DESCRIPTION OF PROPOSED CHANGES

The proposed changes are noted in the markup of the Technical Specifications provided in Attachment 3 to this submittal. A brief description of the changes is provided below.

- Technical Specification 3.8.1.2 ELECTRICAL POWER SYSTEMS, A.C. SOURCES, SHUTDOWN

  The current specification requires one offsite circuit and two Standby Diesel Generators to be operable during Modes 5 and 6. The proposed change splits 3.8.1.2 into three specifications, adding a new 3.8.1.3 and 3.8.1.4.

  The requested revision to 3.8.1.2 provides the requirements for Mode 5 with the Reactor Coolant System loops filled. It will require the following A.C. electrical power sources to be operable: a) one circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and b) one Standby Diesel Generator with a separate fuel tank containing a minimum volume of 60,500 gallons of fuel.

  Revisions to the ACTION statement of 3.8.1.2 are also proposed. Two required actions are to be added: 1) suspend all operations with a potential for draining the reactor vessel and 2) initiate actions to restore the inoperable power source. The action to depressurize and vent the Reactor Coolant System is proposed for deletion. Also, the last action requirement in the current specification dealing with reduced reactor coolant inventory operation, which is no longer required based on the revised applicability statement, is to be deleted. This latter requirement will be retained in the new proposed A.C. power source technical specification for reduced inventory operation; see the following discussion of 3.8.1.3.

  The new 3.8.1.3 provides the A.C. power source requirements for Modes 5 and 6 during reduced reactor coolant inventory conditions. Reduced inventory conditions include Mode 5 with the Reactor Coolant System loops not filled and Mode 6 when the water level in the refueling cavity is less than 23 feet above the reactor vessel flange. The proposed requirements of this specification are the same as those required in the current specification; however, the applicability has been narrowed to be consistent with the Residual Heat Removal System technical specifications (3.4.1.4.1 and 3.4.1.4.2). The new specification will require the following A.C. electrical power sources to be operable: a) one circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and b) two Standby Diesel Generators, each with a separate fuel tank containing a minimum volume of 60,500 gallons of fuel. The proposed ACTION statement is the same as in the current specification with the addition of the requirement to suspend those operations with a potential to drain the reactor vessel. The proposed surveillance requirement is the same as in the current specification. However, the surveillance requirements and the fuel requirements do not apply to the alternate diesel generator.

The new Technical Specification 3.8.1.3 includes a footnote which would allow the use of an alternate diesel generator unit as a substitute for one Standby Diesel Generator during reduced reactor coolant inventory conditions. The South Texas Project intends to provide a rented diesel generator capable of powering, at a minimum, the equipment required for shutdown cooling.

The new 3.8.1.4 provides the A.C. power source requirements for Mode 6 with the water level greater than 23 feet above the reactor vessel flange. The Limiting Condition for Operation, the ACTION statement, and the surveillance requirement are the same as those proposed for 3.8.1.2. The new specification will require the following A.C. electrical power sources to be operable: a) one circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and b) one Standby Diesel Generator with a separate fuel tank containing a minimum volume of 60,500 gallons of fuel.

- Technical Specification 3.8.2.2 ELECTRICAL POWER SYSTEMS, **D.C. SOURCES, SHUTDOWN**

The current specification requires both the Channel I and the Channel IV batteries, along with their two battery chargers, to be operable during Modes 5 and 6. In order to simplify this specification, as well as to ensure consistency with the power distribution specifications (3.8.3.2, discussed below), the wording of NUREG 1431, Improved Standard Technical Specifications for Westinghouse Plants, is proposed.

The proposed change to 3.8.2.2 will provide the requirements for all conditions during Modes 5 and 6. It will require those D.C. power sources required to support the power distribution trains required in Technical Specification 3.8.3.2 to be operable. The proposed changes to the ACTION statement include: 1) revise wording to refer to the D.C. power subsystem rather than specific components, 2) add the requirement to suspend operations involving the potential for draining the reactor vessel, 3) add an alternative action to declare the supported equipment inoperable and 4) delete the action to depressurize and vent the Reactor Coolant System.

- Technical Specification 3.8.3.2 ELECTRICAL POWER SYSTEMS, **ONSITE POWER DISTRIBUTION, SHUTDOWN**

The current specification requires both Train A and Train C of the Class 1E power distribution system. In order to simplify this specification, as well as to ensure consistