0	
				c. Other				0	
				d. Transient				0	
DEVIATION REQUEST: None				AREA = 837 ft ²		TOTAL		98 min.	

TABLE 9A-35

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD20, Cable Chase A

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division II equipment cable has III.G.2.a separation and will be used for safe shutdown.

Total BTU Combustible: 1.48×10^8

Total Floor Area: 1130 ft^2

Average BTU/ft²: 127,294

Average Equivalent Fire Severity: 96 min.

Automatic Suppression Coverage: Full

Automatic Detection Coverage: Full

FIRE HAZARDS ANALYSIS TABULATION

ROOM NO.	5206	BLDG.	Aux/Control	ELEV.	77
----------	------	-------	-------------	-------	----

Division I Cable Trays

No

H₂O hose 1LHR400
Portable extinguisher
Auto preaction sprinkler

3 hour

West

3 hour

None (5326)

3 hour

E-1662-1

Figures 9.5-2 & 9.5-9

EQUIV. FIRE SEVERITY (MIN)

0

3,090 lbs

190

Q

C

TOTAL

190 min.

None

TABLE 9A-35

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chases		FIRE AREA: CD 20	
ROOM NO. 5326	BLDG. Aux/Diesel	ELEV. 102	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I tray and conduit	FIRE DETECTION TYPE Heat actuated Ionization (Detector located in Room 5534)	FIRE SUPPRESSION TYPE H ₂ O hose 1DHR401 Portable extinguisher Auto preaction sprinkler
		EMERG. LIGHTS No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I I cable, which has I I I.G.2.a separation, will be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		CONSTRUCTION:	FIRE RATING
		Walls:	3 hour
		North	
		East	
		South	
		West	
		Floor:	Unrated (grating)
		Ceiling:	Unrated (grating)
		Doors And Hatches:	3 hour
		See note under EFFECTS OF FIRE	
		Reference Drawings	
		Elec. Drawings	E-1663-1
		Fire Drawings	Figure 9.5-3
		COMBUSTIBLES:	
		MATERIAL:	QUANTITY
a. PA cable/FRP		0	
b. Cable insulation	2,449 lbs	151	
c. Lube oil		0	
d. Transient/Other		0	
DEVIATION REQUEST: None		AREA = 61 ft ²	TOTAL 151 min.

TABLE 9A-35

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chase		FIRE AREA: CD 20																			
ROOM NO. 5334	BLDG. Aux/Diesel	ELEV. 102																			
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I tray and conduit	FIRE DETECTION TYPE Heat actuated Ionization (Detectors located in Room 5534)	FIRE SUPPRESSION TYPE H ₂ O hoses 1BHR401 & 1QHR400 Portable extinguisher Auto preaction sprinkler																		
		EMERG. LIGHTS No																			
		CONSTRUCTION: <u>Walls:</u> North East South West <u>Floor:</u> <u>Ceiling:</u> <u>Doors And Hatches:</u>	FIRE RATING 3 hour Unrated (grating) Unrated (grating) 3 hour																		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II cable has ILL.G.2.a separation and would be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		<u>Reference Drawings</u> <u>Elec. Drawings</u> E-1683-1 <u>Fire Drawings</u> Figure 9.5-3																			
DEVIATION REQUEST: None		COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN)</th> </tr> </thead> <tbody> <tr> <td>a. PA cable/FRP</td> <td></td> <td>0</td> </tr> <tr> <td>b. Cable Insulation</td> <td>381 lbs</td> <td>26</td> </tr> <tr> <td>c. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient/Other</td> <td></td> <td>0</td> </tr> <tr> <td>AREA =</td> <td>55 ft²</td> <td>TOTAL 26 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	a. PA cable/FRP		0	b. Cable Insulation	381 lbs	26	c. Lube oil		0	d. Transient/Other		0	AREA =	55 ft ²	TOTAL 26 min.
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)																			
a. PA cable/FRP		0																			
b. Cable Insulation	381 lbs	26																			
c. Lube oil		0																			
d. Transient/Other		0																			
AREA =	55 ft ²	TOTAL 26 min.																			

TABLE 9A-35

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Cable Chase		FIRE AREA: CD 20																			
ROOM NO. 5408	BLDG. Aux/Diesel	ELEV. 124																			
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Cable tray and conduit (Ch. A)	FIRE DETECTION TYPE Heat actuated Ionization (in 5535)	FIRE SUPPRESSION TYPE H ₂ O hose 1HHR401 Portable extinguisher Auto preaction sprinkler																		
		EMERG. LIGHTS No																			
		CONSTRUCTION: <u>Walls:</u> North East South West <u>Floor:</u> Open to 5326 <u>Ceiling:</u> Open to 5534 <u>Doors And Hatches:</u> 3 hour	FIRE RATING 3 hour																		
		<u>Reference Drawings</u> <u>Elec. Drawings</u> E-1664-1 <u>Fire Drawings</u> Figures 9.5-4 & 9.5-9																			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I I cable, which has I I I.G.2.a separation, would be used for shutdown. The auto sprinkler system is installed to reduce the hazard due to vertical cable concentrations.		COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN)</th> </tr> </thead> <tbody> <tr> <td>a. PA cable/FRP</td> <td></td> <td>0</td> </tr> <tr> <td>b. Cable insulation</td> <td>1,460 lbs</td> <td>90</td> </tr> <tr> <td>c. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient/Other</td> <td></td> <td>0</td> </tr> <tr> <td>AREA =</td> <td>61 ft²</td> <td>TOTAL 90 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	a. PA cable/FRP		0	b. Cable insulation	1,460 lbs	90	c. Lube oil		0	d. Transient/Other		0	AREA =	61 ft ²	TOTAL 90 min.
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)																			
a. PA cable/FRP		0																			
b. Cable insulation	1,460 lbs	90																			
c. Lube oil		0																			
d. Transient/Other		0																			
AREA =	61 ft ²	TOTAL 90 min.																			
DEVIATION REQUEST: None																					

TABLE 9A-35

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Electrical Chases		FIRE AREA: CD 20				
ROOM NO.	5422	BLDG.	Aux/Diesel Area	ELEV.	130	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE:				FIRE DETECTION TYPE	
	Cable Tray and Conduit (Ch. A)				Heat actuated Ionization (in 5534)	
					EMERG. LIGHTS	
				No	FIRE SUPPRESSION TYPE	
				CONSTRUCTION:	FIRE RATING	
				Walls:	3 hour	
				North		
				East		
				South		
				West		
				Floor:	Open to 5334	
				Ceiling:	Open to 5534	
				Doors And Hatches:	3 hour	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Reference Drawings		
None. Redundant Division I I cable which has I I I.G.2.a separation will be used for shutdown. The auto suppression system is installed to reduce the hazard due to vertical cable concentrations.				Elec. Drawings		
				E-1685-1		
				Fire Drawings		
				Figure 9.5-4		
				COMBUSTIBLES:		
				MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
				a. PA cable/FRP		0
				b. Cable Insulation	272 lbs	19
				c. Lube oil		0
				d. Transient/Other		0
DEVIATION REQUEST:				AREA =	55 ft ²	TOTAL 19 min.
None						

TABLE 9A-35 (Cont)

ROOM: Electrical Cable Chase

Fire Area: CD20

ROOM NO. 5534		BLDG. Auxiliary/Diesel	ELEV. 150	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Cable tray and conduit (Ch. A)	I	Ionization		H ₂ O hose 1THR400 Portable extinguisher Auto preaction sprinkler	
				Heat actuated			
				EMERG. LIGHTS:			
				Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II cable, which has III.G.2.a separation, would be used for safe shutdown.				CONSTRUCTION:		FIRE RATING:	
				Walls:		3 hour	
				North			
				East			
				South			
				West			
				Floor:		3 hour (except ends)	
				Ceiling:		3 hour	
				Doors and Hatches:		3 hour	
				Floor is open to vertical electrical shaft at each end.			
				Reference Drawings:			
				Electrical Drawings - E-1665-1, -1676-1 & -1686-1			
				Fire Drawings - Fig. 9.5-5 & 9.5-10			
				COMBUSTIBLES:		EQUIV. FIRE	
				MATERIAL:		QUANTITY	
						SEVERITY (MIN.)	
				a. Cable insulation		21,881 lb 98	
				b. Lube oil		0	
				c. Other		0	
				d. Transient		0	
DEVIATION REQUEST: None				AREA = 837 ft ²		TOTAL 98 min.	

TABLE 9A-36

TABLE DELETED

TABLE 9A-37

TABLE DELETED

TABLE 9A-38

TABLE DELETED

1 of 1

HCGS-UFSAR

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TABLE 9A-39

TABLE DELETED

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TABLE 9A-40
FIRE HAZARD ANALYSIS TABULATION

ROOM: Electrical Raceway

Fire Area: CD25

ROOM NO. 5216		BLDG: Auxiliary/Control	ELEV. 77	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			None	H O hose 11HR400 2	
SHUTDOWN DIVISION				EMERG. LIGHTS:	Portable Extinguisher	
				No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:	FIRE RATING:	
				Walls:	3 hour	
				North East South West		
				Floor:	3 hour	
				Ceiling:	3 hour	
				Doors and Hatches:	3 hour	
				Reference Drawings:		
				Electrical Drawings - E-1652-1		
				Fire Drawings - Figure 9.5-2 & 9.5-9		
				COMBUSTIBLES:	EQUIV. FIRE	
				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>
				a. Cable insulation	2416 lb	283.0
				b. Lube oil	0	
				c. Other (wood)	35.2 lb	7.9
				d. Transient		0
DEVIATION REQUEST: None				AREA - 32 ft ²	TOTAL 290.9 min.	

TABLE 9A-41
FIRE HAZARD ANALYSIS TABULATION

ROOM: Control Equipment Room		Fire Area: CD26	
ROOM NO. 5302		BLDG. Auxiliary/Control	ELEV. 102 to 116
MECH		Ionization	H ₂ O hose 1AHR401,
SHUTDOWN DIVISION		Photoelectric	1DHR401
I & II		EMERG. LIGHTS:	Portable extinguisher
		Yes	
		CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	3 hour
		East	3 hour
		South	3 hour
		West	1 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour
None. The control equipment room contains instrumentation and control cabling and panels for both safe shutdown divisions. There are no power cables in the room. Alternate shutdown is accomplished from the remote shutdown panel and local equipment operating areas if both divisions of cable in this area are damaged, in accordance with III.G.3 of Appendix R. Transfer switches located in the remote shutdown panel (Room 3576) allow one train of safe shutdown equipment to be isolated from the control building. Spurious actuations have been analyzed and will not prevent safe shutdown using the remote shutdown facilities. A fixed suppression system is not provided for this area since the safe shutdown cabling is capable of being isolated by transfer switches remote to the area; the fire severity in the room is low; both ionization and photoelectric fire detectors are provided in the area. Propagation of a fire in this area through the 1-hour rated wall adjacent to room 5303 will not jeopardize safe shutdown, since there is no safe shutdown equipment or cable in room 5303.		Ceiling:	3 hour
		Doors and Hatches:	See Fig. 9.5-3
		Reference Drawings:	
		Electrical Drawings - E-1653 & E-1663	
		Fire Drawings - Fig. 9.5-3 & 9.5-10	
DEVIATION REQUEST: Yes, Lack of fixed suppression system		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	QUANTITY SEVERITY (MIN.)
		a. Cable insulation	31,371 lb 21.5
		b. Lube oil	0
		c. Other	0
		d. Transient	0
		e. Plastic	44 lb 0.11
		AREA = 5469 ft ²	TOTAL 22 min

TABLE 9A-42

FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor and Vestibule

Fire Area: CD27

ROOM NO. 5303 & 5316 BLDG. Auxiliary/Control ELEV. 102		FIRE DETECTION TYPE: None		FIRE SUPPRESSION TYPE: H ₂ O hose 1DHR401 & 1SHR401 Portable extinguisher																			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	EMERG. LIGHTS:		CONSTRUCTION: FIRE RATING: <u>Walls:</u> See fire drawings North East South West <u>Floor:</u> See fire drawings <u>Ceiling:</u> See fire drawings <u>Doors and Hatches:</u> See fire drawings <u>Reference Drawings:</u> Electrical Drawings - E-1663-1 Fire Drawings - Fig. 9.5-3, 9.5-9 & 9.5-10																			
	None	Yes																					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None																							
DEVIATION REQUEST: None		<table border="1"> <thead> <tr> <th>COMBUSTIBLES: MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN.)</th> </tr> </thead> <tbody> <tr> <td>a. Cable insulation</td> <td></td> <td>0</td> </tr> <tr> <td>b. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>c. Other</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient</td> <td></td> <td>0</td> </tr> <tr> <td>AREA = NS</td> <td>TOTAL</td> <td>0</td> </tr> </tbody> </table>				COMBUSTIBLES: MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)	a. Cable insulation		0	b. Lube oil		0	c. Other		0	d. Transient		0	AREA = NS	TOTAL	0
COMBUSTIBLES: MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)																					
a. Cable insulation		0																					
b. Lube oil		0																					
c. Other		0																					
d. Transient		0																					
AREA = NS	TOTAL	0																					

TABLE 9A-43

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Diesel Gen Rm & HVAC Equip Rm		FIRE AREA: CD 28	
ROOM NO.	5304, 5208	BLDG.	Aux/Diesel
		ELEV.	102, 77
MECH SHUTDOWN DIVISION I I	SAFE SHUTDOWN EQUIPMENT AND CABLE:		
	standby diesel generator (SDG) 1DG400		
	SDG 1DG400 auxiliary equipment		
	Cables (Ch. D)		
	Panels (Ch. D)		
	Diesel Generator D Recirculation Fans 1DV412, 1DVE412, 1HV412, 1HVE412		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Fire anywhere in the zone would not prevent safe shutdown. Redundant Division I SDGs with ILL G.2.a separation would be used for shutdown.			
DEVIATION REQUEST:			
Yes, Penetration Seal Cold Side Temperature			
FIRE DETECTION TYPE		FIRE SUPPRESSION TYPE	
Infrared Heat actuated Ionization		CO ₂ total flooding system protects the SDG Room #5304 and the plenum chamber in HVAC Room #5208 only. Supplemental fire protection for room 5208 is provided by H ₂ O hose reels and portable extinguishers located in the adjacent corridor #5217.	
EMERG. LIGHTS			
CONSTRUCTION:		FIRE RATING	
Walls:		3 hour	
North			
East			
South			
West			
Floor:		3 hour	
Ceiling:		3 hour	
Doors And Hatches:		3 hour	
Reference Drawings			
Elec. Drawings		E-1673-1, E-1672-1	
Fire Drawings		Figures 9.5-2, 9.5-3, 9.5-9, and 9.5-10	
COMBUSTIBLES:			
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	
a. Cable insulation	2524 lbs	6.5	
b. Lube oil	1250 gal	95.4	
c. Other (fuel oil No. 2)	550 gal	42	
d. Transient (lube oil)	55 gal	4.2	
AREA =	2056 ft ²	TOTAL	148 min.

TABLE 9A-44

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Diesel Gen Rm & HVAC Equip Rm		FIRE AREA: CD 29	
ROOM NO.	5305, 5209	BLDG.	Aux/Diesel
		ELEV.	102, 77
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: standby diesel generator (SDG) 1BG400 SDG 1BG400 auxiliary equipment Cables (Ch. B) Panels (Ch. B) Diesel Generator B Recirculation Fans 1BV412, 1BVE412, 1FV412, 1FVE412 Channel B Conduit	FIRE DETECTION TYPE	
		Infrared Heat actuated Ionization	
11		EMERG. LIGHTS	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Fire anywhere in the zone would not prevent safe shutdown. Redundant Division I SDGs with 111. G.2.a separation would be used for shutdown.		FIRE SUPPRESSION TYPE	
		CO ₂ total flooding system protects the SDG Room #5305 and the plenum chamber in HVAC Room #5209 only. Supplemental fire protection for room 5209 is provided by H ₂ O hose reels and portable extinguishers located in the adjacent corridor #5217.	
		CONSTRUCTION:	
		Walls:	
		North	
		East	
		South	
		West	
		Floor:	
		3 hour	
		Ceiling:	
		3 hour	
		Doors And Hatches:	
		3 hour	
		Reference Drawings	
		Elec. Drawings	
		E-1673-1, E-1672-1	
		Fire Drawings	
		Figures 9.5-2, 9.5-3, 9.5-9, and 9.5-10	
		COMBUSTIBLES:	
		MATERIAL:	
		QUANTITY	
		EQUIV. FIRE SEVERITY (MIN)	
		a. Cable insulation	
		2524 lbs	
		b. Lube oil	
		1250 gal	
		c. Other (fuel oil No. 2)	
		550 gal	
		d. Transient (lube oil)	
		55 gal	
		AREA =	
		2865 ft ²	
		TOTAL	
		148 min.	
DEVIATION REQUEST:			
Yes, Penetration Seal Cold Side Temperature			

FIRE HAZARDS ANALYSIS TABULATION

ROOM NO.	5306, 5210	BLDG.		Aux/Diesel	ELEV.	102, 77	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: standby diesel generator (SDG) 1CG400 SDG 1CG400 auxiliary equipment Cables (Ch. C) Panels (Ch. C) Diesel Generator C Recirculation Fans 1CV412, 1CVE412, 1GV412, 1GVE412 Channel C Conduit						Infraired Heat actuated Ionization	CO ₂ total flooding system protects the SDG Room #5306 and the plenum chamber in HVAC Room #5210 only. Supplemental fire protection for room 5210 is provided by H ₂ O hose reels and portable extinguishers located in the adjacent corridor #5217.	
							EMERG. LIGHTS		
1							Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:							CONSTRUCTION:	FIRE RATING	
							Walls:	3 hour	
None. Fire anywhere in the zone would not prevent safe shutdown. Redundant Division II SDGs with III G.2.a separation would be used for shutdown.							North		
							East		
							South		
							West		
							Floor:	3 hour	
							Ceiling:	3 hour	
							Doors And Hatches:	3 hour	
							Reference Drawings		
							Elec. Drawings	E-1683-1, E-1682-1	
							Fire Drawings	Figures 9.5-2, 9.5-3, 9.5-9, and 9.5-10	
DEVIATION REQUEST:							COMBUSTIBLES:		
Yes, Penetration Seal Cold Side Temperature							MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
							a. Cable insulation	2609 lbs	6.7
							b. Lube oil	1250 gal	95.4
							c. Other (fuel oil No. 2)	550 gal	42
							d. Transient (lube oil)	55 gal	4.2
							AREA =	2865 ft ²	TOTAL

TABLE 9A-46

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Diesel Gen Rm & HVAC Equip Rm		FIRE AREA: CD 31	
ROOM NO.	5307, 5211	BLDG.	Aux/Diesel
		ELEV.	102, 77
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		
	standby diesel generator (SDG) 1AG400		
	SDG 1AG400 auxiliary equipment		
	Cables (Ch. A)		
	Panels (Ch. A)		
	Diesel Generator A Recirculation Fans 1AV412, 1AVE412, 1EV412, 1EVE412		
	Channel A Conduit		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Fire anywhere in the zone would not prevent safe shutdown. Redundant Division 11 SDGs with 111 G.2.a separation would be used for shutdown.			
DEVIATION REQUEST:			
Yes, Penetration Seal Cold Side Temperature			
FIRE DETECTION TYPE		FIRE SUPPRESSION TYPE	
Infrared Heat actuated Ionization		CO ₂ total flooding system protects the SDG Room #5307 and the plenum chamber in HVAC Room #5211 only. Supplemental fire protection for room 5211 is provided by H ₂ O hose reels and portable extinguishers located in the adjacent corridor #5217.	
EMERG. LIGHTS		FIRE RATING	
Yes		3 hour	
CONSTRUCTION:			
Walls:			
North			
East			
South			
West			
Floor:		3 hour	
Ceiling:		3 hour	
Doors And Hatches:		3 hour	
Reference Drawings			
Elec. Drawings		E-1683-1, E-1682-1	
Fire Drawings		Figures 9.5-2, 9.5-3, 9.5-9, and 9.5-10	
COMBUSTIBLES:			
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	
a. Cable insulation	2609 lbs	6.7	
b. Lube oil	1250 gal	95.4	
c. Other (fuel oil No. 2)	550 gal	42	
d. Transient (lube oil)	55 gal	4.2	
AREA =	2865 ft ²	TOTAL	148 min.

TABLE 9A-47

FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: CD32

ROOM NO. 5335		BLDG. Auxiliary/Control	ELEV. 102	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			None		H ₂ O hose 1AHR401 Portable extinguisher	
				EMERG. LIGHTS: Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:		FIRE RATING:	
				<u>Walls:</u> North East South West <u>Floor:</u> <u>Ceiling:</u> <u>Doors and Hatches:</u>		See fire drawings See fire drawings	
				Reference Drawings:			
				Electrical Drawings - E-1653 Fire Drawings - Fig. 9.5-3			
DEVIATION REQUEST: None				COMBUSTIBLES:		EQUIV. FIRE SEVERITY (MIN.)	
				<u>MATERIAL:</u> a. Cable insulation b. Lube oil c. Other d. Transient AREA = NS		<u>QUANTITY</u> TOTAL	
						0 min.	

TABLE 9A-48

FIRE HAZARD ANALYSIS TABULATION

ROOM: Electrical Raceway

Fire Area: CD33

ROOM NO. 5336	BLDG. Auxiliary/Control	ELEV. 102	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		None	H ₂ O hose 1AHR401 Portable extinguisher	
			EMERG. LIGHTS: No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None			CONSTRUCTION:	FIRE RATING:	
			Walls:	3 hour	
			North		
			East		
			South		
			West		
			Floor:	3 hour	
			Ceiling:	3 hour	
			Doors and Hatches:	3 hour	
			Reference Drawings:		
			Elec. Drawings - E-1653-1		
			Fire Drawings - Fig. 9.5-3		
			COMBUSTIBLES:		
			<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>
			a. Cable insulation	922 lbs	108
			b. Lube oil		0
			c. Other		0
			d. Transient		0
			AREA = 32 ft ²	TOTAL	108 min.
DEVIATION REQUEST: None					

TABLE 9A-49

FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: CD34

ROOM NO. 5402		BLDG. Auxiliary/Control		ELEV. 124		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None					None		H ₂ O hose 1RHR400 Portable extinguisher			
						EMERG. LIGHTS:					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None						Yes					
						CONSTRUCTION:		FIRE RATING:			
						<u>Walls:</u>					
						North		3 hour			
						East		2/3 hour			
						South		3 hour			
						West		2 hour			
						<u>Floor:</u>		3 hour			
						<u>Ceiling:</u>		3 hour			
						<u>Doors and Hatches:</u>		2/3 hour			
						<u>Reference Drawings:</u>					
						Electrical Drawings - E-1654-1					
						Fire Drawings - Fig. 9.5-4					
						COMBUSTIBLES:					
						<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>EQUIV. FIRE SEVERITY (MIN.)</u>	
						a. Cable insulation		0			
						b. Lube oil		0			
						c. Other		0			
						d. Transient		0			
DEVIATION REQUEST: None						AREA = NS		TOTAL		0 min.	

TABLE 9A-50
FIRE HAZARD ANALYSIS TABULATION

ROOM: Control Equipment Room Mezzanine		Fire Area: CD35	
ROOM NO. 5403 & 5449 BLDG. Auxiliary/Control ELEV. 117'-6"		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH		Ionization	CO ₂ auto total flooding
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Heat Actuated	H ₂ O hose 1RHR400 &
I & II	Division I & II cable trays and conduit required for safe shutdown from the main control room. Room 5449 contains only non-1E cable.	EMERG. LIGHTS: Yes	1HHR401 Portable Extinguishers Manual deluge
		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	
		North	3 hour
		East	3 hour
		South	3 hour (corridor)
		West	1 hour upper section 3 hour lower section
		<u>Floor:</u>	3 hour
		<u>Ceiling:</u>	*3 hour
		<u>Doors and Hatches:</u>	3 and 1 hour
		*Beams are not fireproofed	
		<u>Reference Drawings:</u>	
		Elec. Drawings - E-1654 and E-1664 Fire Drawings - Figure 9.5-4 and 9.5-9	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. Shutdown can be accomplished using Remote Shutdown Facilities which are separate from this area. Auto Suppression is provided. Room 5404, corridor, was analyzed along with 5403. The combination of 5403 and 5404 has three hour fire barriers on all sides.			
A manual water deluge system provides backup to the auto CO ₂ system.			
Due to interferences and congestion the beams are not fireproofed above 5403. since there are two fixed suppression systems, one automatic, this is adequate assurance the beams integrity will not be jeopardized. The wall separating 5449 from 5403 is open at the top, therefore 5449 is part of 5403.			
DEVIATION REQUEST: None			
AREA = 4,500 ft ²		TOTAL	79.52 min.

TABLE 9A-51
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: C036

ROOM NO. 5404		BLDG. Auxiliary/Control		ELEV. 120		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:		
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None					None		H.O. hose 1HHR401 2 Portable extinguisher		
						EMERG. LIGHTS: Yes				
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None					CONSTRUCTION:		FIRE RATING:		
<u>Walls:</u>										
North						3 hour				
East						1 hour				
South						3 hour				
West		3 hour								
		<u>Floor:</u>		1 hour						
		<u>Ceiling:</u>		3 hour						
		<u>Doors and Hatches:</u>		3/1 hour						
		<u>Reference Drawings:</u>								
		Electrical Drawings - E-1664								
		Fire Drawings - Fig. 9.5-4 & 9.5-9								
DEVIATION REQUEST: None					COMBUSTIBLES:		EQUIV. FIRE			
					<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
					a. Cable insulation		568 lb		4.5	
					b. Lube oil				0	
					c. Other				0	
d. Transient				0						
AREA = 469 ft ²		TOTAL		5 min						

TABLE 9A-52

TABLE NOT USED
(Refer to Table 9A-77)

TABLE NOT USED
(Refer to Table (9A-77))

TABLE 9A-54

TABLE NOT USED
(Refer to Table 9A-97)

TABLE 9A-55

TABLE NOT USED
(Refer to Table 9A-97)

TABLE 9A-56
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD41

ROOM NO. 5418		BLDG. Auxiliary Diesel Area		ELEV. 130																			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:																						
	None																						
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:																						
None					FIRE DETECTION TYPE: Photoelectric Ionization																		
					EMERG. LIGHTS: Yes																		
					FIRE SUPPRESSION TYPE: H ₂ O hose 1GHR401 Portable Extinguisher																		
					CONSTRUCTION: Walls: North East South West																		
					FIRE RATING: See fire drawings																		
					Floor: Unrated																		
					Ceiling: Unrated																		
					Doors and Hatches: See fire drawings																		
					Reference Drawings: Elec. Drawings - E-1685-1 Fire Drawings - Figures 9.5-4 and 9.5-10																		
					COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN.)</th> </tr> </thead> <tbody> <tr> <td>a. Cable insulation</td> <td></td> <td>0</td> </tr> <tr> <td>b. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>c. Other</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient</td> <td></td> <td>0</td> </tr> <tr> <td colspan="2">AREA =</td> <td>TOTAL 0</td> </tr> </tbody> </table>	MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)	a. Cable insulation		0	b. Lube oil		0	c. Other		0	d. Transient		0	AREA =		TOTAL 0
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)																					
a. Cable insulation		0																					
b. Lube oil		0																					
c. Other		0																					
d. Transient		0																					
AREA =		TOTAL 0																					
DEVIATION REQUEST: None																							

TABLE 9A-57

FIRE HAZARD ANALYSIS TABULATION

ROOM: Class 1E Inverter Room

Fire Area: CD42

ROOM NO. 5447		BLDG. Auxiliary/Control		ELEV. 124		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION		SAFE SHUTDOWN EQUIPMENT AND CABLE: II FRVS panel 1BC285 and 1DC285 Division II cable				Ionization		H ₂ O hose 1RHR400 Portable extinguisher	
						EMERG. LIGHTS:			
						Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cabling has III.G.2 separation and will be used for safe shutdown.		CONSTRUCTION:				FIRE RATING:			
		<u>Walls:</u>							
		North				3 hour			
		East				3 hour			
		South				2 hour/3 hour			
		West				3 hour			
		<u>Floor:</u>				3 hour			
		<u>Ceiling:</u>				3 hour			
		<u>Doors and Hatches:</u>							
		North:				3 hour			
South:				2 hour					
		<u>Reference Drawings:</u>							
		Electrical Drawings - E-1654-1							
		Fire Drawings - Fig. 9.5-4, 9.5-9 & 9.5-10							
		COMBUSTIBLES:							
		<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>EQUIV. FIRE SEVERITY (MIN.)</u>			
		a. Cable insulation				0			
b. Lube oil				0					
c. Other				0					
d. Transient				0					
DEVIATION REQUEST: None		AREA = NS		TOTAL		0 min.			

TABLE 9A-58

FIRE HAZARD ANALYSIS TABULATION

ROOM: 1E Inverter Room

Fire Area: CD43

ROOM NO. 5448		BLDG. Auxiliary/Control		ELEV. 124		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					Ionization Photoelectric		H ₂ O hose 1RHR400 Portable extinguisher	
	II	Division II, 1E, inverters 1BD481 and 1DD481 Security panel DBD-595				EMERG. LIGHTS: Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2 separation and will be used for safe shutdown.						CONSTRUCTION:		FIRE RATING:	
						<u>Walls:</u> North 3 hour East 3 hour South 2 hour West 3 hour <u>Floor:</u> 3 hour <u>Ceiling:</u> 3 hour <u>Doors and Hatches:</u> North 2 hour West 3 hour <u>Reference Drawings:</u> Electrical Drawings - E-1654-1 Fire Drawings - Fig. 9.5-4, 9.5-9, and 9.5-10			
DEVIATION REQUEST: None						COMBUSTIBLES:		EQUIV. FIRE SEVERITY (MIN.)	
						<u>MATERIAL:</u> a. Cable insulation 508 lb b. Lube oil c. Other d. Transient AREA = 423 ft ²		<u>QUANTITY</u> TOTAL	

TABLE 9A-59
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD44

ROOM NO. 5502	BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H ₂ O hose MHC301 Portable Extinguisher
I	Cable for MCR HVAC supply and exhaust		EMERG. LIGHTS:	
			Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None: Redundant Division II cable with III.G.2.a separation will be used for safe shutdown.		CONSTRUCTION:		FIRE RATING:
		<u>Walls:</u> North East South West		See Fire Drawings
		<u>Floor:</u>		3 hour
		<u>Ceiling:</u>		3 hour
		<u>Doors and Hatches:</u>		See fire drawings
		<u>Reference Drawings:</u> Elec. Drawings - E-2655-1 Fire Drawings - Figure 9.5-5 and 9.5-10		
DEVIATION REQUEST: None		COMBUSTIBLES:		EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>
		a. Cable insulation		0
		b. Lube oil		0
		c. Other		6.51
d. Transient		23.73		
		AREA = 158	TOTAL	30.24

TABLE 9A-60

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD 45, MCR Aux Rooms

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. There are no safe shutdown equipment or cable in this area.

Total BTU Combustible: 70,576,955

Total Floor Area: 3175 ft²

Average BTU/ft²: 22,229

Average Equivalent Fire Severity: 16.67 min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Partial

TABLE 9A-60
FIRE HAZARD ANALYSIS TABULATION

ROOM: Instruction Viewing Room

Fire Area: CD45

ROOM NO.	5503	BLDG.	Auxiliary/Control	ELEV.	137	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					Ionization	H ₂ O hose MHC301 Portable Extinguisher
	None					EMERG. LIGHTS:	
						Yes	
						CONSTRUCTION:	FIRE RATING:
						<u>Walls:</u>	See Fire Drawings
						North	
						East	
						South	
						West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:						<u>Floor:</u>	3 hour
None						<u>Ceiling:</u>	3 hour
						<u>Doors and Hatches:</u>	See Fire Drawings
						<u>Reference Drawings:</u>	
						Elec. Drawings - E-1655-1	
						Fire Drawings - Figure 9.5-5 and 9.5-10	
						COMBUSTIBLES:	EQUIV. FIRE
						<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
						a. Cable insulation	0
						b. Lube oil	0
						c. Other	17.04
						d. Transient	10.42
DEVIATION REQUEST: None						AREA = 360	TOTAL 27.46

TABLE 9A-60
FIRE HAZARD ANALYSIS TABULATION

ROOM: Men's toilet

Fire Area: CD45

ROOM NO. 5504	BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		None	H ₂ O hose MHC301 Portable Extinguisher
			EMERG. LIGHTS: No	
			CONSTRUCTION:	FIRE RATING:
			Walls:	See Figure 9.5-5
			North East South West	
			Floor:	3 hour
			Ceiling:	3 hour
			Doors and Hatches:	3 hour
			Reference Drawings:	
			Elec. Drawings - E-1655-1	
			Fire Drawings - Figure 9.5-5 and 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other (Terreon)	300 lb 22.93
			d. Transient	0
			AREA = 120.7 ft ²	TOTAL 22.93
			DEVIATION REQUEST: None	

TABLE 9A-60
FIRE HAZARD ANALYSIS TABULATION

ROOM: Briefing Area

Fire Area: CD45

ROOM NO. 5505	BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		None	H ₂ O hose MHC301 Portable Extinguisher
	None		EMERG. LIGHTS:	
			No	
			CONSTRUCTION:	FIRE RATING:
			Walls:	See Figure 9.5-5
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	3 hour
			Ceiling:	3 hour
None			Doors and Hatches:	3 hour
			Reference Drawings:	
			Elec. Drawings - E-1655-1	
			Fire Drawings - Figure 9.5-5 and 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other	47.97
			d. Transient	4.56
DEVIATION REQUEST: None			AREA = 329	TOTAL 52.53

TABLE 9A-60
FIRE HAZARD ANALYSIS TABULATION

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TABLE 9A-60
FIRE HAZARD ANALYSIS TABULATION

ROOM: Storage Room

Fire Area: CD45

ROOM NO. 5508	BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H ₂ O hose MHC301 Portable Extinguisher
	None		EMERG. LIGHTS:	
			No	
			CONSTRUCTION:	FIRE RATING:
			Walls:	See Figure 9.5-5
			North	
			East	
			South	
			West	
	EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Floor:	3 hour
			Ceiling:	3 hour
			Doors and Hatches:	See Figure 9.5-5
			Reference Drawings:	
	None		Elec. Drawings - E-1655-1	
			Fire Drawings - Figure 9.5-5 and 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE
			MATERIAL:	QUANTITY SEVERITY (MIN.)
			a. Cable insulation	0
			b. Lube oil	0
			c. Other (paper)	1.08
			d. Transient	25.86
	DEVIATION REQUEST: None		AREA = 87 ft ²	TOTAL 26.94

TABLE 9A-60

FIRE HAZARD ANALYSIS TABULATION

ROOM: Janitor Room

Fire Area: CD45

ROOM NO. 5514	BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose MHC301 Portable Extinguisher
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: MCR HVAC temperature elements		EMERG. LIGHTS: No	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II HVAC is used to cool MCR if Division I is affected. Redundant Division II has III.G.2.a separation.			CONSTRUCTION:	FIRE RATING:
			Walls: North East South West Floor: Ceiling: Doors and Hatches:	See Figure 9.5-5 3 hour 3 hour Unrated
			Reference Drawings:	
			Elec. Drawings - E-1655-1 Fire Drawings - Figure 9.5-5 and 9.5-10	
DEVIATION REQUEST: None			COMBUSTIBLES:	
			MATERIAL:	EQUIV. FIRE SEVERITY (MIN.)
			QUANTITY	
			a. Cable insulation	0
			b. Lube oil	0
			c. Other (paper)	100 lbs 12
			d. Transient	0
			AREA = 50 ft ²	TOTAL 12 min.

TABLE 9A-60

FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD45

ROOM NO. 5512		BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Ionization	H ₂ O hose MHC301 Portable Extinguisher
	None			EMERG. LIGHTS:	
				Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:	FIRE RATING:
				Walls:	See Figure 9.5-5
				North	
				East	
				South	
				West	
				Floor:	3 hour
				Ceiling:	3 hour
				Doors and Hatches:	See Figure 9.5-10
				Reference Drawings:	
Elec. Drawings - E-1655-1					
Fire Drawings - Figure 9.5-5 and 9.5-10					
COMBUSTIBLES:					
MATERIAL:		QUANTITY	EQUIV. FIRE SEVERITY (MIN.)		
a. Cable insulation			0		
b. Lube oil			0		
c. Other			0		
d. Transient			0		
AREA = NS		TOTAL	0		
DEVIATION REQUEST: None					

TABLE 9A-60

FIRE HAZARD ANALYSIS TABULATION

ROOM: Elevator Lobby

Fire Area: CD45

ROOM NO. 5513	BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose MHC301 Portable Extinguisher
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None		CONSTRUCTION: FIRE RATING:		
		<u>Walls:</u> See Figure 9.5-5 North East South West <u>Floor:</u> 3 hour <u>Ceiling:</u> 3 hour <u>Doors and Hatches:</u> See Figure 9.5-5 <u>Reference Drawings:</u> Elec. Drawings - E-1655-1 Fire Drawings - Figure 9.5-5 and 9.5-10		
DEVIATION REQUEST: None		COMBUSTIBLES:		
		<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>
		a. Cable insulation		0
		b. Lube oil		0
		c. Other		0
	d. Transient		0	
		AREA = NS	TOTAL	0 min.

TABLE 9A-60
FIRE HAZARD ANALYSIS TABULATION

ROOM: Computer Room

Fire Area: CD45

ROOM NO.	5515	BLDG.	Auxiliary/Control	ELEV.	137	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					Ionization	H ₂ O Hose MHC301 1HRT400 Portable Ext.
I and II	MCR HVAC humidity sensor transmitter GK-MT-9589A & B					EMERG. LIGHTS:	
						Yes	
						CONSTRUCTION:	FIRE RATING:
						Walls:	See Fire Drawings
						North East South West	
						Floor:	3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:						Ceiling:	Unrated
None. Humidity control is not required for safe shutdown.						Doors and Hatches:	Unrated
						Pressure tight door	
						Reference Drawings:	
						Elec. Drawings - E-1655-1 and E-1665-1	
						Fire Drawings - Fig.9.5-5 and 9.5-10	
						COMBUSTIBLES:	EQUIV. FIRE
						MATERIAL:	QUANTITY SEVERITY (MIN.)
						a. Cable insulation	5 lb 0.05
						b. Lube oil	0
						c. Other (paper)	300 lb 2.14
						d. Transient (paper)	100 lbs .71
						e. Plastic	479 lbs 8.53
						AREA = 842 ft ²	TOTAL 11.43 min.
DEVIATION REQUEST: None							

TABLE 9A-60

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Storage Room		FIRE AREA: CD45		
ROOM NO. 5520	BLDG. Aux/Control	ELEV. 137		
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE	
		Ionization	H ₂ O hose MHC301	
		EMERG. LIGHTS	Portable Ext.	
		Yes	Automatic wet sprinklers	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None		CONSTRUCTION:	FIRE RATING	
		Walls:	See Figure 9.5-5	
		North		
		East		
		South		
		West		
		Floor:	3 hour	
		Ceiling:	3 hour	
		Doors And Hatches:	1 hour	
		Reference Drawings		
		Elec. Drawings E-1655-2		
		Fire Drawings	Fig. 9.5-5 and 9.5-10	
		COMBUSTIBLES:		
		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
		a. Cable insulation		0
DEVIATION REQUEST: None		b. Lube oil		0
		c. Other (paper)	1300 lbs	57.8
		d. Transient		0
		AREA = 135 ft ²	TOTAL	58 min.

TABLE 9A-60
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD45

ROOM NO. 5521 BLDG. Auxiliary/Control ELEV. 137		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization	H ₂ O hose MHC301 Portable Ext. Automatic Sprinklers
	None	EMERG. LIGHTS:	
		No	
		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	See Figure 9.5-5
		North	
		East	
		South	
		West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		<u>Floor:</u>	3 hour
		<u>Ceiling:</u>	3 hour
None		<u>Doors and Hatches:</u>	See Figure 9.5-5
		<u>Reference Drawings:</u>	
		Elec. Drawings - E-1655-2	
		Fire Drawings - Fig.9.5-5 and 9.5-10	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	0
		b. Lube oil	0
		c. Other	0
		d. Transient	0
DEVIATION REQUEST: None		AREA = NS	TOTAL 0

TABLE 9A-60
FIRE HAZARDS ANALYSIS TABULATION

ROOM: Work Control Center		FIRE AREA: CD45	
ROOM NO.	5523/5522 BLDG.	Aux/Control	ELEV. 137
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		
	None		
		FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE
		Ionization	H ₂ O hose MHC301
			Automatic wet sprinklers
		EMERG. LIGHTS	
		No	
		CONSTRUCTION:	X. FIRE RATING
		Walls:	
		North	See Figure 9.5-5
		East	
		South	
		West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		A. Floor:	3 hour
None		B. Ceiling:	unrated
		C. Doors And Hatches:	unrated
		D. Reference	XI.
		A. Elec. Drawings	E-1655-2
		B. Fire Drawings	Fig. 9.5-5 and 9.5-10
		C. COMBUSTIBLES:	XII.
		A. MATERIAL:	XIII. QUANTITY
		XIV.a. Cable insulation	5 lbs .07
		XV.b. Lube oil	0
		XVI.c. Other (paper)	200 lbs 4.5
		XVII.d. Transient	0
DEVIATION REQUEST:		A. AREA = 604 ft ²	XVIII. 1. TOTAL 5 min
None			

TABLE 9A-61
FIRE HAZARDS ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD 46, Main Control Room

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. The Remote Shutdown Panel will be relied on for safe shutdown.

Total BTU Combustible: 40,809,216

Total Floor Area: 3355 ft²

Average BTU/ft²: 12,164

Average Equivalent Fire Severity: 9.12 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Full

TABLE 9A-61

FIRE HAZARDS ANALYSIS TABULATION SUMMARY

ROOM: Shift Supervisor's Office FIRE AREA: CD46 (MCR)

ROOM NO.	5509	BLDG.	Aux/Control	ELEV.	137	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None					Ionization	H ₂ O hose MHC301 Portable Extinguisher	
						EMERG. LIGHTS		
						Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None						CONSTRUCTION:	FIRE RATING	
						Walls:	See Figure 9.5-5	
						North		
						East		
						South		
						West		
						Floor:	3 hour	
						Ceiling:	3 hour	
						Doors And Hatches:	See Figure 9.5-5	
						Reference Drawings		
Elec. Drawings	E-1655-1							
Fire Drawings	Figure 9.5-5 and Figure 9.5-10							
COMBUSTIBLES:						EQUIV. FIRE SEVERITY		
MATERIAL:						QUANTITY	(MIN)	
a. Cable insulation – 27 cables @ 20' ea. (10 diff. types)							1.7	
b. Lube oil							0	
c. Other (carpet)							1.8	
. (Furnishings, various)							10.0	
d. Transient							0	
e. Plastic – Computer & Accessories						8.0 lb	0.24	
AREA = 515 ft ²						TOTAL	13.74	min
DEVIATION REQUEST:								
Yes, Lack of fixed suppression system								

TABLE 9A-61

FIRE HAZARDS ANALYSIS TABULATION SUMMARY

ROOM: Main control Room		FIRE AREA: CD 46 (MCR)	
ROOM NO. 5510	BLDG.	Auxiliary/Control	ELEV. 137
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		
I & II	Main Control Panels 10C651 Main Console 10C650 Vertical Board		
I & II	Division I and II Cable Control Instrumentation for all safe shutdown equipment		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None. The main control room panels with both safe shutdown divisions of instrumentation and controls. There are no power cables in the room. The safe shutdown redundant equipment and cabling do not meet the Appendix R, Section II.G.2, separation requirements and, therefore, alternate shutdown is provided. Transfer switches located at the remote shutdown panel (room 3576) allow one train of safe shutdown equipment to be isolated from the control building. A fire in the area would not prevent safe shutdown since shutdown Division II equipment at the RSP has III.G.2.a separation and would be used for both hot and cold shutdown. A fire in the area would have no effect on minimizing and controlling radioactive release to the environment. No fixed suppression system is provided since the control room is constantly staffed, detectors are provided below the suspended acoustical ceiling, manual suppression equipment is located in the corridors, and fire loading in the area is very low. This area was analyzed along with 5525 corridor.			
DEVIATION REQUEST:			
Yes, Lack of fixed suppression system			
FIRE DETECTION TYPE		FIRE SUPPRESSION TYPE	
Ionization in cabinets 106C51 and 106C50		H ₂ O hose ITMR400 and OMHC301 Portable extinguishers Manual Halon in control console pit	
EMERG. LIGHTS			
YES			
CONSTRUCTION:		FIRE RATING	
<u>Walls:</u>		See Fire Drawings	
North			
East			
South			
West			
<u>Floor:</u>		3 hour	
<u>Ceiling:</u>		3 hour	
<u>Doors And Hatches:</u>		See Fire Drawings	
Elec. Drawings E-1665 and E-1655 and Fig. 9.5-9		Fire Drawings Fig. 9.5-5	
COMBUSTIBLES:		QUANTITY	EQUIV. FIRE SEVERITY
MATERIAL:			
Cable Insulation		2.255 x 10 ⁶	BTU 0.60
* Plastics		264 lbs	1.48
Lube Oil *		various	1.82
Paper *		300 lbs	0.70
Carpet *			1.65
Rubber Hoses *		70 lbs	0.4
Transient (paper) *		100 lbs	0.2
AREA =2680 ft²		TOTAL	6.85 min

TABLE 9A-61

FIRE HAZARDS ANALYSIS TABULATION

ROOM: Ready Room		FIRE AREA: CD45	
ROOM NO.	5511	BLDG.	Aux/Control
		ELEV.	137
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE
	None		Ionization
			EMERG. LIGHTS
			No
		CONSTRUCTION:	FIRE RATING
		Walls:	See Figure 9.5-5
		North	
		East	
		South	
		West	
		Floor:	3 hour
		Ceiling:	3 hour
		Doors And Hatches:	none
		Reference Drawings	
		Elec. Drawings	E-1655-1
		Fire Drawings	Figure 9.5-5 and Figure 9.5-10
		COMBUSTIBLES:	
		MATERIAL:	QUANTITY
		a. Cable insulation (appliance cable)	30 ft
			EQUIV. FIRE SEVERITY (MIN)
			0.4
		b. Lube oil	0
		c. Other (carpet)	56 lbs
			2.4
		d. Furnishings, various	6.1
		AREA = 160 ft ²	TOTAL
			8.9 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None			
DEVIATION REQUEST:			
None			

TABLE 9A-62
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD47

ROOM NO. 5525		BLDG. Auxiliary/Control	ELEV. 137	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Cable tray and conduit		None		H ₂ O hose 1THR400 Portable extinguisher	
				EMERG. LIGHTS:			
11				Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. This room is analyzed with room 5510, the main control room, since there is only a 1-hour barrier separating the two. III.G.2.a separation is provided between this area and the RSF equipment and cable. The cable in this area is not required for safe shutdown.				CONSTRUCTION:		FIRE RATING:	
				<u>Walls:</u>			
				North		3 hour	
				East		1 hour (MCR)	
				South		3 hour	
West		3 hour					
				<u>Floor:</u>		3 hour	
				<u>Ceiling:</u>		3 hour	
				<u>Doors and Hatches:</u>		See Fig. 9.5-5	
				<u>Reference Drawings:</u>			
				Electrical Drawings - E-1665			
				Fire Drawings - Fig. 9.5-5 & 9.5-10			
				COMBUSTIBLES:		EQUIV. FIRE	
				<u>MATERIAL:</u>		<u>QUANTITY</u>	
						<u>SEVERITY (MIN.)</u>	
				a. Cable insulation		426 lb 3.4	
				b. Lube oil		0	
				c. Other-Security Cabinet			
				1@ 0.04x10E6 BTU		0.06	
				d. Transient		0	
DEVIATION REQUEST: None				AREA = 470 ft ²		TOTAL 3 min.	

TABLE 9A-63
FIRE HAZARD ANALYSIS TABULATION

ROOM: H & V Chase

Fire Area: CD48

ROOM NO. 5535	BLDG. Auxiliary/Diesel	ELEV. 150	FIRE DETECTION TYPE: Heat actuated	FIRE SUPPRESSION TYPE: Auto preaction sprinkler																		
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: No																			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Auto suppression system installed to reduce hazard due to inaccessibility of cable concentration.			CONSTRUCTION: FIRE RATING:																			
			Walls: 3 hour																			
			North																			
			East																			
			South																			
			West																			
			Floor: 3 hour (except ends)																			
			Ceiling: 3 hour (except ends)																			
			Doors and Hatches: No doors to 5535. Each end is open to vertical HVAC chase.																			
			Reference Drawings: Elec. Drawings - E-1665-1, 1676-1, 1686-1 Fire Drawings - Fig. 9.5-5 and 9.5-10																			
			<table border="1"> <thead> <tr> <th>COMBUSTIBLES: MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN.)</th> </tr> </thead> <tbody> <tr> <td>a. Cable insulation</td> <td>8,448 lbs</td> <td>48.4</td> </tr> <tr> <td>b. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>c. Other</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient</td> <td></td> <td>0</td> </tr> <tr> <td>AREA = 714 ft²</td> <td>TOTAL</td> <td>48</td> </tr> </tbody> </table>		COMBUSTIBLES: MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)	a. Cable insulation	8,448 lbs	48.4	b. Lube oil		0	c. Other		0	d. Transient		0	AREA = 714 ft ²	TOTAL	48
COMBUSTIBLES: MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)																				
a. Cable insulation	8,448 lbs	48.4																				
b. Lube oil		0																				
c. Other		0																				
d. Transient		0																				
AREA = 714 ft ²	TOTAL	48																				
DEVIATION REQUEST: None																						

TABLE 9A-64
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Charger Room Fire Area: CD49

ROOM NO. 5538 BLDG. Auxiliary/Diesel ELEV. 146		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: II Fuse transfer switch box DD412 Battery chargers DD413 DD414 Battery monitor DD415 Division II cable tray and conduit	Ionization		H ₂ O hose 1VHR400 Portable extinguisher	
		EMERG. LIGHTS: Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown. The north and east walls, constructed of gypsum board, that enclose the diesel exhaust stack, contain features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.		CONSTRUCTION:		FIRE RATING:	
		<u>Walls:</u>			
		North		3 hour	
		East			
		South			
		West			
		<u>Floor:</u>		3 hour	
		<u>Ceiling:</u>		3 hour	
		<u>Doors and Hatches:</u>		3 hour	
		<u>Reference Drawings:</u>			
		Electrical Drawings - E-1676-1			
		Fire Drawings - Fig. 9.5-5 & 9.5-10			
		COMBUSTIBLES:		EQUIV. FIRE	
		<u>MATERIAL:</u>		<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>	
		a. Cable insulation		2693 lb	29.7
		b. Lube oil			0
		c. Other			0
		d. Transient			0
DEVIATION REQUEST: None		AREA = 340 ft ²		TOTAL	29.7 min.

TABLE 9A-65
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room

Fire Area: CD 50

ROOM NO. 5539	BLDG. Auxiliary/Diesel	ELEV. 146	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H ₂ O Hose 1VHR400 Portable ext.	
II	1E, Channel D, 125V Battery Channel D conduit		EMERG. LIGHTS:		
			Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			CONSTRUCTION:	FIRE RATING:	
None. Redundant Division I equipment has III.G.2. separation and will be used for safe shutdown.			Walls:	3 hour	
			North		
			East		
			South		
			West		
			Floor:	3 hour	
			Ceiling:	3 hour	
			Doors and Hatches:	3 hour	
			Reference Drawings:		
			Elec. Drawings - E-1676-1		
			Fire Drawings - Fig. 9.5-5 and 9.5-10		
DEVIATION REQUEST: None			COMBUSTIBLES:	EQUIV. FIRE	
			MATERIAL:	QUANTITY	SEVERITY (MIN.)
			a. Cable Insulation	24.3 lbs	0.4
			b. Lube Oil		0.0
			c. Other:		
			(batt. case)	600.0 lbs	29.2
			(batt. cover)	60.0 lbs	1.9
			(PS spacers)	16.0 lbs	1.0
			(LDPE HVAC hose)	6.5 lbs	0.5
			d. Transient		0.0
AREA - 205 ft ²	TOTAL	33.1 min.			

TABLE 9A-66
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Charger Room

Fire Area: CD51

ROOM NO. 5540		BLDG. Auxiliary/Diesel	ELEV. 146	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	II	SAFE SHUTDOWN EQUIPMENT AND CABLE: Fuse transfer box BD412 1E, Channel B, battery chargers BD413 and BD414 Battery Monitor BD415 Channel B trays and conduit		Ionization		H ₂ O hose 1UHR401 Portable extinguisher	
				EMERG. LIGHTS: Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.				CONSTRUCTION:		FIRE RATING:	
				<u>Walls:</u>		3 hour	
				North East South West			
				<u>Floor:</u>		3 hour	
				<u>Ceiling:</u>		3 hour	
				<u>Doors and Hatches:</u>		3 hour	
				<u>Reference Drawings:</u>			
				Electrical Drawings - D-1676-1			
				Fire Drawings - Fig. 9.5-5 and 9.5-10			
DEVIATION REQUEST: None				COMBUSTIBLES:		EQUIV. FIRE	
				MATERIAL:		QUANTITY	SEVERITY (MIN.)
				a. Cable insulation	2,553 lbs	28.2	
				b. Lube oil		0	
				c. Other		0	
				d. Transient		0	
				AREA = 340 ft ²	TOTAL	28 min.	

TABLE 9A-67
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room

Fire Area: CD52

ROOM NO. 5541	BLDG. Auxiliary/Diesel	ELEV. 146	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H ₂ O hose 1UHR401 Portable ext.
II	1E, Channel B, 125V Battery Channel B Conduit		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hours
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	3 hours
None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.			Ceiling:	3 hours
			Doors and Hatches:	3 hours
			Reference Drawings:	
			Electrical Drawings - E-1676-1	
			Fire Drawings - Fig. 9.5-5 and 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable Insulation	24.3 lbs 0.4
			b. Lube Oil	0.0
			c. Other:	
			(batt. case)	600.0 lbs 29.2
			(batt. cover)	60.0 lbs 1.9
			(PS spacers)	16.0 lbs 1.0
			(LDPE HVAC hose)	6.5 lbs 0.5
			d. Transient	0.0
			AREA = 205 ft ²	TOTAL 33.1 min.
DEVIATION REQUEST: None				

**TABLE 9A-68
FIRE HAZARD ANALYSIS TABULATION**

ROOM: Battery Charger Room

Fire Area: CD53

ROOM NO. 5542		BLDG. Auxiliary/Diesel		ELEV. 146		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	I	SAFE SHUTDOWN EQUIPMENT AND CABLE: 1E, Channel C, battery chargers CD413 and CD414 Channel C conduit and cable tray Fuse transfer switch box CD412 Battery monitor CD415				Ionization		H ₂ O hose 1UHR401			
						EMERG. LIGHTS:		Portable extinguisher			
<p>EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:</p> <p>None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.</p> <p>The north wall, constructed of gypsum board, that encloses the diesel exhaust stack, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.</p>						CONSTRUCTION:		FIRE RATING:			
						<u>Walls:</u>		3 hour			
						North East South West					
						<u>Floor:</u>		3 hour			
						<u>Ceiling:</u>		3 hour			
						<u>Doors and Hatches:</u>		3 hour			
						<u>Reference Drawings:</u>					
						Electrical Drawings - E-1686-1					
						Fire Drawings - Fig. 9.5-5 & 9.5-10					
						COMBUSTIBLES:					
						<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>EQUIV. FIRE SEVERITY (MIN.)</u>	
						a. Cable insulation		2553 lb		28.2	
						b. Lube oil				0	
						c. Other				0	
						d. Transient				0	
DEVIATION REQUEST: None						AREA = 340 ft ²		TOTAL		28 min.	

TABLE 9A-69
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room

Fire Area: CD54

ROOM NO. 5543	BLDG. Auxiliary/Diesel	ELEV. 146	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H ₂ O hose 1UHR401 Portable ext.
I	1E, Channel C 125V Battery Division I Conduit		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	3 hour
			North	
			East	
			South	
			West	
			Floor:	3 hour
			Ceiling:	3 hour
			Doors and Hatches:	3 hour
			Reference Drawings:	
			Elec. drawings - E-1686-1	
			Fire Drawings - Fig. 9.5-5 and 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable Insulation	24.3 lbs 0.4
			b. Lube Oil	0.0
			c. Other:	
			(batt. case)	600.0 lbs 29.2
			(batt. cover)	60.0 lbs 1.9
			(PS spacers)	16.0 lbs 1.0
			(LDPE HVAC hose)	6.5 lbs 0.5
			d. Transient	0.0
			AREA = 205 ft ²	TOTAL 33.1 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				
None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.				
DEVIATION REQUEST: None				

TABLE 9A-70
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Charger Room

Fire Area: CD55

ROOM NO. 5544		BLDG. Aux/Diesel	ELEV. 146	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:												
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: 1E, Channel A, Battery Charger AD413 and AD414 Channel A conduit Fuse transfer switch box AD412 Battery Monitors AD415			Ionization		H ₂ O hose 1JHR401 Portable ext.												
				EMERG. LIGHTS: Yes														
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.				CONSTRUCTION:		FIRE RATING:												
				<u>Walls:</u> North East South West		3 hour												
				<u>Floor:</u>		3 hour												
				<u>Ceiling:</u>		3 hour												
				<u>Doors and Hatches:</u>		3 hour												
				<u>Reference Drawings:</u> Elec. Drawings - E-1686-1 Fire Drawings - Fig. 9.5-5 and 9.5-10														
				COMBUSTIBLES:		EQUIV. FIRE												
				<table border="0"> <thead> <tr> <th><u>MATERIAL:</u></th> <th><u>QUANTITY</u></th> <th><u>SEVERITY (MIN.)</u></th> </tr> </thead> <tbody> <tr> <td>a. Cable insulation</td> <td>2,553 lbs</td> <td>28.2</td> </tr> <tr> <td>b. Lube oil</td> <td></td> <td>0</td> </tr> <tr> <td>c. Other</td> <td></td> <td>0</td> </tr> <tr> <td>d. Transient</td> <td></td> <td>0</td> </tr> </tbody> </table>		<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>	a. Cable insulation	2,553 lbs	28.2	b. Lube oil		0	c. Other		0	d. Transient
<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>																
a. Cable insulation	2,553 lbs	28.2																
b. Lube oil		0																
c. Other		0																
d. Transient		0																
DEVIATION REQUEST: None				AREA = 340 ft ²		TOTAL 28 min.												

TABLE 9A-71
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room		Fire Area: CD56																															
ROOM NO. 5545	BLDG. Auxiliary/Diesel	ELEV.146																															
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: I Class 1E, Channel A, 125V Battery Division I Conduit	FIRE DETECTION TYPE: Ionization	FIRE SUPPRESSION TYPE: H ₂ O hose 1JHR401 Portable extinguisher																														
		EMERG. LIGHTS: Yes																															
		CONSTRUCTION: Walls: North East South West	FIRE RATING: 3 hour																														
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.		Floor: Ceiling: Doors and Hatches:	3 hour 3 hour 3 hour																														
		Reference Drawings: Elec. Drawings - E-1686-1 Fire Drawings - Fig. 9.5-5 and 9.5-10																															
DEVIATION REQUEST: None		COMBUSTIBLES: <table border="1"> <thead> <tr> <th>MATERIAL:</th> <th>QUANTITY</th> <th>EQUIV. FIRE SEVERITY (MIN.)</th> </tr> </thead> <tbody> <tr> <td>a. Cable Insulation</td> <td>24.3 lbs</td> <td>0.4</td> </tr> <tr> <td>b. Lube Oil</td> <td></td> <td>0.0</td> </tr> <tr> <td>c. Other:</td> <td></td> <td></td> </tr> <tr> <td> (batt. case)</td> <td>600.0 lbs</td> <td>29.2</td> </tr> <tr> <td> (batt. cover)</td> <td>60.0 lbs</td> <td>1.9</td> </tr> <tr> <td> (PS spacers)</td> <td>16.0 lbs</td> <td>1.0</td> </tr> <tr> <td> (LDPE HVAC hose)</td> <td>6.5 lbs</td> <td>0.5</td> </tr> <tr> <td>d. Transient</td> <td></td> <td>0.0</td> </tr> <tr> <td>AREA = 205 ft²</td> <td>TOTAL</td> <td>33.1 min.</td> </tr> </tbody> </table>		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)	a. Cable Insulation	24.3 lbs	0.4	b. Lube Oil		0.0	c. Other:			(batt. case)	600.0 lbs	29.2	(batt. cover)	60.0 lbs	1.9	(PS spacers)	16.0 lbs	1.0	(LDPE HVAC hose)	6.5 lbs	0.5	d. Transient		0.0	AREA = 205 ft ²	TOTAL	33.1 min.
		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)																													
a. Cable Insulation	24.3 lbs	0.4																															
b. Lube Oil		0.0																															
c. Other:																																	
(batt. case)	600.0 lbs	29.2																															
(batt. cover)	60.0 lbs	1.9																															
(PS spacers)	16.0 lbs	1.0																															
(LDPE HVAC hose)	6.5 lbs	0.5																															
d. Transient		0.0																															
AREA = 205 ft ²	TOTAL	33.1 min.																															

TABLE 9A-72

FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD57

ROOM NO. 5546		BLDG. Auxiliary/Diesel	ELEV. 150	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Ionization Photoelectric		H ₂ O hose 1JRH401, 1UHR400 Portable extinguisher	
	None			EMERG. LIGHTS: Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. The north wall, constructed of gypsum board, contains features (penetration seals) rated at less than 2 hours. This is acceptable per Section 9A.1.2.1.				CONSTRUCTION:		FIRE RATING:	
				<u>Walls:</u> North East South West <u>Floor:</u> <u>Ceiling:</u> <u>Doors and Hatches:</u>		See fire drawings See fire drawings See fire drawings	
				Reference Drawings:			
				Electrical Drawings - E-1686-1 Fire Drawings - Fig. 9.5-5 & 9.5-10			
DEVIATION REQUEST: None				COMBUSTIBLES:		EQUIV. FIRE SEVERITY (MIN.)	
				MATERIAL: QUANTITY		SEVERITY (MIN.)	
				a. Cable insulation		0	
				b. Lube oil		0	
				c. Other		0	
				d. Transient		0	
				AREA = NS		TOTAL 0 min.	

TABLE 9A-7B

FIRE HAZARD ANALYSIS TABULATION

ROOM: Vestibule

Fire Area: CD58

ROOM NO. 5601	BLDG. Auxiliary/Diesel	ELEV. 155'-3"	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1YHR400 Portable ext.	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: No		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None			CONSTRUCTION:	FIRE RATING:	
			Walls:		
			North	2 hour	
			East	2 hour	
			South	Unrated	
			West	2 hour	
			Floor:	2 hour	
			Ceiling:	Unrated	
			Doors and Hatches:	2 hour	
			Reference Drawings:		
			Elec. Drawings - E-1656-1		
			Fire Drawings - Fig. 9.5-6		
			COMBUSTIBLES:		
			MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN.)
			a. Cable insulation		0
			b. Lube oil		0
			c. Other		0
			d. Transient		0
DEVIATION REQUEST: None			AREA = NS	TOTAL	0

TABLE 9A-74
FIRE HAZARD ANALYSIS TABULATION

ROOM: HVAC Equipment Room		Fire Area: CD59	
ROOM NO. 5602	BLDG. Auxiliary/Diesel	ELEV. 155'-3"	
MECH		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
SHUTDOWN	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization	H ₂ O hose 1YHR400
DIVISION		Heat-activated detector in 1AVH400	Portable extinguisher
			Manual water spray in 1AVH400
I	Control room air handling unit AVH403	EMERG. LIGHTS:	
I	Control area chiller units AK400	Yes	
	AP400		
	AV400		
I	Control room return air fan AV415	CONSTRUCTION:	FIRE RATING:
I	Control panel AC485	Walls:	
I	Division I conduit	North	3 hour
		East	3 hour
		South	2 hour/unrated outside
		West	3 hour wall
II	Conduit/cable to GK-SV-9588AB and GK-SV-9598B	Floor:	3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Ceiling:	Unrated(outside)
None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.		Doors and Hatches:	3 hour
Loss of GK-SV-9598B, control area exhaust fan isolation damper, will have no effect. Closure of HD-9598B will isolate the non-Q control area exhaust fan which is acceptable. The Q Division II equipment is still available since the Division II cable in 5602 has coordinated protective devices.		Reference Drawings:	
Loss of GK-SV-9588AB, the "A" fan unit inlet damper, is acceptable since loss of the "A" unit is already assumed on fire in 5602.		Electrical Drawings - E-1656-1 & E-1666-1	
		Fire Drawings - Fig. 9.5-6, 9.5-9 & 9.5-10	
		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL:	SEVERITY (MIN.)
		a. Cable insulation	7658 18.1
		b. Lube oil	
		c. Other	
		d. Transient	
		e. Plastic	2.0 lb. 0.01
DEVIATION REQUEST: None		AREA = 3530 ft ²	TOTAL 18.11 min

Table 9A-75

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD60, Elev. 163 ft. -3 in. HVAC

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE;

None. Use of the Remote Shutdown Panel may be necessary if postulated loss of HVAC or chilled water affects the IE panel room instrumentation used in the MCR.

Total BTU Combustibles: 72.614×10^6

Total Floor Area: 5181 ft^2

Average BTU/ft²: 14,015

Average Equivalent Fire Severity: 10.51 min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Full

TABLE 9A-75
FIRE HAZARD ANALYSIS TABULATION

ROOM: HVAC Equipment Room

Fire Area: CD60

ROOM NO. 5620	BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H C hose 2 Portable extinguisher
I	Diesel Area, el. 163-ft, Air Handling Unit 1AVH408 (CH. A). Panel for above HVAC and Battery Room Exhaust Fan, 1AC486. Cable for FSL-9562A1 & A2 Battery Room Fan Auto Start and Alarm.		EMERG. LIGHTS: Yes	
II	Diesel Area, el. 163-ft, Air Handling Unit 1BVH408 (CH. B). Panel for above HVAC and Battery Room Exhaust Fan, 1BC486. Cable for FSL-9562B1 & B2. Two cable trays (CH. B and D) containing 1E power to Non-1E BOP and Process computers.		CONSTRUCTION:	FIRE RATING:
			Walls:	
			North	Unrated
			East	3 hour
			South	3 hour
			West	3 hour
			Floor:	3 hour
			Ceiling:	3 hour
			Doors and Hatches:	3 hour
			Reference Drawings:	
			Elec. Drawings - E-1677-2	
			Fire Drawings - Figures 9.5-6 and 9.5-10	
<p>AVH408 and BVH408 supply cooling air to the Control Equipment Room 5605, Inverter Rooms 5623, 5622, 5621, 5624, Battery Rooms 5626, 5627, Corridor 5625, 5612, Inverter Room 5628, HVAC 5620, Inverter Rooms 5613, 5607, 5615, 5616, and Battery Rooms 5614 & 5609. Battery Room Exhausts Fans AV416 & BV416 exhaust air from 5614 & 5609. FSL-9562A1 & A2, B1 & B2 are the alarm and auto backup start for the Battery room exhaust fans. Loss of Battery Room exhaust fan instrumentation and auto start is acceptable since it has no affect on safe shutdown or radiation release. Loss of A&BVH408 would stop air conditioning to el. 163-6. Room temperature will increase and eventually could create problems with 1E panel room 5605 (Remote Shutdown Facilities can be used if this happens.) The air handling units are 14 ft apart and enclosed in metal housing. There are no intervening combustibles. The cable trays are approximately 10-ft off the floor. Based on:</p>			COMBUSTIBLES:	EQUIV. FIRE
<p>1. the very low fire loading of 3400 Btu/ft², which is 10 ft. above any possible transient fire, 2. the 14-ft and metal enclosure between the redundant air handling units, 3. use of the Remote Shutdown Facilities on loss of the 1E instrumentation or control; and 4. 3-hour fire barriers. Time is available for safe shutdown and fire brigade action.</p>			MATERIAL:	SEVERITY (MIN.)
			a. Cable insulation	2,257 lbs 2.6
			b. Lube oil	0
			c. Other	0
			d. Transient	0
			AREA = 3,315	TOTAL 3 min.
DEVIATION REQUEST: Yes. Lack of fixed suppression system				

TABLE 9A-75
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD60

ROOM NO. 5604 & 5611 BLDG. Auxiliary/Diesel		ELEV. 163'-6"		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH				Ionization	H O hose 1KHR401.
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:				2 1XHR400, 1WHR400
I	Cable for: 1E panel room HVAC AVH408 chilled water pump AP414			EMERG. LIGHTS:	Portable ext.
II	Cable for: 1E panel room HVAC BVH408 chilled water pump BP414			Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. AVH408 and BVH408 supply cooling air to the 1E panel room 5605 and others (see 5620 for complete list) AP414 and BP414 supply chilled water to AVH408 and BVH408 respectively. Loss of cooling to the 1E panel room may eventually lead to need for the RSP. Room temperature will not reach the qualification limit for at least 8 hours, if at all, time enough for temporary measures. Failure of the chilled water pumps will cause loss of cooling to the HVAC for the RSP, however, the fan and outside air is still available. Therefore, with use of the RSP, if needed, a fire in this area will not affect safe shutdown.				CONSTRUCTION:	FIRE RATING:
				Walls:	
				North	2 hour/3 hour
				East	3 hour
				South	2 hour/3 hour
				West	Unrated (outside)
				Floor:	Unrated
				Ceiling:	Unrated
				Doors and Hatches:	
				Doors	3 hour/2 hour
				Hatches	Unrated
				Reference Drawings:	
				Elec. Drawings - E-1677-1, 1687-1, 1677-2, 1687-2	
				Fire Drawings - Fig. 9.5.-6 and 9.5-10	
				COMBUSTIBLES:	EQUIV. FIRE
				MATERIAL:	QUANTITY SEVERITY (MIN.)
				a. Cable insulation	12,240 lbs 24.6
				b. Lube oil	0
				c. Other	0
				d. Transient	0
				e. Plastic	4 lbs 0.03
DEVIATION REQUEST: Yes, Lack of fixed suppression system				AREA = 1866 ft ²	TOTAL 24.63 min.

TABLE 9A-76
FIRE HAZARD ANALYSIS TABULATION

ROOM: Control Equipment Room

Fire Area: CD61

ROOM NO. 5605/5631 BLDG. Auxiliary/Diesel ELEV. 163'-6"		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: AC680 A and B) 1E elec aux cabinets channel A) Contains AC680 C and D)) offsite CC680 A and B) 1E elec aux cabinets channel C) power CC680 C and D)) relays AC655) 1E Analog logic cabinets for channel A & C CC655) MCR Instrumentation 10C601 Redundant Reactivity Control System Channel A&C BC680 A and B) 1E elec aux cabinets channel B and D BC680 C and D) as above DC680 A and B) DC680 C and D) BC655) 1E Analog logic cabinets for channel B and D DC655) MCR Instrumentation 10C602 Redundant Reactivity Control Sys Channel B&D	Ionization		H ₂ O hose 1PHR401, 1XHR400	
		Photoelectric		Portable extinguishers	
II -Other Non 1Ecabinets, Non IE con- duit, RMS computer		EMERG. LIGHTS: Yes			
		CONSTRUCTION:		FIRE RATING:	
		Walls:			
		North		3 hour	
		East		2 hour/3 hour	
		South		Unrated (outside)	
		West		3 hour	
		Floor:		3 hour	
		Ceiling:		3 hour	
		Doors and Hatches:		3 hour	
		Reference Drawings:			
		Electrical Drawings - E-1677-1			
		Fire Drawings - Figures 9.5-6 and 9.5-10			
		COMBUSTIBLES: EQUIV. FIRE			
		MATERIAL:		QUANTITY	SEVERITY (MIN.)
		a. Cable Insulation		220 lbs	0.68
		b. Computer, etc.		918 lbs	5.66
		c. Paper		200 lbs	0.49
		d. Transient			0
		AREA = 2434 ft ²		TOTAL	6.83 min.
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Panes are bottom entry. Very low fire loading. Loss of one or more of the C680 cabinets may cause off-site breaker to open, redundant offsite breaker should transfer automatically. If both offsite sources are lost, the diesel generator will automatically start and energize the bus. SDG is not affected by fire in 5605. Therefore all C680 cabinets can be lost without affecting safe shutdown. Fire in C655 cabinets could cause erroneous instrument readings in the MCR. It is not likely that a fire could go from panel to panel and if it could, instruments and controls in the RSP would not be affected and could be used for backup readings. Solid state logic generated by above instrument RSP can be used, independent of a fire in this area. for safe shutdown.					
DEVIATION REQUEST: Yes, Lack of fixed suppression system					

TABLE 9A-77

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD62

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division I equipment with III.G.2.a separation would be used for shutdown. There is a potential for spurious operation of BC-HV-F015A, however cold shutdown can be achieved by an alternate cooling method as described in Shutdown Method 1 and clarified in Section 1.e.2.3 of Appendix 9A.

Total BTU Combustibles: 102×10^6 BTU

Total Floor Area: 4550 ft^2

Average BTU/ ft^2 : 22400

Average Equivalent Fire Severity: 17 min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Full

TABLE 9A-77 (Cont)

ROOM: SDG Control Room/Class 1E Swgr Room Fire Area: CD62

ROOM NO. 5410 & 5411BLDG. Auxiliary Diesel Area ELEV. 130		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: II 1. 4.16-kV switchgear 10A404 2. 480-V unit substations 10B440 and 10B408 3. MCCs 10B441 and 10B481 4. 125-Vdc load center 10D417 5. 125-Vdc distribution panel 1DD417 6. Diesel control panel 1DC423 7. Generator control panel 1DC422 8. SDG load sequencer panel 1DC428 9. Cable (Ch. D)	Ionization	H ₂ O hose 1CHR401 2 Portable extinguisher
SHUTDOWN DIVISION		EMERG. LIGHTS: 5410 - Yes 5411 - Yes	
II		CONSTRUCTION:	FIRE RATING:
		Walls:	3 hour
		North East South West	v
		Floor:	3 hour
		Ceiling:	3 hour
		Doors and Hatches:	3 hour
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		Reference Drawings:	
None. Redundant Division I equipment with III.G.2.a separation would be used for shutdown.		Electrical Drawings - E-1675-1 Fire Drawings - Fig 9.5-4 & 9.5-10	
The east wall of room 5410, constructed of gypsum board, that encloses the diesel exhaust stack, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.			
Fire in this area will not have any impact on Channel D cables (for ADS valves) located in rooms 5412 and 5413 as they are separated by 3 hour fire barrier.			
COMBUSTIBLES:		EQUIV. FIRE	
MATERIAL:		QUANTITY	SEVERITY (MIN.)
a. Cable insulation		10,204 lb	21.8
b. Lube oil			0
c. Other			0
d. Transient			0
DEVIATION REQUEST: None			
AREA = 1455 300 =1755ft ²		TOTAL	22 min.

TABLE 9A-77

ROOM: SDG Control Room/Class 1E Swgr Room Fire Area: CD62

ROOM NO. 5412 & 5413 BLDG. Auxiliary Diesel Area ELEV.130		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH		Ionization	H O hose 1THR401 & 2
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		1CHR401 Portable extinguisher
II	1. 4.16-kV switchgear 10A402 2. 480-V unit substations 10B420 and 10B460 3. MCCs 1-B421 and 10B461 4. 125-Vdc load center 10D420 5. 125-Vdc distribution panel 1B417 6. Diesel control panel 1BC423 7. Generator control panel 1BC422 8. SDG load sequencer panel 1BC428 9. Cable (Ch. B)	EMERG. LIGHTS: 5412 - Yes 5413 - Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment with III.G.2.a separation would be used for shutdown. The east wall of room 5412, constructed of gypsum board, that encloses the diesel exhaust stack, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1. Fire in this area will not have any impact on Channel B cables (for ADS valves) located in rooms 5410 and 5411 as they are separated by 3 hour fire barrier.		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	3 hour
		North East South West	v
		<u>Floor:</u>	3 hour
		<u>Ceiling:</u>	3 hour
		<u>Doors and Hatches:</u>	3 hour
		<u>Reference Drawings:</u>	
		Electrical Drawings - E-1675-1 Fire Drawings - Fig. 9.5-4 & 9.5-10	
DEVIATION REQUEST: None		COMBUSTIBLES:	EQUIV. FIRE
		MATERIAL: QUANTITY	SEVERITY (MIN.)
		a. Cable insulation 10,204 lb	21.8
		b. Lube oil	0
		c. Other	0
		d. Transient	0
		AREA = 1775 ft ²	TOTAL 22 min.

TABLE 9A-77 (Cont)

ROOM: HVAC Equipment Room		Fire Area: CD62			
ROOM NO. 5606		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH	SAFE SHUTDOWN EQUIPMENT AND CABLE: II 1. SDG area battery room exhaust fans 1BV406 and 1DV406 2. Switchgear room unit coolers 1BVH401 and 1DVH401 3. Power cables for: a. 1BVH401 and 1DVH401 b. 1BVH406 AND 1DVH406 c. Channels B and D uninterruptible power supply inverters for BOP computer d. Channel D uninterruptible power supply inverters for Process computer			Ionization	H O hose 1XHR400 and 2
SHUTDOWN DIVISION					1KHR401
					Portable extinguisher
				EMERG. LIGHTS:	
				Yes	
				CONSTRUCTION:	FIRE RATING:
				Walls:	3 hour
				North	
				East	
				South	
				West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				Floor:	3 hour
None. An exposure fire in this area would not prevent safe shutdown of the plant. If the B and D switchgear room cooling and battery room exhaust are lost, the redundant Division I equipment is protected by III.G.2.a separation, and shutdown would be accomplished using HPCI and main control room.				Ceiling:	3 hour
				Doors and Hatches:	3 hour
The west wall, constructed of gypsum board, that encloses the diesel exhaust stack, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.				Reference Drawings:	
				Electrical Drawings - E-1677-1	
				Fire Drawings - Fig. 9.5-6 & 9.5-10	
				COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
				MATERIAL:	QUANTITY
				a. Cable insulation	0
				b. Lube oil	0
				c. Other	0
				d. Transient	0
DEVIATION REQUEST: None				AREA = 1020 ft ²	TOTAL 0 min.

**TABLE 9A-78
FIRE HAZARD ANALYSIS TABULATION**

ROOM: Class 1E Inverter Room

Fire Area: CD63

ROOM NO. 5607		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: 11 1DD444 1E 125V Battery charger Channel D 1DD448 Fuse transfer switch box 125VDC 1DD482 1E 120V AC Power Supply 1Dd446 1E 125V DC SWGR			Ionization	H ₂ O hose Portable ext.	
				EMERG. LIGHTS: Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.				CONSTRUCTION:	FIRE RATING:	
				Walls: North East South West	3 hour	
				Floor:	3 hour	
				Ceiling:	3 hour	
				Doors and Hatches:	3 hour	
				Reference Drawings: Elec. Drawings - E-1687-1 Fire Drawings - Fig. 9.5-6 and 9.5-10		
DEVIATION REQUEST: None				COMBUSTIBLES: MATERIAL:	EQUIV. FIRE SEVERITY (MIN.)	
				QUANTITY		
				a. Cable insulation	705 lb	10.1
				b. Lube oil		0
				c. Other		0
				d. Transient		0
				AREA = 263 ft ²	TOTAL	10 min.

TABLE 9A-79

FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor		Fire Area: CD64	
ROOM NO. 5608	BLDG. Auxiliary/Diesel	ELEV. 163'-6"	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
	None	None	H ₂ O hose 1DHR401 Portable ext.
		EMERG. LIGHTS:	
		Yes	
		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	
		North	2 hour
		East	3 hour
		South	3 hour
		West	2 hour
		<u>Floor:</u>	3 hour
		<u>Ceiling:</u>	3 hour
		<u>Doors and Hatches:</u>	2 hour
		<u>Reference Drawings:</u>	
		Elec. Drawings - E-1687-1	
		Fire Drawings - Fig. 9.5-6	
		COMBUSTIBLES:	
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>EQUIV. FIRE SEVERITY (MIN.)</u>
		a. Cable insulation	0
		b. Lube oil	0
		c. Other	0
		d. Transient	0
		AREA = NS	TOTAL 0
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			
None			
DEVIATION REQUEST: None			

TABLE 9A-80
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room

Fire Area: CD65

ROOM NO. 5609		BLDG. Auxiliary/Diesel		ELEV. 163'-6"		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	100447 1E Channel D Battery 125V		Ionization		H ₂ O hose 1PHR401 Portable Extinguisher			
				EMERG. LIGHTS:					
				Yes					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.		CONSTRUCTION:		FIRE RATING:					
		<u>Walls:</u>		3 hour					
		North		3 hour					
		East		3 hour					
		South		3 hour					
		West		3 hour					
		<u>Floor:</u>		3 hour					
		<u>Ceiling:</u>		3 hour					
		<u>Doors and Hatches:</u>		3 hour					
		<u>Reference Drawings:</u>							
		Elec. Drawings - E-1687-1							
		Fire Drawings - Figure 9.5-6 and 9.5-10							
		COMBUSTIBLES:		EQUIV. FIRE					
		<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>			
		a. Cable insulation				0			
		b. Lube oil				0			
		c. Other		312 lb		17.2			
		d. Transient				0			
DEVIATION REQUEST: None		AREA = 181 ft ²		TOTAL		17 min.			

TABLE 9A-81
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD66

ROOM NO. 5610	BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE: None	FIRE SUPPRESSION TYPE: H ₂ O hose 1PHR401 Portable extinguisher
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None		EMERG. LIGHTS: Yes	
			CONSTRUCTION:	
		<u>Walls:</u> North 2 hour East 3 hour South Unrated West Unrated <u>Floor:</u> 3 hour <u>Ceiling:</u> 3 hour <u>Doors and Hatches:</u> 2 hour/3 hour		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None			<u>Reference Drawings:</u>	
			Elec. Drawings - E-1687-1 Fire Drawings - Figure 9.5-6	
DEVIATION REQUEST: None			<u>COMBUSTIBLES:</u>	
			<u>MATERIAL:</u>	<u>QUANTITY</u>
			<u>EQUIV. FIRE SEVERITY (MIN.)</u>	
			a. Cable insulation	0
			b. Lube oil	0
		c. Other	0	
		d. Transient	0	
		AREA = 161 ft ²	TOTAL	0 min.

TABLE 9A-82
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD67

ROOM NO. 5612		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I, Channel C Cable Tray			Ionization	H ₂ O hose 1PHR401 2 Portable extinguisher
				EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Equipment not required for safe shutdown.		CONSTRUCTION:		FIRE RATING:	
		<u>Walls:</u>			
		North		3 hour	
		East		3 hour	
		South		Unrated	
		West		Unrated	
		<u>Floor:</u>		3 hour	
		<u>Ceiling:</u>		3 hour	
		<u>Doors and Hatches:</u>		3 hour	
		Connected to 5610 without door			
		<u>Reference Drawings:</u>			
		Elec. Drawings - E-1687-1			
		Fire Drawings - Figure 9.5-6 and 9.5-10			
		COMBUSTIBLES:		EQUIV. FIRE	
		MATERIAL:	QUANTITY	SEVERITY (MIN.)	
		a. Cable insulation	142 lb	1.6	
		b. Lube oil		0	
		c. Other		0	
		d. Transient		0	
DEVIATION REQUEST: None		AREA = 342 ft ²		TOTAL	2 min.

**TABLE 9A-83
FIRE HAZARD ANALYSIS TABULATION**

ROOM: Class 1E Inverter Room

Fire Area: CD68

ROOM NO. 5613		BLDG. Auxiliary/Diesel		ELEV. 163'-6"		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					Ionization		H ₂ O hose 1PHR401 Portable Extinguisher	
	I	1CD482, 1E, Channel C, Inverter, 120 VAC					EMERG. LIGHTS:		
	I	1OD436 125 VDC SWGR					Yes		
	I	1CD444 125VDC Battery Charger							
	I	1CD448 Fuse Transfer Switch							
I	1CJ482 vac dist panel					CONSTRUCTION:		FIRE RATING:	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.						<u>Walls:</u>		3 hour	
						North East South West			
						<u>Floor:</u>		3 hour	
						<u>Ceiling:</u>		3 hour	
						<u>Doors and Hatches:</u>		3 hour	
						<u>Reference Drawings:</u>			
						Elec. Drawings - E-1687-1			
						Fire Drawings - Figure 9.5-6 and 9.5-10			
						COMBUSTIBLES:			
						<u>MATERIAL:</u>		<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>
a. Cable insulation		776 lb	11.2						
b. Lube oil		0							
c. Other		0							
d. Transient		0							
DEVIATION REQUEST: None		AREA = 259 ft ²		TOTAL		11 min.			

TABLE 9A-84
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room

Fire Area: CD69

ROOM NO. 5614		BLDG. Auxiliary/Diesel		ELEV. 163'-6"		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: 1CD447, Battery Rack, 125 VDC, 1E Channel C					Ionization		H ₂ O hose 1PHR401 Portable Extinguisher	
						EMERG. LIGHTS: Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.						CONSTRUCTION:		FIRE RATING:	
						<u>Walls:</u>		3 hour	
						North East South West			
						<u>Floor:</u>		3 hour	
						<u>Ceiling:</u>		3 hour	
						<u>Doors and Matches:</u>		3 hour	
						<u>Reference Drawings:</u>			
						Elec. Drawings - E-1687-1			
						Fire Drawings - Figures 9.5-6 and 9.5-10			
COMBUSTIBLES:						EQUIV. FIRE			
						<u>MATERIAL:</u>		<u>QUANTITY</u>	
DEVIATION REQUEST: None						a. Cable insulation		insignificant 0	
						b. Lube oil		0	
						c. Other		312 lbs 17.2	
						d. Transient		0	
AREA = 181 ft ²						TOTAL		17	

**TABLE 9A-85
FIRE HAZARD ANALYSIS TABULATION**

ROOM: Class 1E Inverter Room

Fire Area: CD70

ROOM NO. 5615		BLDG. Auxiliary/Diesel		ELEV. 163'-6"		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: 11 1BD482, Class 1E, Channel B inverter 120 VAC 11 1BJ482, 120VAC UPS dist panel					Ionization		H ₂ O hose 1PHR401 Portable Extinguisher	
						EMERG. LIGHTS:			
						Yes			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.						CONSTRUCTION:		FIRE RATING:	
						<u>Walls:</u>		3 hour	
						North East South West			
						<u>Floor:</u>		3 hour	
						<u>Ceiling:</u>		3 hour	
						<u>Doors and Hatches:</u>		3 hour	
						<u>Reference Drawings:</u>			
						Elec. Drawings - E-1687-1			
						Fire Drawings - Figures 9.5-6 and 9.5-10			
						COMBUSTIBLES:			
<u>MATERIAL:</u>		<u>QUANTITY</u>							
a. Cable insulation		352 lbs		7.8					
b. Lube oil									
c. Other									
d. Transient									
AREA = 169 ft ²		TOTAL		8 min.					
DEVIATION REQUEST: None									

TABLE 9A-86
FIRE HAZARD ANALYSIS TABULATION

ROOM: Class 1E Inverter Room

Fire Area: CD71

ROOM NO. 5616		BLDG. Auxiliary/Diesel		ELEV. 163'-6"		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:					Ionization		H ₂ O hose 1PHR401			
	I	1AD482, 1E Channel A, Inverter 120 VAC					EMERG. LIGHTS:		Portable Extinguisher		
	I	1AJ482, 120 VAC UPS Dist panel					Yes				
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.						CONSTRUCTION:		FIRE RATING:			
						<u>Walls:</u>		3 hour			
						North East South West					
						<u>Floor:</u>		3 hour			
						<u>Ceiling:</u>		3 hour			
						<u>Doors and Hatches:</u>		3 hour			
						<u>Reference Drawings:</u>					
						Elec. Drawings - E-1687-1					
						Fire Drawings - Figures 9.5-6 and 9.5-10					
						COMBUSTIBLES:		EQUIV. FIRE			
						<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
						a. Cable insulation		352 lbs		7.1	
						b. Lube oil					
						c. Other					
						d. Transient					
						AREA = 185 ft ²		TOTAL		7 min.	
DEVIATION REQUEST: None											

TABLE 9A-87

TABLE NOT USED
(Refer to Table 9A-99)

TABLE 9A-88
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD73

ROOM NO. 5618		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Ionization	H ₂ O hose 1XHR400
	Channel D conduit for 1BVH407 fan and heater			EMERG. LIGHTS:	
II				Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I cable has III.G.2.a separation will be used for safe shutdown.				CONSTRUCTION:	
				FIRE RATING:	
				<u>Walls:</u>	
				North	Open to 5604
				East	2 hour
				South	3 hour
				West	3 hour
				<u>Floor:</u>	3 hour
				<u>Ceiling:</u>	3 hour
				<u>Doors and Hatches:</u>	3 hour
				North is open to Room 5604 without door.	
				<u>Reference Drawings:</u>	
				Elec. Drawings - E-1677	
				Fire Drawings - Figures 9.5-6 and 9.5-10	
				COMBUSTIBLES:	EQUIV. FIRE
				<u>MATERIAL:</u>	<u>QUANTITY</u>
					<u>SEVERITY (MIN.)</u>
				a. Cable insulation	0
				b. Lube oil	0
				c. Other	0
				d. Transient	0
DEVIATION REQUEST: None				AREA = NS	TOTAL
					0

**TABLE 9A-89
FIRE HAZARD ANALYSIS TABULATION**

ROOM: Inverter Room

Fire Area: CD74

ROOM NO. 5621		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			Ionization	H ₂ O hose 1 KHR401 Portable Extinguisher	
				EMERG. LIGHTS: Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:		
				FIRE RATING:		
				<u>Walls:</u> 3 hour		
				North East South West		
				<u>Floor:</u> 3 hour		
				<u>Ceiling:</u> 3 hour		
				<u>Doors and Hatches:</u> 3 hour		
				<u>Reference Drawings:</u>		
				Elec. Drawings - E-1677-2		
				Fire Drawings - Figures 9.5-6 and 9.5-10		
				COMBUSTIBLES:	EQUIV. FIRE	
				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>
				a. Cable insulation	141 lbs	2.2
				b. Lube oil		0
				c. Other		0
				d. Transient	0	
AREA = 238 ft ²				TOTAL	2 min.	
DEVIATION REQUEST: None						

**TABLE 9A-90
FIRE HAZARD ANALYSIS TABULATION**

ROOM: Inverter Room

Fire Area: CD75

ROOM NO. 5622		BLDG. Auxiliary/Diesel		ELEV. 163'-6"		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None					Ionization		H ₂ O hose 1WHR400 2 Portable Extinguisher			
						EMERG. LIGHTS: Yes					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None						CONSTRUCTION:		FIRE RATING:			
						<u>Walls:</u>					
						North		Unrated			
						East		3 hour			
						South		3 hour			
West		3 hour									
						<u>Floor:</u>		3 hour			
						<u>Ceiling:</u>		3 hour			
						<u>Doors and Hatches:</u>		3 hour			
						<u>Reference Drawings:</u>					
						Elec. Drawings - E-1687-2					
Fire Drawings - Figures 9.5-6 and 9.5-10											
						COMBUSTIBLES:		EQUIV. FIRE			
						<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
						a. Cable insulation		352 lbs		3.4	
						b. Lube oil				0	
						c. Other				0	
d. Transient				0							
AREA = 394 ft ²						TOTAL		3 min.			
DEVIATION REQUEST: None											

TABLE 9A-91
FIRE HAZARD ANALYSIS TABULATION

ROOM: Inverter Room

Fire Area: CD76

ROOM NO. 5623		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			Ionization	H ₂ O hose 1WHR400 2 Portable Extinguisher	
				EMERG. LIGHTS: Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:		FIRE RATING:
				<u>Walls:</u>		3 hour
				North East South West		
				<u>Floor:</u>		3 hour
				<u>Ceiling:</u>		3 hour
				<u>Doors and Hatches:</u>		3 hour
				<u>Reference Drawings:</u>		
				Elec. Drawings - E-1687		
				Fire Drawings - Figures 9.5-6 and 9.5-10		
				COMBUSTIBLES:	EQUIV. FIRE	
				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>
				a. Cable insulation	310 lbs	4.5
				b. Lube oil		0
				c. Other		0
				d. Transient		0
DEVIATION REQUEST: None				AREA = 260 ft ²	TOTAL	5 min.

TABLE 9A-92
FIRE HAZARD ANALYSIS TABULATION

ROOM: Inverter Room

Fire Area: CD77

ROOM NO. 5624		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			Ionization	H ₂ O hose 1WHR400 Portable Extinguishers	
				EMERG. LIGHTS: Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:		FIRE RATING:
				<u>Walls:</u>		
				North	3 hour	
				East	3 hour	
				South	3 hour	
		West	1 hour			
				<u>Floor:</u>		3 hour
				<u>Ceiling:</u>		3 hour
				<u>Doors and Hatches:</u>		1 & 3 hour
				<u>Reference Drawings:</u>		
				Elec. Drawing - E-1677 and E-1687		
				Fire Drawings - Figures 9.5-6 and 9.5-10		
				<u>COMBUSTIBLES:</u>		
				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN.)</u>
				a. Cable insulation	634 lbs	4.1
				b. Lube oil		0
		c. Other		0		
		d. Transient		0		
DEVIATION REQUEST: None				AREA = 582 ft ²	TOTAL	4 min.

TABLE 9A-93
FIRE HAZARD ANALYSIS TABULATION

ROOM: Corridor

Fire Area: CD78

ROOM NO. 5625		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			Ionization		H ₂ O hose 1WHR400 Portable Extinguishers			
				EMERG. LIGHTS: Yes					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:		FIRE RATING:			
				<u>Walls:</u>		See fire drawings			
				North East South West					
				<u>Floor:</u>		3 hour			
				<u>Ceiling:</u>		3 hour			
				<u>Doors and Hatches:</u>		See fire drawings			
				<u>Reference Drawings:</u>					
				Elec. Drawings - E-1687 Fire Drawings - Figures 9.5-6 and 9.5-10					
DEVIATION REQUEST: None				COMBUSTIBLES:		EQUIV. FIRE			
				<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
				a. Cable insulation				0	
				b. Lube oil				0	
				c. Other				0	
d. Transient				0					
				AREA = NS		TOTAL 0 min.			

TABLE 9A-94
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room

Fire Area: CD79

ROOM NO. 5626		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			Ionization	H ₂ O hose 1WHR400	
	None			EMERG. LIGHTS:		
				Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:	FIRE RATING:	
				<u>Walls:</u>	1 hour	
				North		
				East		
				South		
				West		
				<u>Floor:</u>	3 hour	
				<u>Ceiling:</u>	3 hour	
				<u>Doors and Hatches:</u>	1 hour	
				<u>Reference Drawings:</u>		
				Elec. Drawings - E-1687		
				Fire Drawings - Figures 9.5-6 and 9.5-10		
				COMBUSTIBLES:	EQUIV. FIRE	
				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>
				a. Cable insulation		0
				b. Lube oil		0
				c. Other	1280 lbs	30.0
				d. Transient		0
				AREA = 406 ft ²	TOTAL	30 min.
DEVIATION REQUEST: None						

TABLE 9A-95
FIRE HAZARD ANALYSIS TABULATION

ROOM: Battery Room

Fire Area: CD80

ROOM NO. 5627		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			Ionization	H ₂ O hose 1WHR400 Portable Extinguishers
				EMERG. LIGHTS: Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None				CONSTRUCTION:	FIRE RATING:
				<u>Walls:</u> North East South West	1 hour
				<u>Floor:</u>	3 hour
				<u>Ceiling:</u>	3 hour
				<u>Doors and Hatches:</u>	1 hour
				<u>Reference Drawings:</u> Elec. Drawings - E-1687 Fire Drawings - Figures 9.5-6 and 9.5-10	
				COMBUSTIBLES:	EQUIV. FIRE
				<u>MATERIAL:</u>	<u>QUANTITY</u>
				a. Cable insulation	0
				b. Lube oil	0
				c. Other	1220 lbs 30.0
				d. Transient	
AREA = 406 ft ²				TOTAL	30 min.
DEVIATION REQUEST: None					

TABLE 9A-96

FIRE HAZARD ANALYSIS TABULATION

ROOM: Inverter Room

Fire Area: CD81

ROOM NO. 5628		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: None			Ionization	H ₂ O hose 1WHR400 Portable Extinguishers	
				EMERG. LIGHTS:		
				Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None			CONSTRUCTION:		FIRE RATING:	
			<u>Walls:</u>			
			North		1 hour	
			East		1 hour	
			South		3 hour	
			West		3 hour	
			<u>Floor:</u>		3 hour	
			<u>Ceiling:</u>		3 hour	
			<u>Doors and Hatches:</u>		1 hour	
			<u>Reference Drawings:</u>			
Elec. Drawings - E-1687						
Fire Drawings - Figures 9.5-6 and 9.5-10						
COMBUSTIBLES:				EQUIV. FIRE SEVERITY (MIN.)		
<u>MATERIAL:</u>		<u>QUANTITY</u>				
a. Cable insulation		1,058 lbs		6.3		
b. Lube oil				0		
c. Other				0		
d. Transient				0		
AREA = 626 ft ²		TOTAL		6 min.		
DEVIATION REQUEST: None						

TABLE 9A-97

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD82

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division II equipment with III.G.2.a separation would be used for a shutdown.

Fire in rooms 5414 and 5415 will impact Suppression Pool level indicator BJ-LI-4801. Similarly, fire in rooms 5416 and 5417 will impact Suppression Pool level recorders BJ-LR-4805-2 and BJ-LR-4805-1. Although all rooms are part of the fire area CD82, rooms 5414 and 5415 are separated by 3 hour fire walls from rooms 5416 and 5417. Therefore, fire in one area (5414, 5415) will not impact the other area (5416, 5417) since they are separated by a 3 hour fire wall and one means of suppression pool level indication will be available.

The fire pre plans procedures alert operators for the potential loss of suppression pool water level due to a postulated fire in this Fire Area. The procedures provide directions for determining suppression pool level locally in the RHR or Core Spray Pump Rooms. In addition, the procedures provide directions to the operators to manually open either valves BJ-HV-4803 and BJ-HV-4804, or BJ-HV-4865 and BJ-HV-4866, if required to allow process flow to suppression pool level instruments.

Total BTU Combustibles: 104×10^6 BTU

Total Floor Area: 4759 ft^2

Average BTU/ ft^2 : 22,000

Average Equivalent Fire Severity: 16.4 Min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Full

TABLE 9A-97

ROOM: SDG Control Room/Class 1E Swgr Room Fire Area: CD82

ROOM NO. 5414 & 5415BLDG. Auxiliary Diesel Area ELEV. 130		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH		Ionization		H O hose 1THR401 & 2	
SHUTDOWN DIVISION				1SHR400 Portable extinguisher	
I		EMERG. LIGHTS:			
SAFE SHUTDOWN EQUIPMENT AND CABLE:		5414 - Yes 5415 - Yes			
1. 4.16-kV switchgear 10A403 2. 480-V unit substations 10B430 and 10B470 3. MCCs 10B431 and 10B471 4. 125-Vdc load center 10D430 5. 125-Vdc distribution panel 1CD417 6. Diesel control panel 1CC423 7. Generator control panel 1CC422 8. SDG load sequencer panel 1CC428 9. Cable (Ch. C) 10. Suppression Pool level indicator BJ-LI-4801		CONSTRUCTION:		FIRE RATING:	
		<u>Walls:</u> North East South West		3 hour v	
		<u>Floor:</u>		3 hour	
		<u>Ceiling:</u>		3 hour	
		<u>Doors and Hatches:</u>		3 hour	
		<u>Reference Drawings:</u> Electrical Drawings - E-1685-1 Fire Drawings - Fig. 9.5-4 & 9.5-10			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		COMBUSTIBLES:		EQUIV. FIRE	
None. Redundant Division II equipment with III.G.2.a separation would be used for shutdown.		<u>MATERIAL:</u>		<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>	
The east wall of room 5414, constructed of gypsum board, that encloses the diesel exhaust stack, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.		a. Cable insulation		10,204 lb 21.8	
		b. Lube oil		0	
		c. Other		0	
		d. Transient		0	
DEVIATION REQUEST: None		AREA = 1755 ft ²		TOTAL 22 min.	

TABLE 9A-97

ROOM: SDG Control Room/Class 1E Swgr Room

Fire Area: CD82

ROOM NO. 5416 & 5417BLDG. Auxiliary Diesel Area ELEV. 130		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Ionization	H O hose 1THR401 & 2 1SHR400 Portable extinguisher
I	1. 4.16-kV switchgear 10A401 2. 480-V unit substations 10B410 and 10B450 3. MCCs 10B411 and 10B451 4. 125-Vdc load center 10D410 5. 125-Vdc distribution panel 1AD417 6. Diesel control panel 1AC423 7. Generator control panel 1AC422 8. SDG load sequencer panel 1AC428 9. Cable (Ch. A) 10. Suppression Pool level recorders BJ-LR-4805-1 and BJ-LR-4805-2	EMERG. LIGHTS: 5416 - Yes 5417 - Yes	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment with III.G.2.a separation is used for shutdown. The east wall of room 5416, constructed of gypsum board, that encloses the diesel exhaust stack, contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.		CONSTRUCTION:	FIRE RATING:
		<u>Walls:</u>	3 hour
		North East South West	v
		<u>Floor:</u>	3 hour
		<u>Ceiling:</u>	3 hour
		<u>Doors and Hatches:</u>	3 hour
		<u>Reference Drawings:</u> Electrical Drawings - E-1685-1 Fire Drawings - Fig. 9.5-4 & 9.5-10	
		COMBUSTIBLES:	EQUIV. FIRE
		<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>
		a. Cable insulation	10,204 lb 21.8
		b. Lube oil	0
		c. Other	0
		d. Transient	0
DEVIATION REQUEST: None		AREA = 1775 ft ²	TOTAL 22 min.

TABLE 9A-97

ROOM: HVAC Equipment Room

Fire Area: CD82

ROOM NO. 5629		BLDG. Auxiliary/Diesel		ELEV. 163		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	I	SAFE SHUTDOWN EQUIPMENT AND CABLE: 1. SDG area battery room exhaust fans 1AV406 and 1CV406 2. SWR room unit coolers 1AVH401 and 1CVH401 3. Power cables for: a. 1AVH401 and 1CVH401 b. 1AV406 and 1CV406				Ionization		H O hose 1WHR400 2 Portable extinguishers			
						EMERG. LIGHTS: Yes					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment which has III.G.2.a separation would be used for safe shutdown. The north wall, constructed of gypsum board, that encloses the diesel stack at column line "U," contains features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9A.1.2.1.						CONSTRUCTION:		FIRE RATING:			
						Walls:		3 hour			
						North					
						East					
						South					
						West		v			
						Floor:		3 hour			
						Ceiling:		3 hour			
						Doors and Hatches:		3 hour			
						Reference Drawings:					
						Electrical Drawings - E-1687-1					
						Fire Drawings - Fig. 9.5-6 & 9.5-10					
						COMBUSTIBLES:		EQUIV. FIRE			
						MATERIAL:		QUANTITY		SEVERITY (MIN.)	
						a. Cable insulation		423 lb		1.3	
						b. Lube oil				0	
						c. Other				0	
						d. Transient				0	
DEVIATION REQUEST:											
						AREA = 1229 ft ²		TOTAL		1 min.	

TABLE 9A-98

FIRE HAZARD ANALYSIS TABULATION

ROOM: HVAC Equipment Room

Fire Area: CD83

ROOM NO. 5630	BLDG. Auxiliary/Control	ELEV. 155'-3"	FIRE DETECTION TYPE: Ionization	FIRE SUPPRESSION TYPE:
MECH				H ₂ O hose
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Heat Actuated (in 1BVH400)	Portable Extinguishers Manual Wtr Spray (Inside Charcoal Filter 1BVH400)
II	Control Room HVAC BVH403, BV400		EMERG. LIGHTS:	
II	Control Area Chillers BK400 & BP400		Yes	
II	Control Panel BC485			
I	GK-SV-9588 BA		CONSTRUCTION:	FIRE RATING:
			<u>Walls:</u>	
			North	3 hour
			East	3 hour
			South	Unrated (outside)
			West	3 hour
			<u>Floor:</u>	3 hour
			<u>Ceiling:</u>	Unrated (outside)
			<u>Doors and Hatches:</u>	3 hour
			<u>Reference Drawings:</u>	
			Elec. Drawings - E-1666-1	
			Fire Drawings - Figures 9.5-6, 9.5-9, and 9.5-10	
			COMBUSTIBLES:	EQUIV. FIRE
			<u>MATERIAL:</u>	<u>QUANTITY</u>
			a. Cable insulation	2550 lbs
			b. Lube oil	0
			c. Other (plastic)	4 lbs
			d. Transient	0
			AREA = 2,200 ft ²	TOTAL
				4.38 min
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:				
None. Redundant Division I equipment has III.G.2 separation and will be used for safe shutdown. Loss of GK-SV-9588BA, the BV400 inlet will have no effect since loss of BV400 is already assumed. A short will not affect the redundant division since there are coordinated protective devices for all associated circuits.				
DEVIATION REQUEST: None				

TABLE 9A-99

FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: CD84, Elev. 178 HVAC

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. 5105 contains the RPS MG Set. 5617 contains Div. I cable for equipment on 5703/4. 5703/4 may use the RSP on postulated loss of HVAC. See a more comprehensive discussion on Sheets 2 and 3.

Total BTU Combustibles: 18.9×10^6 BTU

Total Floor Area: $10,220 \text{ ft}^2$

Average BTU/ ft^2 : 1850

Average Equivalent Fire Severity: 1.4 Min.

Automatic Suppression Coverage: None

Automatic Detection Coverage: Full

TABLE 9A-99
FIRE HAZARD ANALYSIS TABULATION

ROOM: Diesel Area HVAC Equipment Room Fire Area: CD84

ROOM NO. 5704 & 5703 BLDG. Auxiliary/Diesel ELEV. 178		FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH		Ionization	H ₂ O hose 1RHR401 and 1QHR401 Portable Extinguishers
SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	EMERG. LIGHTS:	
I	1A & CC483 D-G Area HVAC Panel 1AK403 Control Area Water Chiller 1AVH407 Control Equipment Room Supply Unit 1AP414 Class 1E Panel Room Chilled Water Pump 1AV410 Control Area Battery Room Exhaust Fan	Yes	
II	1B & DC 483 D-G Area HVAC Panel 1BK403 Control Area Water Chiller 1BVH407 Control Equipment Room Supply Unit 1BP414 Class 1E Panel Room Chilled Water Pump 1BV410 Control Area Battery Room Exhaust Fan	CONSTRUCTION:	FIRE RATING:
		Walls:	
		North	3 hour
		East	3 hour
		South	Unrated (outside)
		West	Unrated (outside)
		Floor:	3 hour
		Ceiling:	Unrated (outside)
		Doors and Hatches:	
		Doors: 3 hour, North wall	
		Opening in floor for HVAC duct (Eastwall) extends down to el. 54, the RPS MG sets room 5105	
		Reference Drawings:	
		Elec. Drawings - E-1680-1 and E-1690-1	
		Fire Drawings - Figures 9.5-7 and 9.5-10	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:		COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
The Air Handling Units AVH407 and BVH407 are enclosed in metal casings, are connected by an HVAC duct, and are physically separated by 6 ft. Loss of these VH407 units would cause a loss of air conditioning to the Control Room HVAC rooms 5602 and 5630, Electrical Access Areas 5501, control equipment mezz. 5403, Control Equipment room 5302, cable spread room 5202, Battery and Equipment rooms 5105, 5128, 5102, 5103, 5104, 5126, and Corridors 5525, 5404, 5303.		MATERIAL:	QUANTITY
There is more than 20 ft separation between the DG HVAC panels B7DC483 and A&CC483 and their associated conduit with negligible intervening combustibles. Therefore, a transient fire in this area would not jeopardize both divisions of DG-HVAC. One division of DG is therefore assured for shutdown and the other division DGs may operate for sometime without HVAC, since jacket water cooling is still available.		a. Cable insulation	2,508 lbs
The chillers (K403) supply chilled water to the air handling units in 5620, the TSC Air handling unit, and the RSP air handling unit. There is 4 ft between chiller skids.		b. Lube oil	0
There are negligible combustibles on this floor, since all cable is routed in conduit with the exception of short lengths of non-1E cable trays. Administrative controls will be used to prevent transient combustibles in this area.		c. Other	0
In addition a partial height barrier of 1 hour construction is installed with a wing section to protect at least on division of panels from a single fire. (cont'd on next page)		d. Transient	0
DEVIATION REQUEST: Yes, III.G.2 separation requirements		AREA = 7,161 ft ²	TOTAL 1.3 min.

Effects of fire (cont)

Assuming a fire did start in this room, however:

1. If the fire took out both air handling units' power cable, temperature would start to rise and may eventually affect the control equipment room panels at Elevation 102. No effect on cabling or use of batteries is postulated since the cable is not temperature-sensitive and the batteries will cease to be required after the diesel generators start (assuming LOP). The heat load into 5630 is very small and, therefore, loss of control postulated. The option also exists for control and instrumentation from the remote shutdown facilities to aid the main control room operators.
2. A fire which takes out both chillers will affect cooling to Elevation 163'-6" HVAC, TSC HVAC, and the RSP HVAC. The most sensitive equipment on Elevation 163 ft-6 in. is the 1E panel room, 5605. Temperature may rise to the point where MCR instrument logic is affected. The instrumentation and controls in the RSP can be used. The RSP HVAC utilizes 20 percent outside air and maintains the RSP room at less than 76°F. The RSP and equipment are qualified to 104°F. Calculations predict that, with no HVAC at all, greater than 24 hours will elapse before the qualification limit is reached on the highest outside ambient temperature day. With ventilation this qualification limit may never be reached.
3. Loss of two DG HVAC panels C483 due to 20-ft diameter fire. HVAC panels for alternate Division have III.G.2.b separation; however, no automatic sprinkler exists.
4. The two worst 20-ft-diameter transient fires which were analyzed could affect.
 - a. Cabling to both air handling units and both chillers, or
 - b. Cabling to the "A" chillers, both air handling units, and the "D" DG HVAC panel.
5. Based on:
 - a. Zero in-situ fire loading, i.e., all cable in conduit and enclosed trays
 - b. Administrative controls to limit transient combustibles in this area
 - c. Physical separation between backup equipment with metal enclosures on HVAC units and chillers
 - d. Use of RSF equipment as backup.

There will be time for fire brigade action following detection; therefore, there will be no effect on safe shutdown or radiation release due to a fire in this area.

The gypsum board barriers that enclose the diesel exhaust stacks contain features (penetration seals) rated at less than 3 hours. This is acceptable per Section 9a.1.2.1.

TABLE 9A-99
FIRE HAZARD ANALYSIS TABULATION

ROOM: RPS MG Set Room

Fire Area: CD84

ROOM NO. 5105	BLDG. Auxiliary/Control	ELEV. 54	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:		Ionization	H ₂ O hose 1EHR400 Portable Extinguishers
I	Division I Cabling		EMERG. LIGHTS:	
			Yes	
			CONSTRUCTION:	FIRE RATING:
			Walls:	All walls are 3-hour rated except for 2-hour rated stairwell
			North	
			East	
			South	
			West	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:			Floor:	Unrated (basemat)
None. Redundant Division II cabling, which has III.G.2.a separation, will be used for shutdown.			Ceiling:	3 hour
			Doors and Hatches:	3 hour
			Reference Drawings:	
			Elec. Drawings - E-1661-1	
			Fire Drawings - Figures 9.5-1 Figures 9.5.9	
			COMBUSTIBLES:	EQUIV. FIRE SEVERITY (MIN.)
			MATERIAL:	QUANTITY
			a. Cable insulation	1,275 lbs 10.4
			b. Lube oil	0
			c. Other	0
			d. Transient	0
DEVIATION REQUEST:			AREA = 460 ft ²	TOTAL 10 min.
Yes, Ruskin fire damper 1GMD279D6				

TABLE 9A-99 (Cont)

ROOM: Electrical Access Area

Fire Area: CD84

ROOM NO. 5617		BLDG. Auxiliary/Diesel	ELEV. 163'-6"	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	II	SAFE SHUTDOWN EQUIPMENT AND CABLE: Power to 1BK403 chiller (room 5704) and control and instrumentation to chiller. Cable from GK-FSL-9600 B1 and B2.		Ionization		H ₂ O hose 1XHR400 Portable Extinguishers			
				EMERG. LIGHTS: No					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown. The north and south walls, both of gypsum board construction, contain features (penetration seals) rated less than 2 hours. This is acceptable per Section 9A.1.2.1.				CONSTRUCTION:		FIRE RATING:			
				<u>Walls:</u>					
				North		2 hour			
				East		3 hour			
				South		2 hour			
West		3 hour							
				<u>Floor:</u>		3 hour			
				<u>Ceiling:</u>		3 hour			
				<u>Doors and Hatches:</u>		3 hour			
				<u>Reference Drawings:</u>					
				Elec. Drawings - E-1677					
				Fire Drawings - Fig. 9.5-6 & 9.5-10					
				COMBUSTIBLES:		EQUIV. FIRE			
				<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
				a. Cable insulation		0			
				b. Lube oil		0			
c. Other		0							
d. Transient		0							
DEVIATION REQUEST: None				AREA = NS		TOTAL 0 min.			

TABLE 9A-100
FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: IS1, Intake Structure Division I Area

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.

Total BTU Combustible: 39,868,560

Total Floor Area: 2310 ft²

Average BTU/ft²: 17,259

Average Equivalent Fire Severity: 12.94 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Partial

FIRE HAZARD ANALYSIS TABULATION

ROOM NO.	107	BLDG.	Intake Structure	ELEV.	79' – 8"	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I Station Service Water Valves. Power and control cables for station service water valves. 1AP507 and 1CP507 spray water booster pumps.					None	H ₂ O hose 1AHR500	
I						EMERG. LIGHTS	Portable extinguishers	
						Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2 separation and will be used for safe shutdown.						CONSTRUCTION:	FIRE RATING	
						<u>Walls:</u>		
						North	3 hour	
						East	Unrated	
						South (at col. line 6)	3 hour	
						West	Unrated	
						<u>Floor:</u>	Unrated (floor slab)	
						<u>Ceiling:</u>	Unrated	
						<u>Doors And Hatches:</u>	Unrated	
						<u>Reference Drawings</u>		
<u>Elec. Drawings</u>	E-1504 Sheet 4							
<u>Fire Drawings</u>	Figures 9.5-11 and 9.5-12							
DEVIATION REQUEST:						<u>COMBUSTIBLES:</u>		
						<u>MATERIAL:</u>	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
						a. PA cable/FRP	2.8/55.0 lbs	0.97
						b. Cable insulation		0
						c. Lube oil		0
						d. Transient/Other		0
AREA =		552 ft ²	TOTAL	0.97	min.			

TABLE 9A-100
FIRE HAZARD ANALYSIS TABULATION

ROOM: MCC Room

Fire Area: ISI, Intake Structure Div. I

ROOM NO. 203		BLDG. Intake structure		ELEV. 93		FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	Division I Motor Control Centers 10B553 and 10B573.		Power and control cables for station service water valves, travelling screens, intake structure supply fans, service water strainers.		IFD		H O hose 1AHR500 2 Portable extinguishers	
						EMERG. LIGHTS:			
				Yes					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.				CONSTRUCTION:		FIRE RATING:			
				<u>Walls:</u>					
				North (@ col. line B)		3 hour			
				East		Unrated			
				South (@ col. line 6)		3 hour			
				West		Unrated			
				<u>Floor:</u>		Unrated			
				<u>Ceiling:</u>		Unrated			
				<u>Doors and Hatches:</u>		Unrated			
				<u>Reference Drawings:</u>					
				Elec. Drawings - E-1504-0, Sheet 7					
				Fire Drawings - Figures 9.5-11 and 9.5-12					
DEVIATION REQUEST: None				COMBUSTIBLES:		EQUIV. FIRE			
				<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
				a. Cable insulation		1,430 lbs		31.7	
				b. Lube oil					
				c. Other					
				d. Transient					
				AREA = 169 ft ²		TOTAL		32 min.	

FIRE HAZARD ANALYSIS TABULATION

ROOM: Pump Room **FIRE AREA:** 1S1, Intake Structure Div. I

ROOM NO.	204	BLDG.	Intake Structure	ELEV.	93	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I Service Water Pumps 1AP502, 1CP502 Strainers 1AF509, 1CF509 Panels 1AC581, 1CC581 Control and power cables for service water pumps, strainers, and valves; intake structure HVAC.					IFD Heat actuated	H ₂ O hose 1AHR500 Portable Extinguishers
						EMERG. LIGHTS Yes	Auto preaction sprinkler
						CONSTRUCTION:	FIRE RATING
						<u>Walls:</u> North 3 hour East unrated South (at col. line 6) 3 hour West unrated <u>Floor:</u> unrated <u>Ceiling:</u> unrated <u>Doors And Hatches:</u> unrated	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: <							

TABLE 9A-100

FIRE HAZARD ANALYSIS TABULATION

ROOM: Traveling Screen Panel Room FIRE AREA: IS1, Intake Structure Div. I

ROOM NO.	BLDG.	Intake Structure	ELEV.	107	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE	
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I Panels 1AC516, 1CC516, 1AC515 and 1CC515. Control Cables for Station Service Water Pumps 1AP502 and 1CP502 Control Cables for service water valves and backwash strainers.				1 FD	H ₂ O hose 1AHR500 Portable extinguishers	
					EMERG. LIGHTS		
					None		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has 111.G.2.a separation and will be used for safe shutdown.					CONSTRUCTION:	FIRE RATING	
					<u>Walls:</u>		
					North	unrated	
					East	unrated	
					South	unrated	
					West	unrated	
					<u>Floor:</u>	unrated	
					<u>Ceiling:</u>	unrated	
					<u>Doors And Hatches:</u>	unrated	
					<u>Reference Drawings</u>		
<u>Elec. Drawings</u>	E-1504-0. Sheet 1						
<u>Fire Drawings</u>	Figures 9.5-11 & 9.5-12						
DEVIATION REQUEST: None					<u>COMBUSTIBLES:</u>		
					<u>MATERIAL:</u>	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
					a. PA cable/FRP		0
					b. Cable insulation		0
					c. Lube oil		0
					d. Transient/Other		0
					e. Plastic	4 lb	0.20
					AREA =	308 ft ²	TOTAL 0.20 min.

TABLE 9A-100

FIRE HAZARD ANALYSIS TABULATION

ROOM: Fan Room		FIRE AREA: IS1, Intake Structure Div. I	
ROOM NO. 304/305	BLDG.	Intake Structure	ELEV. 122
MECH SHUTDOWN DIVISION I	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I Intake Structure Exhaust Fans 1AV504 and 1CV504. Power and control cables for exhaust fan and dampers.	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE H ₂ O hose 1AHR500 Portable extinguishers
		None	
		EMERG. LIGHTS	None
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment, which has 111G.2.a separation, will be used for safe shutdown.		CONSTRUCTION:	FIRE RATING
		<u>Walls:</u>	
		North	3 hour
		East	Unrated
		South (@ col. line 6)	3 hour
		West	Unrated
		<u>Floor:</u>	Unrated
		<u>Ceiling:</u>	Unrated
		<u>Doors And Hatches:</u>	Unrated
		<u>Reference Drawings</u>	
<u>Elec. Drawings</u>	E-1504-0, Sheet 6		
<u>Fire Drawings</u>	Figures 9.5-11 and 9.5-12		
COMBUSTIBLES:			
MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)	
a. PA cable/FRP		0	
b. Cable insulation		0	
c. Lube oil		0	
d. Transient/Other		0	
e. Plastic	4 lb	0.31	
AREA =	192 ft ²	TOTAL	0.31 min.
DEVIATION REQUEST: None			

TABLE 9A-100
FIRE HAZARD ANALYSIS TABULATION

ROOM: Fan Room

Fire Area: IS1, Intake Structure Div. 1

ROOM NO. 306		BLDG. Intake structure	ELEV. 122	FIRE DETECTION TYPE:		FIRE SUPPRESSION TYPE:			
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division I Intake Structure Supply Fans 1AV503 and 1CV503. Power and control cables for supply fans and dampers.			None		H O hose 1AHR500 2 Portable extinguishers			
				EMERG. LIGHTS:					
				None					
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division II equipment has III.G.2.a separation and will be used for safe shutdown.				CONSTRUCTION:		FIRE RATING:			
				<u>Walls:</u>					
				North		3 hour			
				East		Unrated			
				South (@ col. line 6)		3 hour			
West		Unrated							
				<u>Floor:</u>		Unrated			
				<u>Ceiling:</u>		Unrated			
				<u>Doors and Hatches:</u>		Unrated			
				<u>Reference Drawings:</u>					
				Elec. Drawings - E-1504-0, Sheet 6 Fire Drawings - Figures 9.5-11 and 9.5-12					
				COMBUSTIBLES:		EQUIV. FIRE			
				<u>MATERIAL:</u>		<u>QUANTITY</u>		<u>SEVERITY (MIN.)</u>	
				a. Cable insulation				0	
				b. Lube oil				0	
				c. Other				0	
d. Transient				0					
DEVIATION REQUEST: None				AREA = 192 ft ²		TOTAL 0 min.			

TABLE 9A-101
FIRE HAZARD ANALYSIS TABULATION SUMMARY

SUMMARY FOR FIRE AREA: IS2, Intake Structure Division II Area

EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE:

None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.

Total BTU Combustible: 43,447,760

Total Floor Area: 2310 ft²

Average BTU/ft²: 18,809

Average Equivalent Fire Severity: 14.11 min.

Automatic Suppression Coverage: Partial

Automatic Detection Coverage: Partial

FIRE HAZARD ANALYSIS TABULATION

ROOM: Pump Room **FIRE AREA:** IS2 Intake Structure Div II

ROOM NO.	110	BLDG.	Intake Structure	ELEV.	79' – 8"	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE		
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Division II Station Service Water Valves. Power and control cables. 1BP507 and 1DP507 spray water booster pumps.					None	H ₂ O hose 1BHR500		
						EMERG. LIGHTS	Portable extinguishers		
						Yes			
						CONSTRUCTION:	FIRE RATING		
						Walls:			
						North	3 hour		
						East	Unrated		
						South	Unrated		
						West	Unrated		
						Floor:	Ground floor slab		
						Ceiling:	Unrated		
						Doors And Hatches:	Unrated		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2 separation and will be used for safe shutdown.						Reference Drawings			
						Elec. Drawings			
						E-1504-0. Sheet 4			
						Fire Drawings			
						Figures 9.5-11 and 9.5-12			
DEVIATION REQUEST: None						COMBUSTIBLES:			
						MATERIAL:			
						QUANTITY			
						EQUIV. FIRE SEVERITY (MIN)			
						a. PA cable/FRP			
						2.8/55.0 lbs			
						0.97			
						b. Cable insulation			
						0			
						c. Lube oil			
						0			
						d. Transient/Other			
						0			
						AREA =			
						552 ft ²			
						TOTAL			
						0..97			
						min.			

TABLE 9A-101
FIRE HAZARD ANALYSIS TABULATION

ROOM: MCC Room

Fire Area: IS2, Intake Structure Div. II

ROOM NO. 207		BLDG. Intake Structure	ELEV. 93	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			IFD	H. O. hose 1AHR500 2 Portable extinguishers	
	II	Division II Motor Control Centers 10B563 and 10B583.		EMERG. LIGHTS:		
		Power and control cables for station service water valves, travelling screens, intake structure supply fans, service water strainers.		Yes		
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.				CONSTRUCTION:	FIRE RATING:	
				<u>Walls:</u>		
				North (@ col. line 8)	3 hour	
				East	Unrated	
				South	Unrated	
		West	Unrated			
				<u>Floor:</u>	Unrated	
				<u>Ceiling:</u>		
				<u>Doors and Hatches:</u>	Unrated	
				<u>Reference Drawings:</u>		
				Elec. Drawings - E-1504-0, Sheet 7		
				Fire Drawings - Figures 9.5-11 and 9.5-12		
				COMBUSTIBLES:	EQUIV. FIRE	
				<u>MATERIAL:</u>	<u>QUANTITY</u> <u>SEVERITY (MIN.)</u>	
				a. Cable insulation	1,430 lbs 31.7	
				b. Lube oil		
				c. Other		
				d. Transient		
DEVIATION REQUEST: None				AREA = 169 ft ²	TOTAL 32 min.	

FIRE HAZARD ANALYSIS TABULATION

ROOM: Pump Room **FIRE AREA:** 1S2, Intake Structure Div. II

[illegible]

TABLE 9A-101

FIRE HAZARD ANALYSIS TABULATION

ROOM: Traveling Screen Panel Room		FIRE AREA: IS2, Intake Structure Div. II		
ROOM NO.	BLDG.	Intake Structure	ELEV. 107	
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:	I FD	FIRE SUPPRESSION TYPE H ₂ O hose 1BHR500 Portable extinguishers	
		EMERG. LIGHTS Yes		
II	Division II Panels 1BC516, 1DC516, 1BC515 and 1DC515. Control Cables for Station Service Water Pumps 1BP502 and 1DP502 Control Cables for service water valves and backwash strainers.	CONSTRUCTION:	FIRE RATING	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has 111.G.2.a separation and will be used for safe shutdown.		<u>Walls:</u>		
		North	unrated	
		East	unrated	
		South	unrated	
		West	unrated	
		<u>Floor:</u>	unrated	
		<u>Ceiling:</u>	unrated	
		<u>Doors And Hatches:</u>	unrated	
		<u>Reference Drawings</u>		
		<u>Elec. Drawings</u>	E-1504-0. Sheet 1	
		<u>Fire Drawings</u>	Figures 9.5-11 & 9.5-12	
		<u>COMBUSTIBLES:</u>		
		<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>EQUIV. FIRE SEVERITY (MIN)</u>
		a. PA cable/FRP		0
		b. Cable insulation		0
		c. Lube oil		0
		d. Transient/Other		0
		e. Plastic	4 lb	0.20
DEVIATION REQUEST:		AREA =	308 ft ²	TOTAL 0.20 min.
None				

TABLE 9A-101

FIRE HAZARD ANALYSIS TABULATION

ROOM: Fan Room		FIRE AREA: IS2, Intake Structure Div. II		
ROOM NO. 310/311	BLDG.	Intake Structure	ELEV. 122	
MECH SHUTDOWN DIVISION II	SAFE SHUTDOWN EQUIPMENT AND CABLE:		FIRE DETECTION TYPE	
	Division II Intake Structure Exhaust Fans 1BV504 and 1DV504. Power and control cables for exhaust fan and dampers.		None	
			EMERG. LIGHTS	
			None	
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment, which has I I I.G.2.a separation, will be used for safe shutdown.		CONSTRUCTION:	FIRE SUPPRESSION TYPE	
		<u>Walls:</u>	H ₂ O hose 1BHR500 Portable extinguishers	
		North	3 hour	
		East	Unrated	
		South (@ col. line 6)	3 hour	
		West	Unrated	
		<u>Floor:</u>	Unrated	
		<u>Ceiling:</u>	Unrated	
		<u>Doors And Hatches:</u>	Unrated	
		<u>Reference Drawings</u>		
<u>Elec. Drawings</u>	E-1504-0. Sheet 6			
<u>Fire Drawings</u>	Figures 9.5-11 and 9.5-12			
		COMBUSTIBLES:		
		MATERIAL:	QUANTITY	EQUIV. FIRE SEVERITY (MIN)
		a. PA cable/FRP		0
		b. Cable insulation		0
		c. Lube oil		0
		d. Transient/Other		0
		e. Plastic	4 lb	0.31
AREA =	192 ft ²	TOTAL 0.31 min.		
DEVIATION REQUEST: None				

TABLE 9A-101
FIRE HAZARD ANALYSIS TABULATION

ROOM: Fan Room

Fire Area: IS2, Intake Structure Div. II

ROOM NO. 312		BLDG. Intake Structure	ELEV. 122	FIRE DETECTION TYPE:	FIRE SUPPRESSION TYPE:		
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE:			None	H ₂ O hose 1BHR500 Portable extinguisher		
II	Division II Intake Structure Exhaust Fans 18V503 and 10V503. Power and control cables for supply fans and dampers.			EMERG. LIGHTS: None			
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: None. Redundant Division I equipment has III.G.2.a separation and will be used for safe shutdown.				CONSTRUCTION:	FIRE RATING:		
				<u>Walls:</u>			
				North		3 hour	
				East		Unrated	
				South		Unrated	
		West		Unrated			
				<u>Floor:</u>	Unrated		
				<u>Ceiling:</u>	Unrated		
				<u>Doors and Hatches:</u>	Unrated		
				<u>Reference Drawings:</u>			
				Elec. Drawings - E-1504, Sheet 6 Fire Drawings - Figures 9.5-11 and 9.5-12			
				COMBUSTIBLES:	EQUIV. FIRE		
				<u>MATERIAL:</u>	<u>QUANTITY</u>	<u>SEVERITY (MIN.)</u>	
				a. Cable insulation		0	
				b. Lube oil		0	
				c. Other		0	
		d. Transient		0			
DEVIATION REQUEST: None				AREA = 192 ft ²	TOTAL	0 min.	

TABLE 9A-102

FIRE HAZARDS ANALYSIS TABULATION

ROOM:		Traveling Screen and Motor Area		FIRE AREA:		IS3 Traveling Screen and Motor Area	
ROOM NO.	213, 313	BLDG.	Intake Structure	ELEV.	100' and 114'	FIRE DETECTION TYPE	FIRE SUPPRESSION TYPE
MECH SHUTDOWN DIVISION	SAFE SHUTDOWN EQUIPMENT AND CABLE: Traveling screen motors 1AS501, 1BS501, 1CS501 and 1DS501. Traveling screen motor room fans. Power and control cables for traveling screens and traveling screen motor room fans.					IFD	H ₂ O hoses 1AHR500 and 1BHR500
						EMERG. LIGHTS	Portable extinguishers
						Yes	
						I & II	
						Walls:	
						North	Unrated
						East	Unrated
						South (at col. line 6)	Unrated
						West	Unrated
						Floor:	Unrated
						Ceiling:	Unrated
						Doors And Hatches:	Unrated
EFFECTS OF FIRE ON SAFE SHUTDOWN AND/OR RADIOACTIVE RELEASE: All the control cables are routed in conduits and motors are enclosed in casings. This area will not be used for storing any combustibles. The probability of losing all the traveling screens simultaneously is remote. Loss of all four screens simultaneously is not an immediate concern for the safe shutdown of the plant. 							

TABLE 9A-103

THIS TABLE DELETED

TABLE 9A-104

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Figure F9A-1 intentionally deleted.

Refer to Plant Drawing E-6604-0 SH 1 in DCRMS

Figure F9A-2 intentionally deleted.

Refer to Plant Drawing E-6604-0 SH 3 in DCRMS

Figure F9A-3 intentionally deleted.

Refer to Plant Drawing E-6604-0 SH 4 in DCRMS

Figure F9A-4 SH 1-2 intentionally deleted.

Refer to Plant Drawing E-0217-0 sheets 1 and 6 in DCRMS

Figure F9A-5 intentionally deleted.

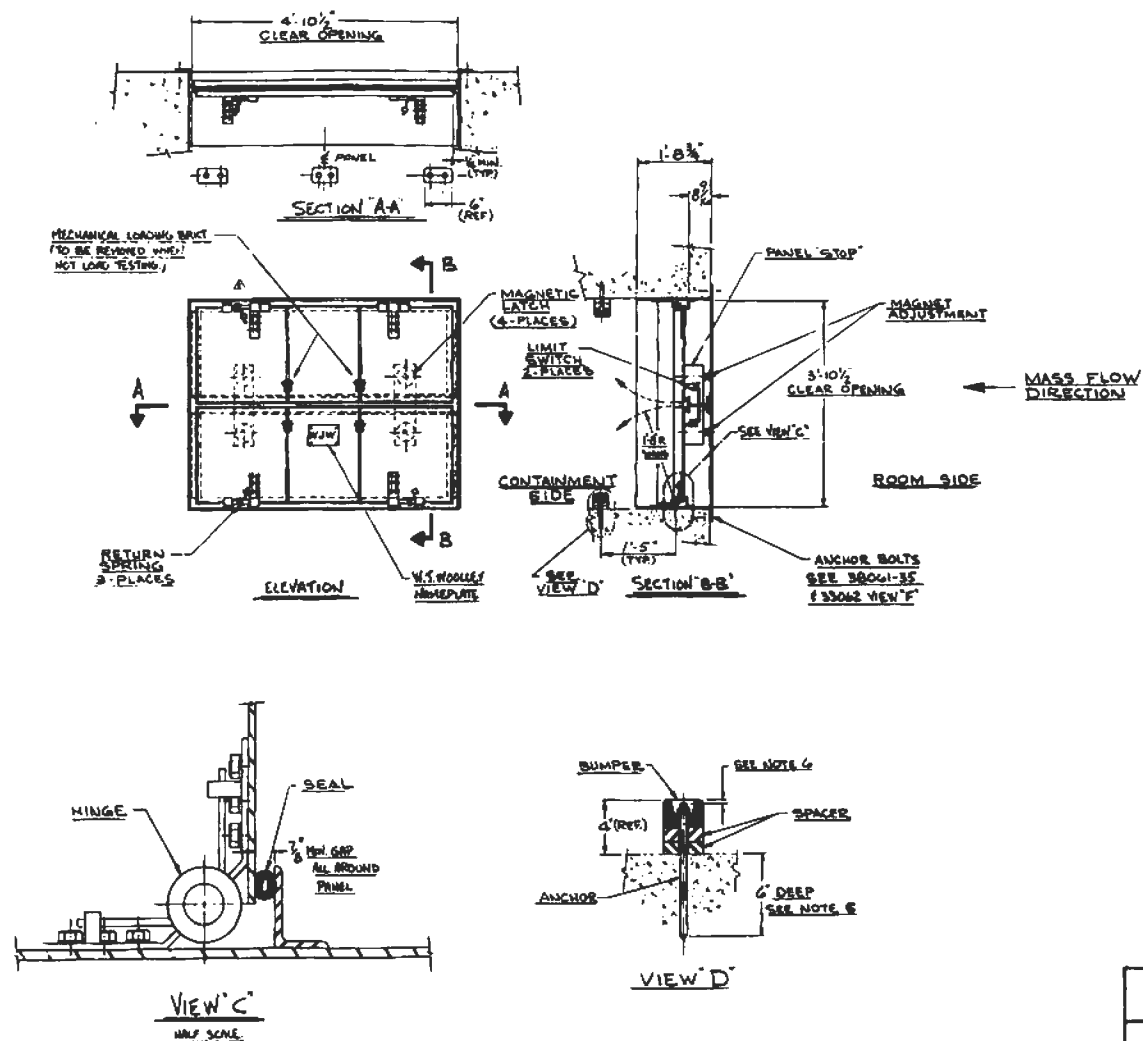
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Figure F9A-6 intentionally deleted.

Refer to Plant Drawing E-6603-0 in DCRMS

Figure F9A-7 intentionally deleted.

Refer to Plant Drawing E-0085-0 in DCRMS



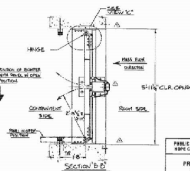
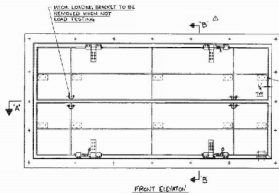
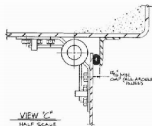
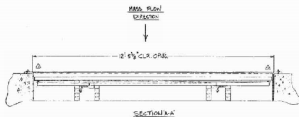
REVISION 0
APRIL 11, 1988

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

PRESSURE RELIEF BLOWOUT PANEL -
RCIC

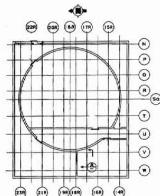
UPDATED FSAR

FIGURE 9A-8

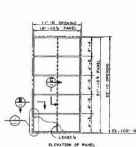


REV B000 0
NOV 11, 1999

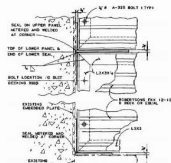
PUBLIC SERVICE ELECTRIC AND GAS COMPANY KEMO CREEK 5 MILE LONG SUBSTATION
PRESSURE RELIEF BLOWOUT PANEL - RHR AND HPCI
UPDATED YEAR: FIGURE SA-9



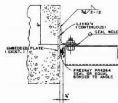
KEY PLAN
EQUIPMENT ACCESS PANEL LOCATION
ON CL. 100'-0"



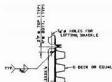
SECTION A



DETAIL 1



SECTION B



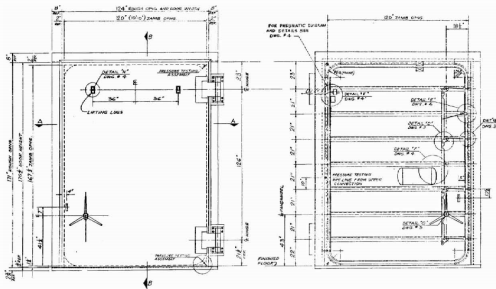
SECTION C

REVISION 8
APRIL 11, 1988

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION
REACTOR BUILDING P.T. EQUIPMENT
ACCESS PANEL ELEV., SECTION &
DETAILS SACS ROOM

UPDATED PS&R

FIGURE 9A.10



EXTERIOR ELEVATION
(2) DOOR TYPE C-6 END AS SHOWN
SIZE # 5500 R # 1140 D
(SCALE 3/4"=1'-0")

INTERIOR ELEVATION
(SCALE 3/4"=1'-0")

PUBLIC SERVICE ELECTRIC AND GAS COMPANY HOPE CREEK NUCLEAR GENERATING STATION	
OUTLINE PRESSURE TIGHT DOOR	
UPDATED FSAR	Sheet 1 of 2 FIGURE 9A-11

REVISION 1
APRIL 11, 1988

SECURITY - RELATED
INFORMATION WITHHELD
UNDER 10 CFR 2.390

REVISION 0
APRIL 11, 1988

PSEG NUCLEAR, L.L.C.
HOPE CREEK NUCLEAR GENERATING STATION

LOWER CONTROL EQUIPMENT ROOM,
ELEVATION 102'-0"

Updated FSAR

Fig. 9A-12

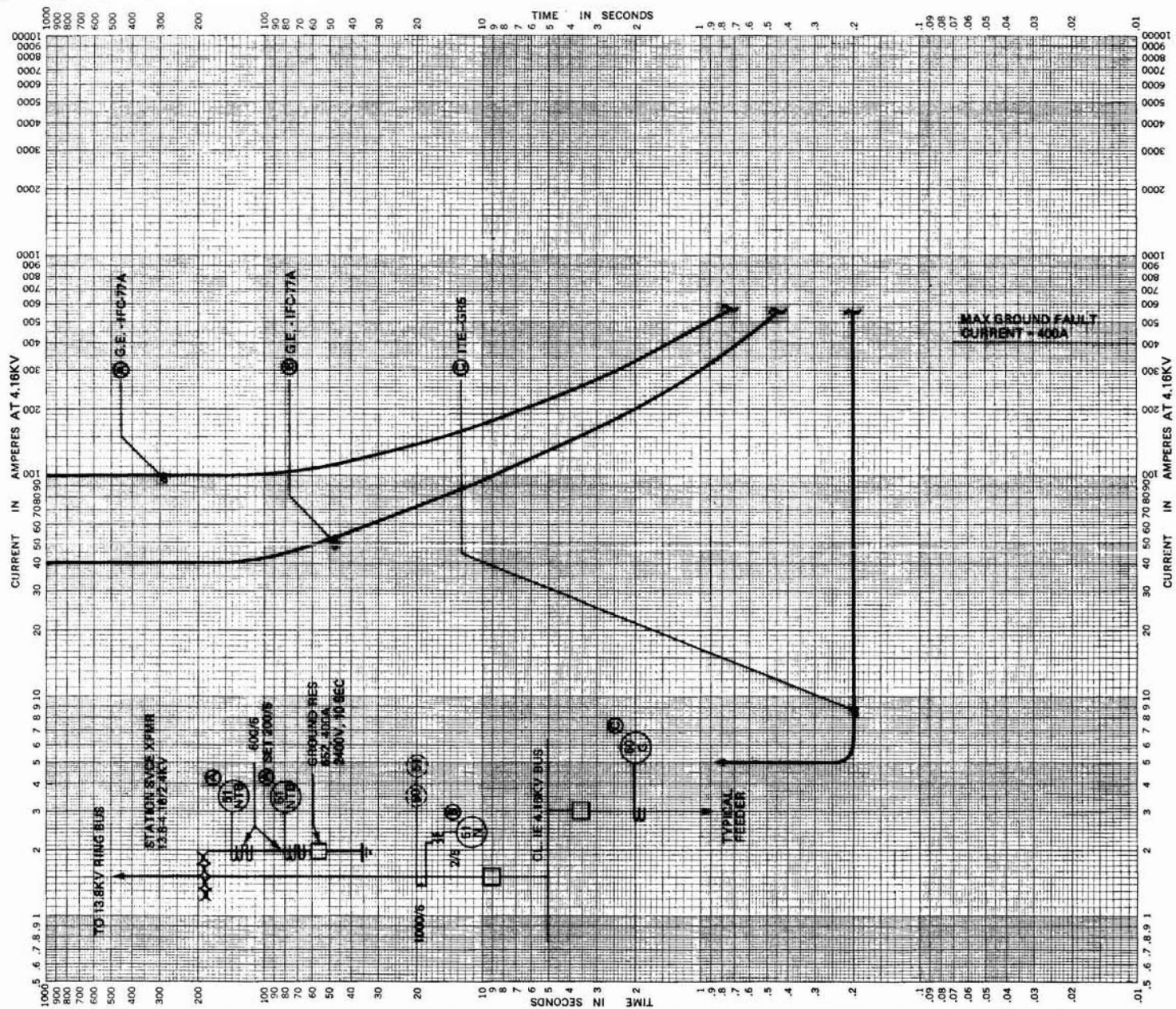
SECURITY - RELATED
INFORMATION WITHHELD
UNDER 10 CFR 2.390

REVISION 0
APRIL 11, 1988

PSEG NUCLEAR, L.L.C.
HOPE CREEK NUCLEAR GENERATING STATION

UPPER CONTROL EQUIPMENT ROOM,
ELEVATION 163'-6"

Updated FSAR Fig. 9A-13



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APRIL 11, 1988

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

CLASS IE 4.16KV SYSTEM - GROUND
RELAY COORDINATION

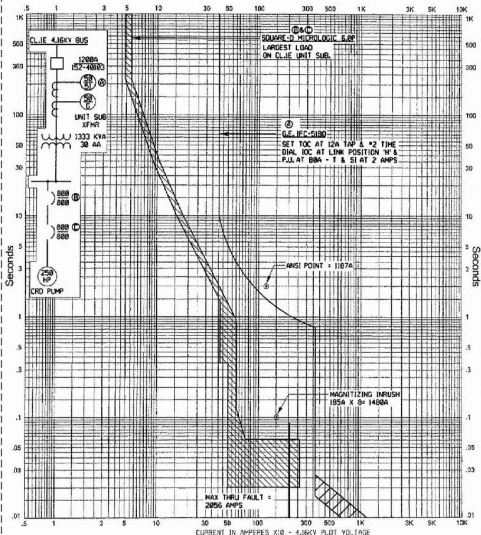
UPDATED FSAR

FIGURE 9A-14

FIGURE DELETED

Revision 19, Nov 5, 2012

PSEG Nuclear, LLC HOPE CREEK NUCLEAR GENERATING STATION	Hope Creek Nuclear Generating Station CLASS 1E 4.16KV BUS-UNIT SUBSTATION TRANSFORMER FEEDER COORDINATION
	Updated FSAR Figure 9A-15



Revision 15, October 27, 2006

PSEG Nuclear, LLC
HOPE CREEK NUCLEAR GENERATING STATION

Hope Creek Nuclear Generating Station
CLASS 1E 4.16kV BUS UNIT SUBSTATION
TRANSFORMER FEEDER COORDINATION

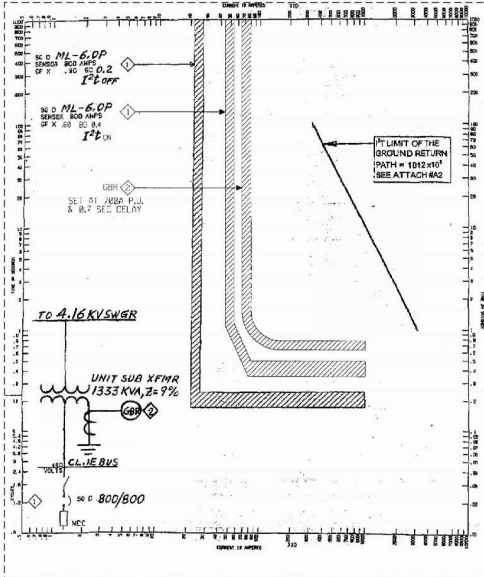
Updated FSAR

Figure 9A-15A

FIGURE DELETED

Revision 19, Nov 5, 2012

PSEG Nuclear, LLC HOPE CREEK NUCLEAR GENERATING STATION	Hope Creek Nuclear Generating Station CLASS 1E 480V LOAD CENTER GROUND RELAY COORDINATION
	Updated FSAR Figure 9A-16



Revision 15, October 27, 2006

Hope Creek Nuclear Generating Station
CLASS 1E 480V LOAD CENTER
GROUND RELAY COORDINATION

Updated FSAR

Figure 9A-16A

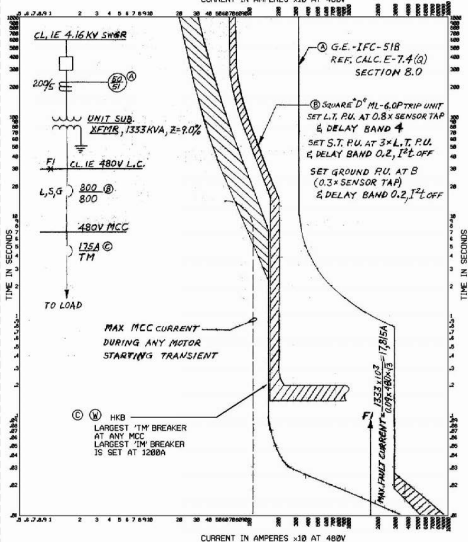
PSEG Nuclear, LLC

HOPE CREEK NUCLEAR GENERATING STATION

FIGURE DELETED

Revision 19, Nov 5, 2012

PSEG Nuclear, LLC HOPE CREEK NUCLEAR GENERATING STATION	Hope Creek Nuclear Generating Station CLASS 1E 480V LOAD CENTER MCC FEEDER COORDINATION
	Updated FSAR Figure 9A-17

CURRENT IN AMPERES $\times 10$ AT 480V

Revision 15, October 27, 2006

PSEG Nuclear, LLC

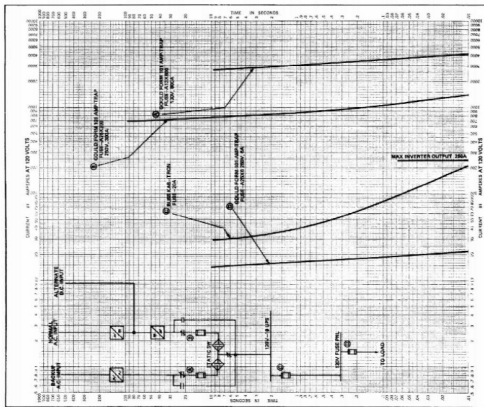
Hope Creek Nuclear Generating Station
CLASS IE 480V LOAD CENTER
MCC FEEDER - COORDINATION

HOPE CREEK NUCLEAR GENERATING STATION

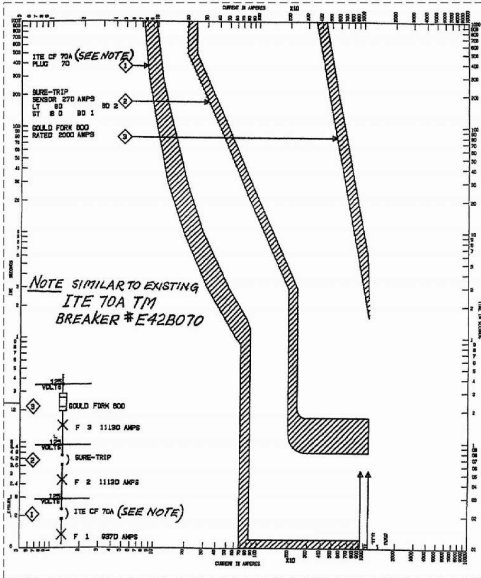
Updated FSAR

Figure 9A-17A

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REVISION 5 APRIL 11, 1985	
PUBLIC SERVICE ELECTRIC AND GAS COMPANY RUPES CREEK NUCLEAR GENERATING STATION	
120V UPS SYSTEM FUSE COORDINATION	
UPDATED PS&R	FIGURE 9A-18



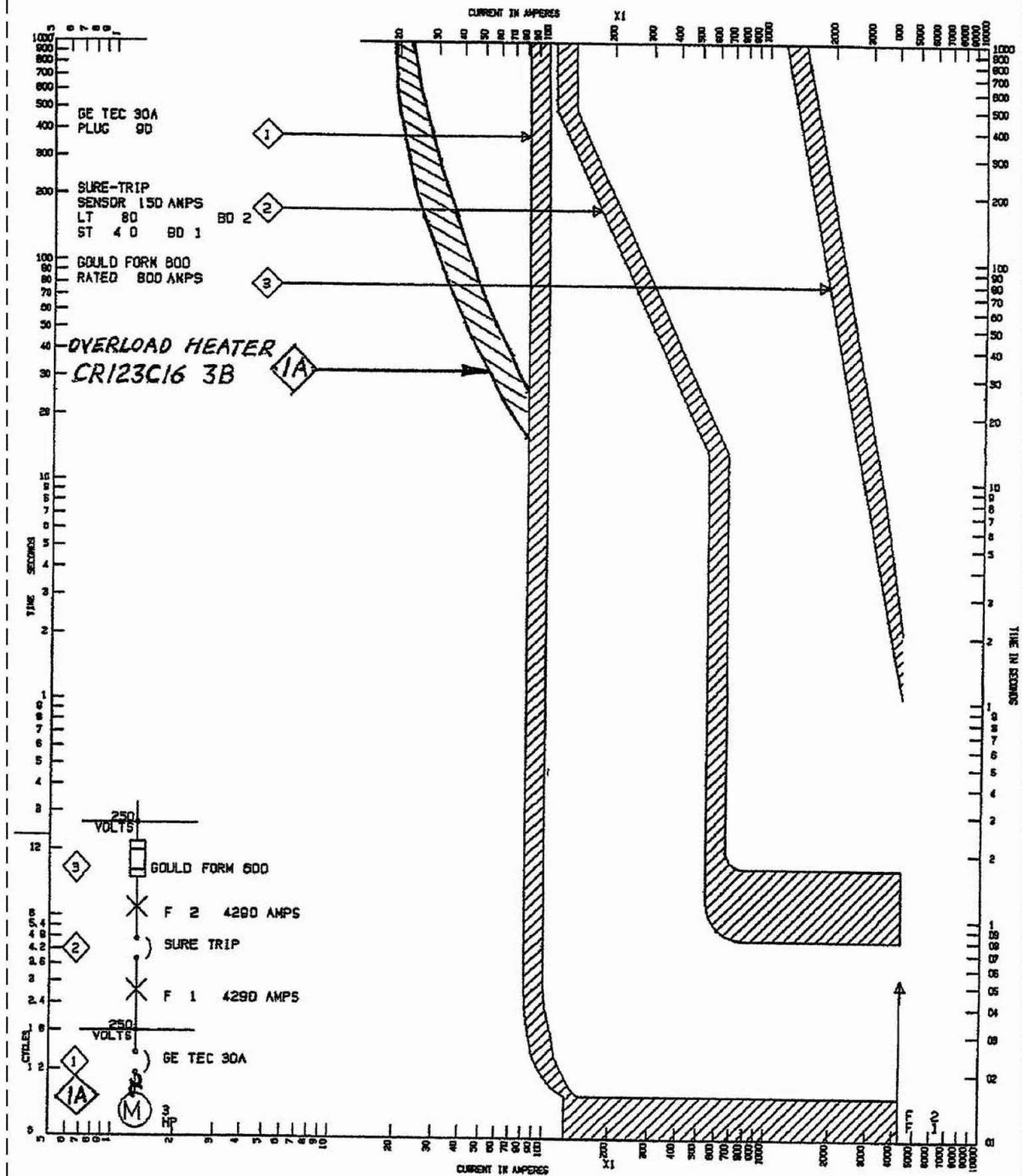
Revision 18, May 18, 2011

PSEG Nuclear, LLC
HOPE CREEK NUCLEAR GENERATING STATION

Hope Creek Nuclear Generating Station
CLASS 1E 125V DC SWGR-DISTR.
PANEL COORDINATION

Updated FSAR

Sheet 1 of 3
Figure 9A-19



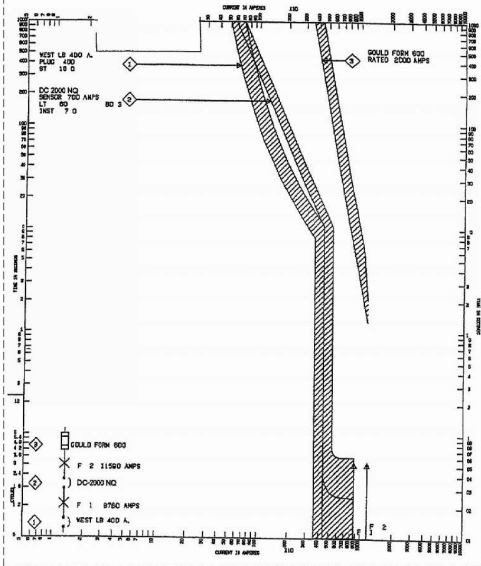
Revision 18, May 10, 2011

PSEG Nuclear, LLC
HOPE CREEK NUCLEAR GENERATING STATION

Hope Creek Nuclear Generating Station
CLASS IE 250V DC SWGR-RCIC
MCC FEEDER

Updated FSAR

Sheet 2 of 3
Figure 9A-19



Revision 18, May 18, 2011

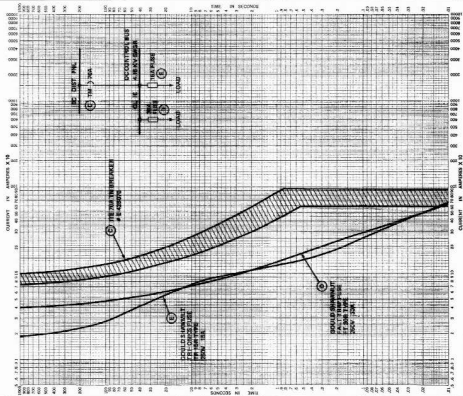
PSEG Nuclear, LLC
HOPE CREEK NUCLEAR GENERATING STATION

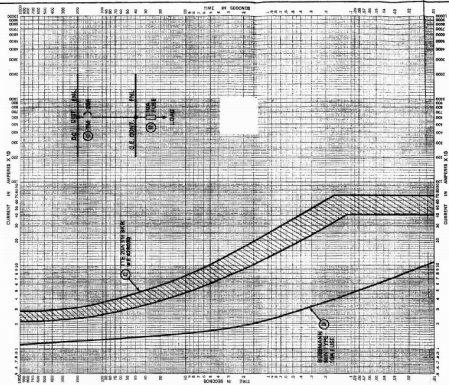
Hope Creek Nuclear Generating Station
CLASS II 125V DC SWGR-BATTERY
CHARGER

Updated FSAR

Sheet 3 of 3
Figure 9A-19

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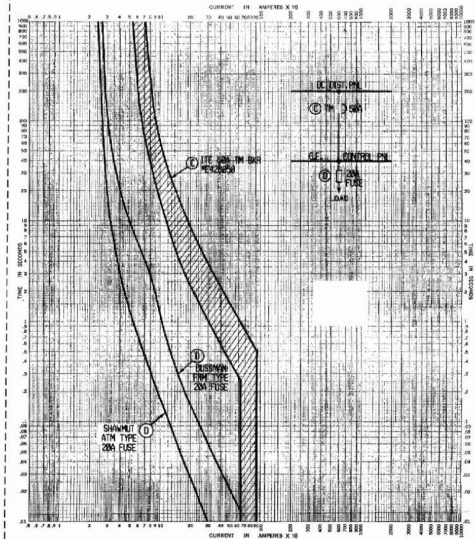
Revision 0
September 25, 1990

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
800V CHIEF RECLAR GENERATING STATION

CLASS 1E 125V DC DIST. PNL - GE
CONTROL PNL BERTFUSE
COORDINATION

UPDATED FSAR

Sheet 1 of 2
FIGURE 9A-21



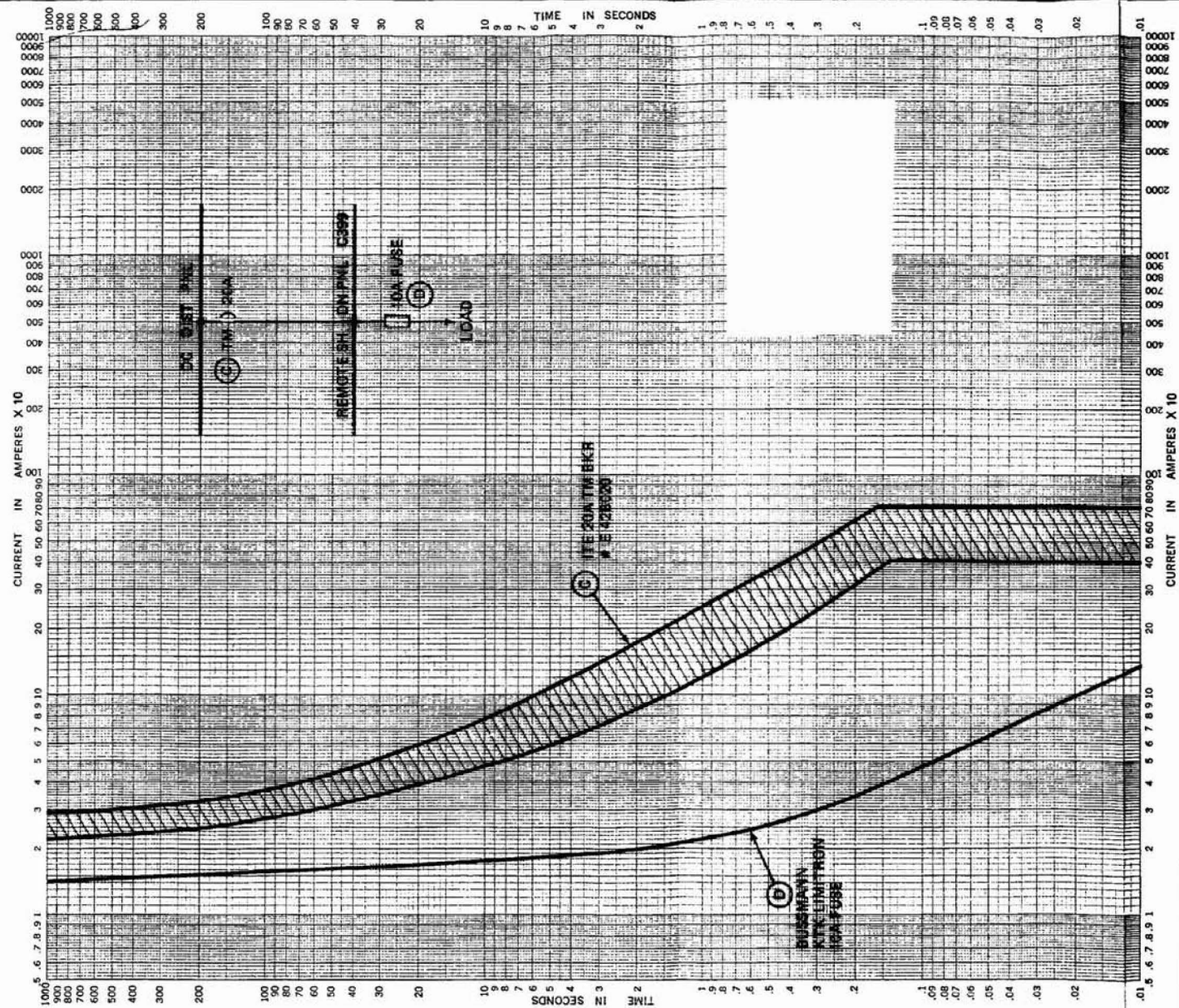
Revision 16, May 15, 2008

PSEG Nuclear, LLC
HOPE CREEK NUCLEAR GENERATING STATION

Hope Creek Nuclear Generating Station
CLASS 'E' 125V DC DIST. PNL - GE
CONTROL PNL BKR/FUSE COORDINATION

Updated FSAR

Figure 9A-21 sh. 2 of 2



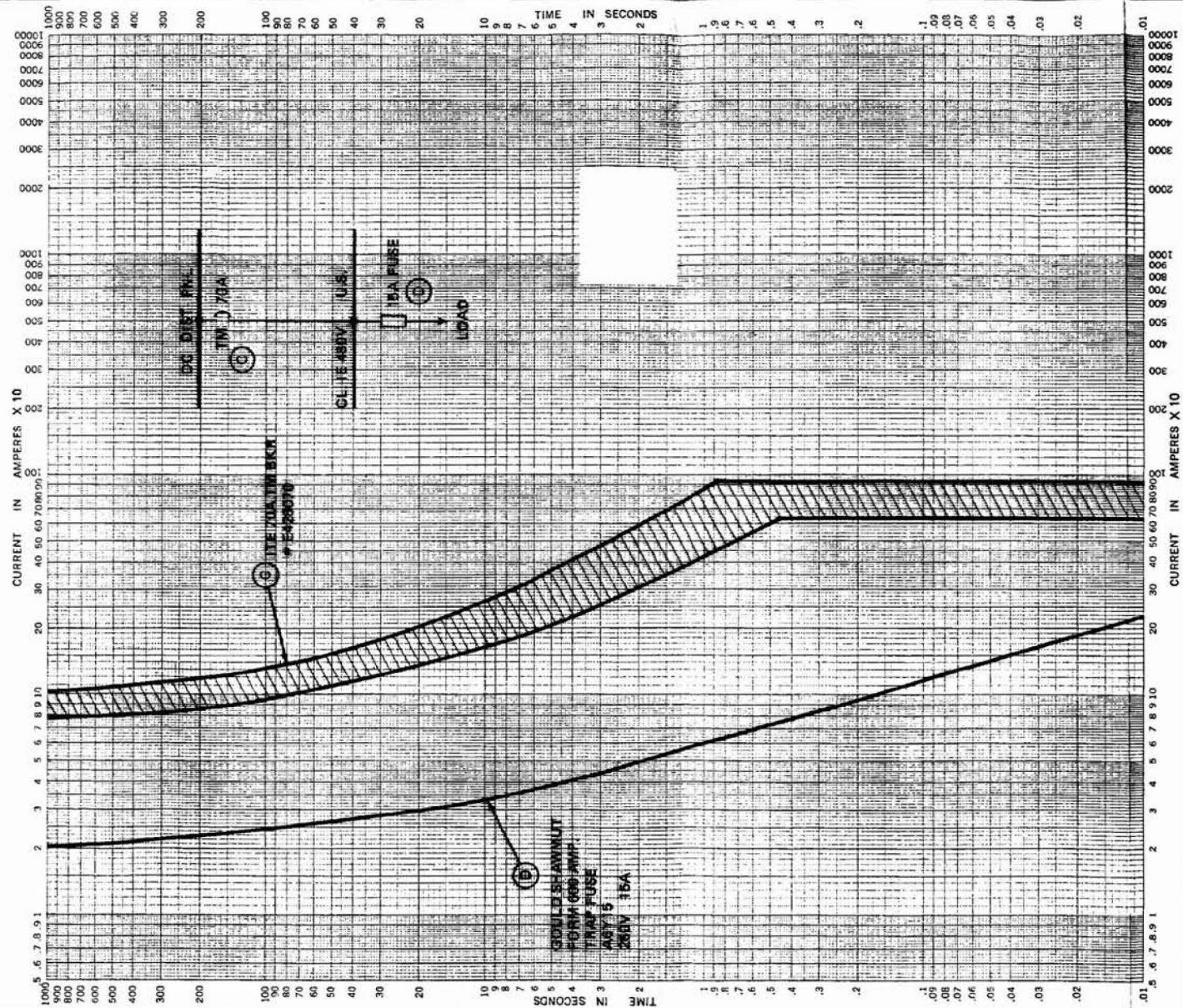
Revision 8
September 25, 1996

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

CLASS 1E 125V DC DIST. PNL — REMOTE
SHDN PNL 10C399 BKR/FUSE
COORDINATION

UPDATED FSAR

FIGURE 9A-23



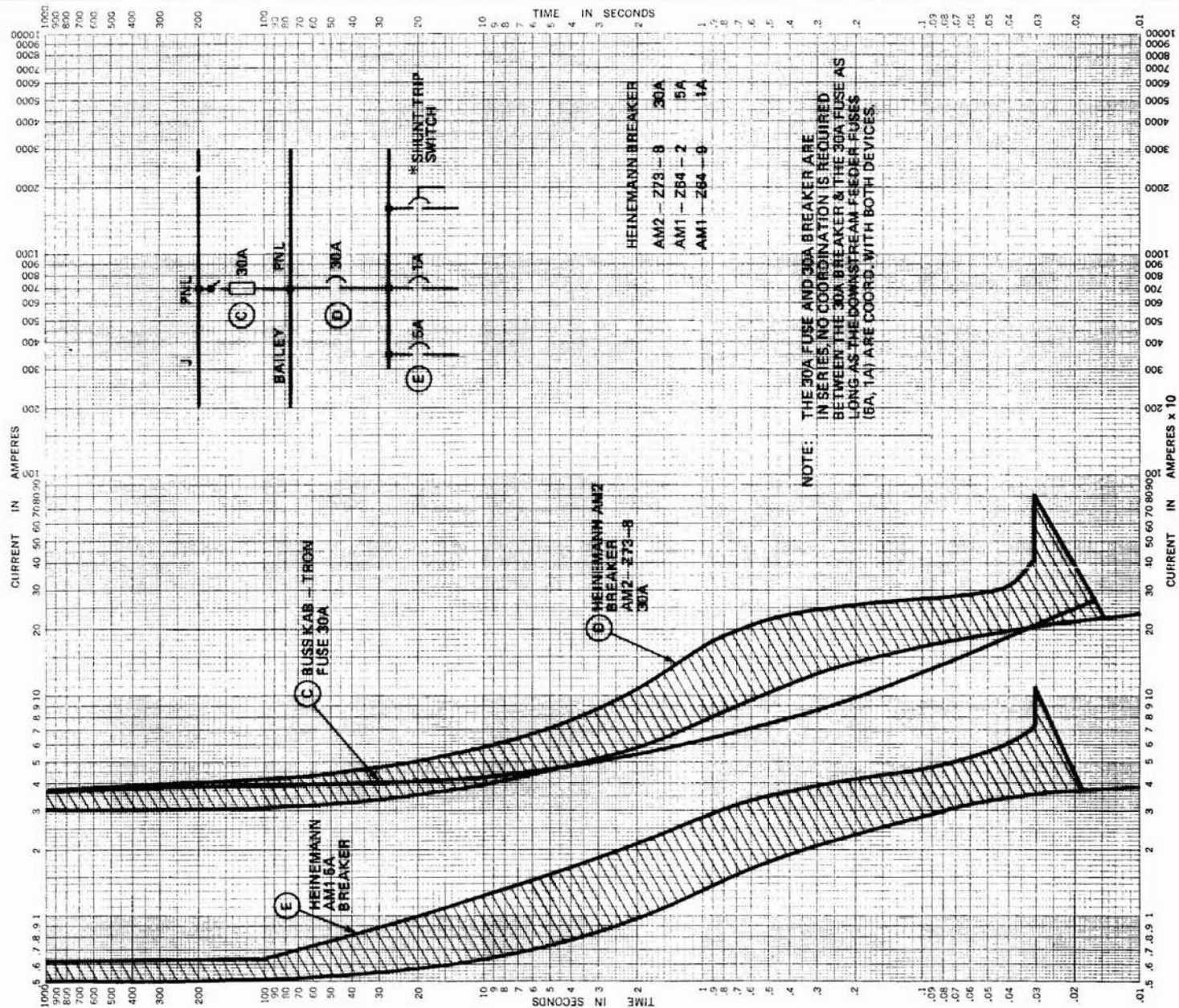
Revision 8
September 25, 1996

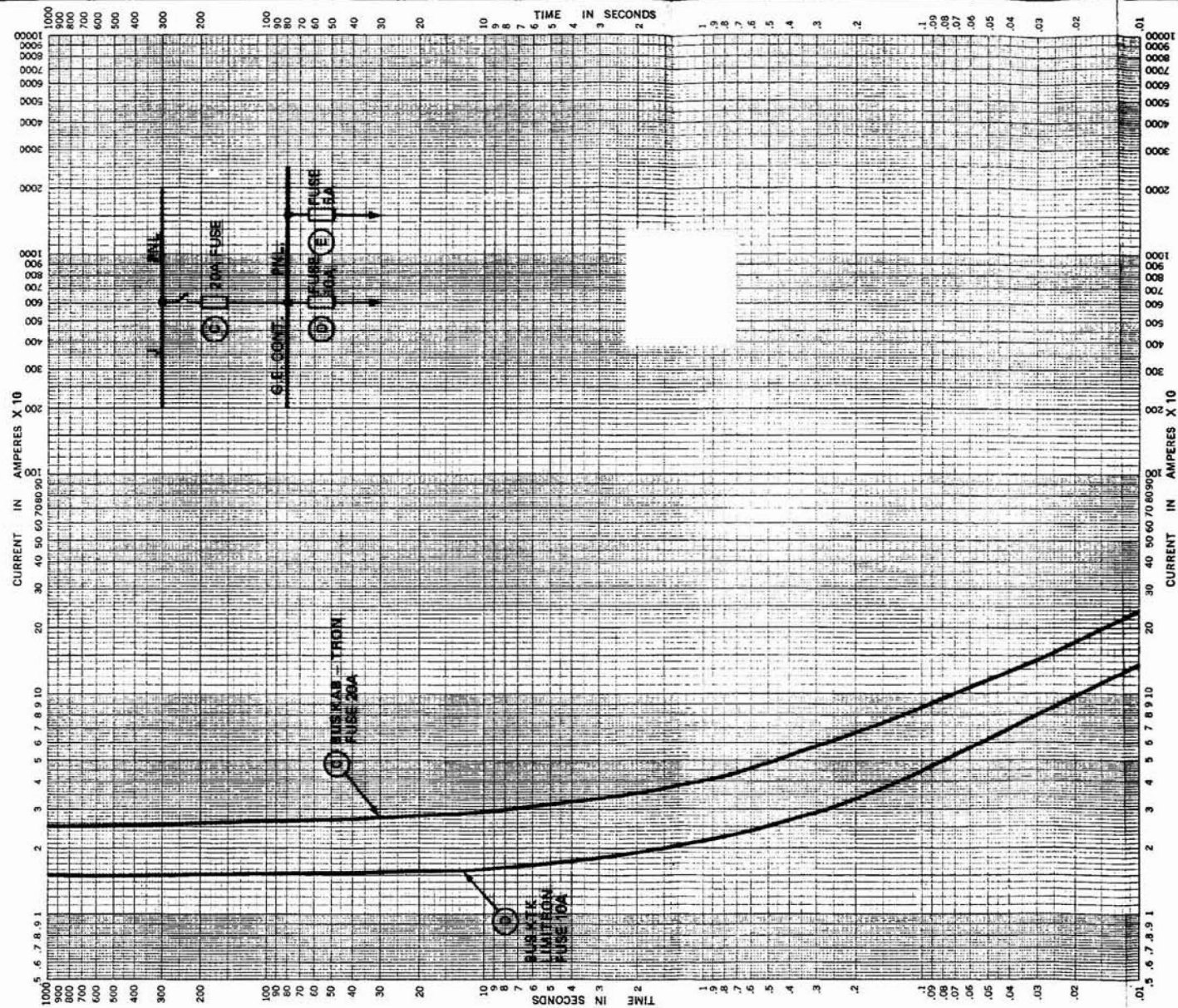
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

CLASS IE 125V DC DIST. PNL - 480V
SUBSTATION BKR/FUSE
COORDINATION

UPDATED FSAR

FIGURE 9A-24





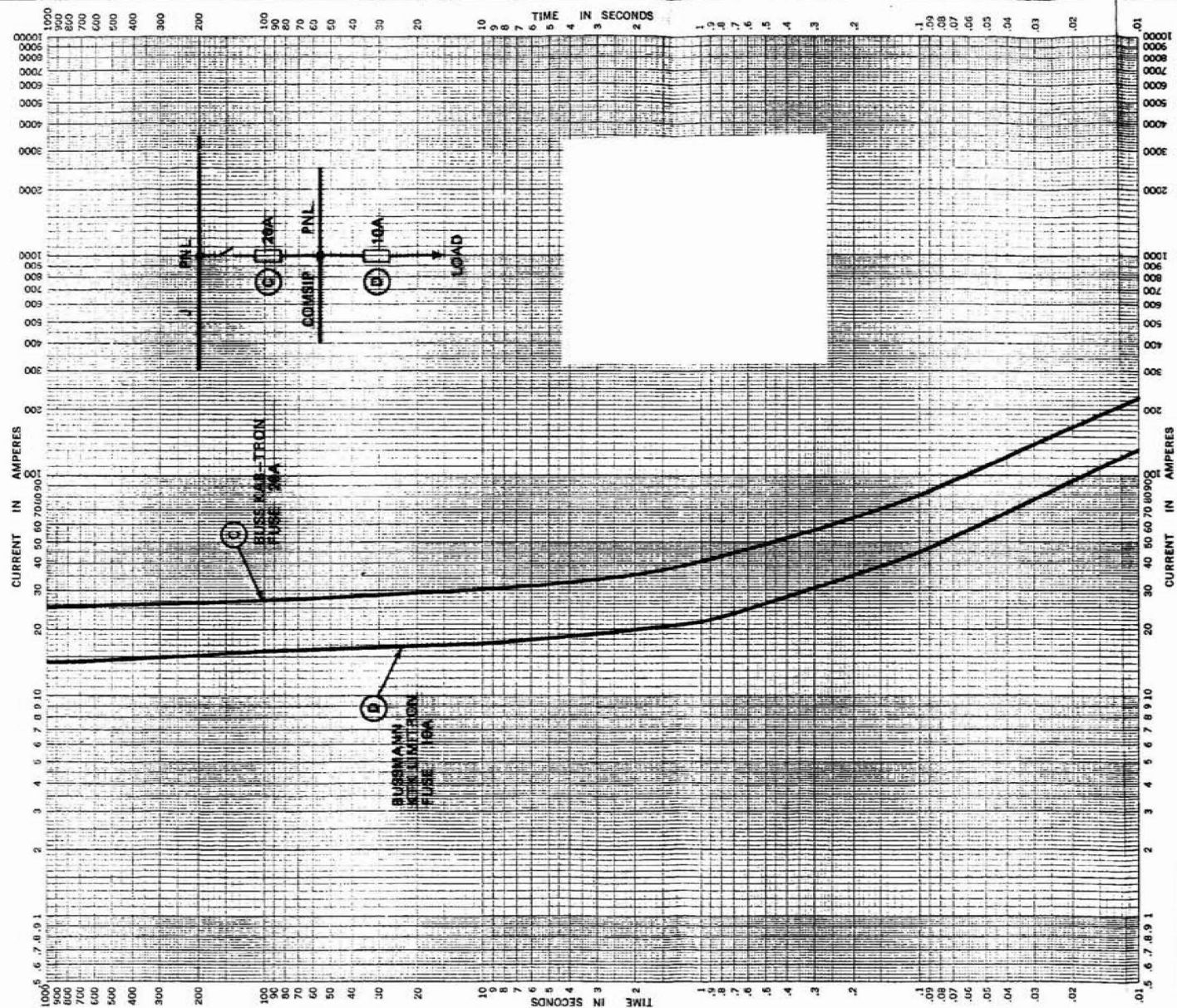
Revision 8
September 25, 1996

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

CLASS IE 120V AC J PNL - GE CONTROL
PNL FUSE/FUSE COORDINATION

UPDATED FSAR

FIGURE 9A-27



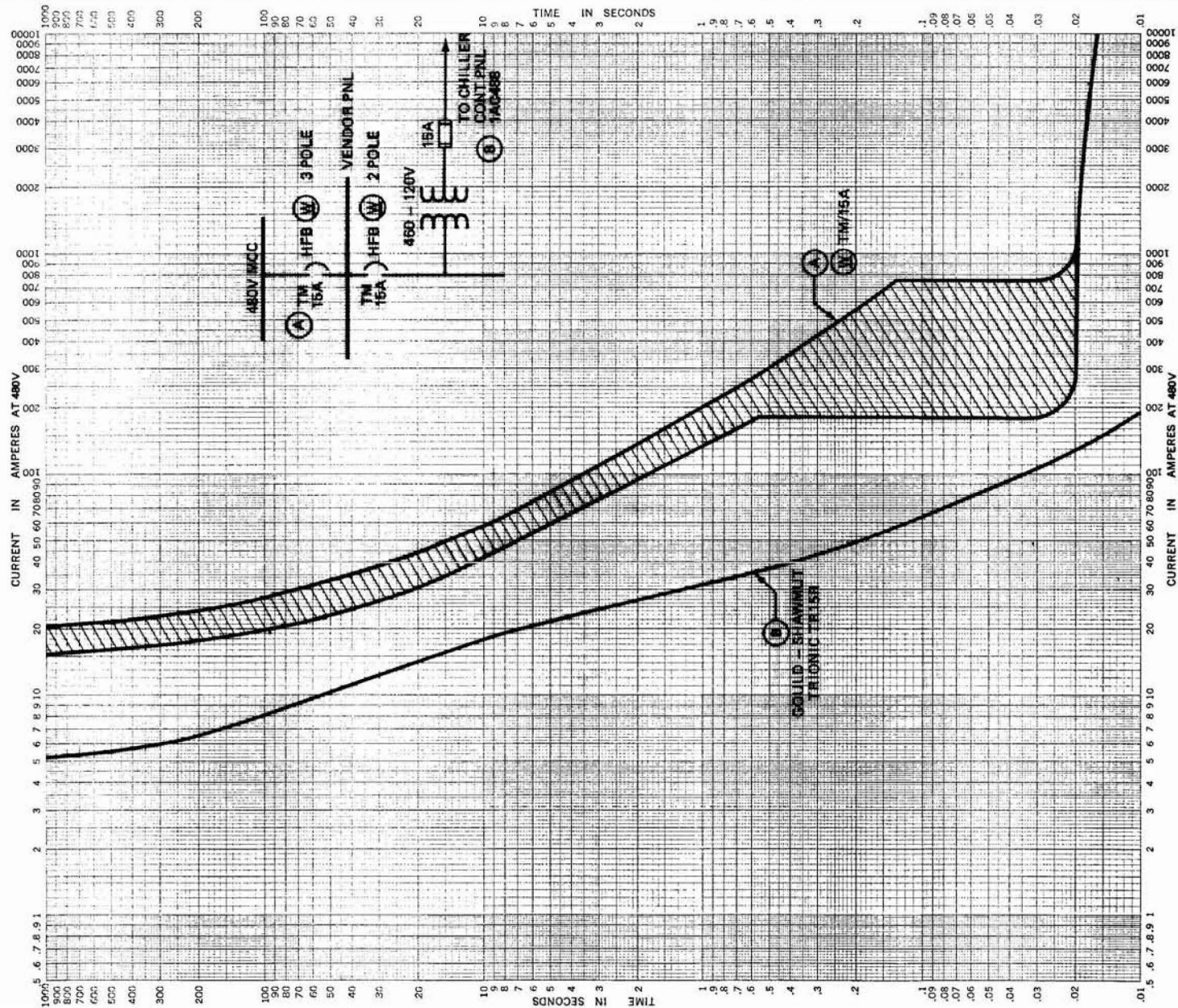
Revision 8
September 25, 1996

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

CLASS 1E 120V AC J PNL - COMSIP
PNL FUSE/FUSE COORDINATION

UPDATED FSAR

FIGURE 9A-28



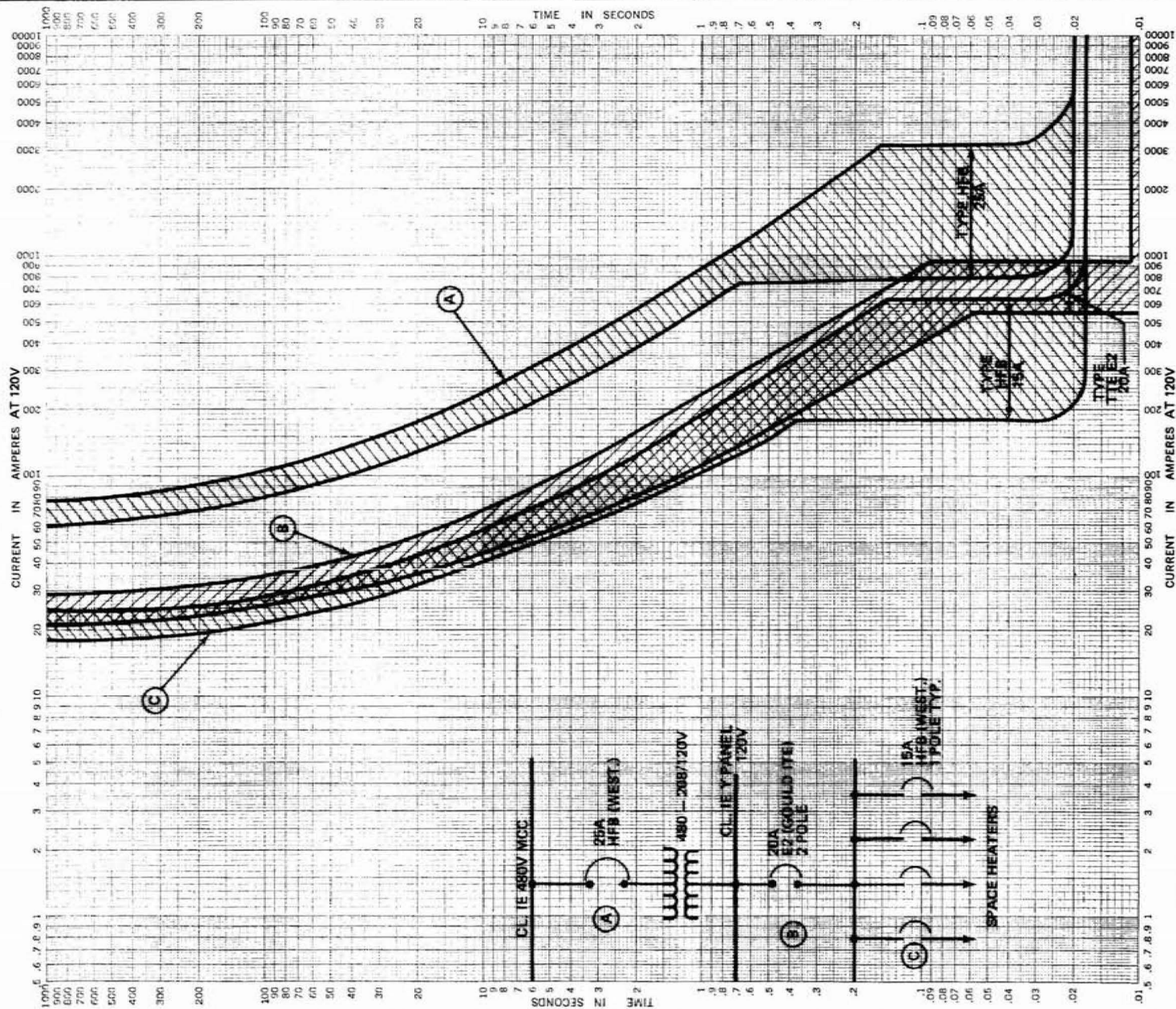
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APRIL 11, 1988

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

480V MCC TM CIRCUIT BREAKER/
CONTROL TRANSFORMER (VENDOR)
SECONDARY FUSE COORDINATION
(CHILLER CONTROL PNL - M-723)

UPDATED FSAR

FIGURE 9A-30



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HOPE CREEK NUCLEAR GENERATING STATION

CLASS IE 480V MCC TO Y PNL &
MISC. DEVICES COORDINATION

UPDATED FSAR

FIGURE 9A-31

Figure F9A-32 intentionally deleted.

Refer to Plant Drawing M-5112 in DCRMS

Figure F9A-33 intentionally deleted.

Refer to Plant Drawing M-5113 in DCRMS

Figure F9A-34 intentionally deleted.
Refer to Plant Drawing M-5114 in DCRMS

Figure F9A-35 intentionally deleted.
Refer to Plant Drawing M-5115 in DCRMS

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Refer to Plant Drawing M-5116 in DCRMS

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Refer to Plant Drawing M-5117 in DCRMS

Figure F9A-38 intentionally deleted.
Refer to Plant Drawing M-5118 in DCRMS

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Refer to Plant Drawing M-5119 in DCRMS

Figure F9A-40 intentionally deleted.
Refer to Plant Drawing M-5120 in DCRMS

Figure F9A-41 intentionally deleted.
Refer to Plant Drawing M-5121 in DCRMS

Figure F9A-42 intentionally deleted.
Refer to Plant Drawing M-5122 in DCRMS

Figure F9A-43 intentionally deleted.
Refer to Plant Drawing M-5123 in DCRMS

Figure F9A-44 intentionally deleted.
Refer to Plant Drawing M-5124 in DCRMS

APPENDIX 9B
DESIGN, ANALYSIS AND CONSTRUCTION
OF SPENT FUEL STORAGE RACKS

9B.1 SCOPE

This appendix describes the design, analysis and construction of the spent fuel racks.

9B.2 DESCRIPTION OF SPENT POOL AND RACKS

Section 9.1.2.2 contains a description of the spent fuel storage facility including the high density spent fuel storage racks. The spent fuel racks are of free standing design and are not attached to either the fuel pool wall or the fuel pool liner plate. Plant Drawings P-0011-0 and P-0047-1 show the spent fuel pool in relation to other plant structures. Figures 9.1-3 and 9.1-4 show details of the spent fuel racks.

The spent fuel racks are designed to withstand the postulated drop of a fuel bundle. Section 9.1.5 contains a description of the overhead heavy load handling systems for the Reactor Building polar crane including figures showing load paths for the crane.

9B.3 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS

All parts of the spent fuel racks, except the adjusting screws in the feet of each module and the poison material, are made from ASTM A240, Type 304L stainless steel. The adjusting screws are made from ASTM A564, Type 630 stainless steel. Boral is the poison material.

Design, fabrication and installation of the spent fuel racks are performed based upon Subsection NF requirements of Reference 9B-1 for Class 3 component supports.

9B.4 SEISMIC AND IMPACT LOADS

The seismic input for the spent fuel racks consists of floor response spectra for the spent fuel pool slab. Floor response spectra are developed from ground response spectra which comply with the requirements of Regulatory Guides 1.60 and 1.61. Acceleration time histories are developed for two horizontal directions and one vertical direction from the floor response spectra. These three time histories are imposed simultaneously. The peak responses from each direction are combined by square root of the sum of the squares in accordance with Regulatory Guide 1.92.

Impact loads due to fuel rattling are calculated using methods described in Section 9B.6. Impact loads are considered for local as well as overall effects on the rack design.

9B.5 LOADS AND LOAD COMBINATIONS

Loads and load combinations are in agreement with Table 1 of Reference 9B-2. Thermal effects are included by using decreased material properties at the applicable temperature level. Since the racks are free standing, there are no thermal stresses.

9B.6 DESIGN AND ANALYSIS PROCEDURES

Each fuel rack is idealized as a 3D finite element model using the ANSYS computer program. Figure 9B1 shows a five canister portion of a rack. The canisters and bottom grid plate are modeled with plate elements. The perimeter bar, which secures the canisters at the top, and the stiffening bars for the grid plate are modeled with beam elements. The thin stainless steel wrapper containing the neutron absorber and the stainless steel panels used to close off the alternate cavities are not modeled but their masses are included. The fuel assemblies are modeled as beam elements.

Figure 9B-2 shows a double rack model in schematic form. 3D interface elements are used to represent the fuel to canister

clearance as well as the rack to rack gap. These nonlinear elements reproduce forces due to fuel rattling and possible rack to rack interaction. 3D gap elements with material properties based on the interface friction coefficients are used to simulate the corner supporting feet which may slide or lift off the pool floor. Two bounding values of friction coefficient (0.2 and 0.8) are used in order to identify the most critical conditions for sliding and for maximum reactions at the support feet.

Structural damping coefficients of 2 percent for OBE and 4 percent for SSE are used, except that impact damping of 10 percent of critical is used for the gap elements since impact dissipates substantial amounts of energy. With 20 feet of submergence, sloshing effects are negligible and therefore are neglected. Fluid damping effects are also neglected. To simulate the immersion effects, all the internal water entrapped within the rack envelope is added to the horizontal mass. The external water between adjacent racks is modeled using the hydrodynamic coupling element shown in Figure 9B-2.

A parametric study, which considers varying amounts of fuel in a single rack, is conducted to determine which of the following conditions should be considered in order to maximize the seismic response of the racks.

1. Rack empty
2. Rack one-third full
3. Rack two-thirds full
4. Rack full

For the partially loaded conditions, eccentricity of the fuel on one side of the rack is considered.

9B.7 STRUCTURAL ACCEPTANCE CRITERIA

Allowable stresses are in agreement with Table 1 of Reference 9B-2. Stress levels for beam elements comply with the requirements of Appendix XVII to Reference B-1. Stress levels for plate elements comply with rules for plate and shell type supports since stress fields in these components are biaxial.

The spent fuel pool is capable of withstanding, without adverse deformation, the maximum loads at the location of the rack feet. For the load drop condition, local permanent deformation possibly requiring repair is permissible provided that overall stresses do not exceed values permitted for Level D service limits and the resulting deformation does not permit the fuel configuration K_{eff} to exceed 0.95.

9B.8 MATERIALS, QUALITY CONTROL AND SPECIAL CONSTRUCTION TECHNIQUES

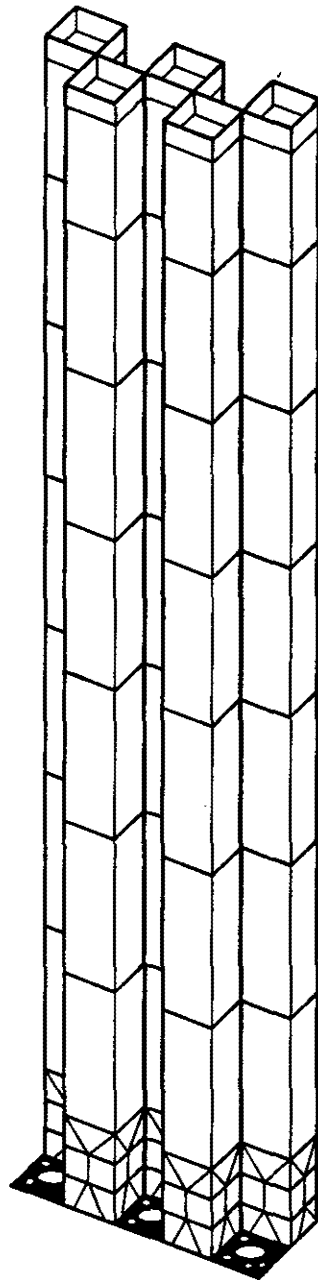
Materials are described in Section 9B.3. Quality control procedures for materials, fabrication and design control and verification comply with ANSI N45.2. Conventional construction methods are used.

As described in Section 9.1.2.2.2.2, approximately 25 percent of the total spent fuel storage capacity will be provided by racks installed prior to initial plant operation. The remaining racks will be installed later. The initially installed racks are generally located at the north end of the spent fuel pool. Therefore, the additional racks can be installed later without being transported over existing racks which contain spent fuel.

9B.9 REFERENCES

9B-1 ASME Boiler and Pressure Vessel Code, Section III, Division 1, 1980 Edition, Summer 1982 Addenda.

NRC NUREG-0800, SRP Section 3.8.4, Appendix D, Rev. 0 July 1981.



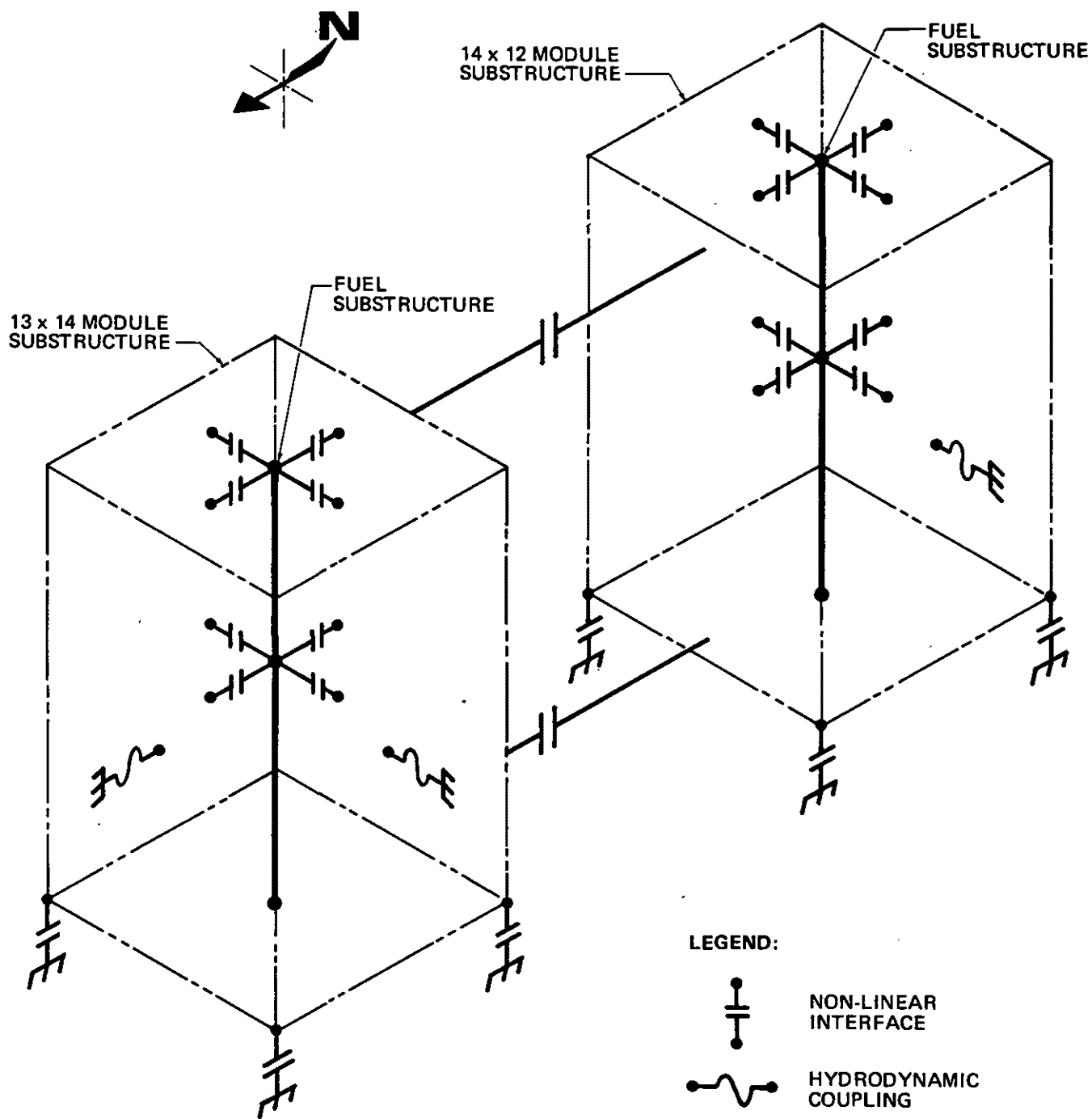
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PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

MODEL FOR CANISTER AND
PORTION OF BOTTOM GRID

UPDATED FSAR

FIGURE 9B-1



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PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK NUCLEAR GENERATING STATION

DOUBLE RACK MODEL FOR DETAILED
SEISMIC ANALYSIS ON FUEL/RACK
AND RACK/RACK INTERACTION

UPDATED FSAR

FIGURE 9B-2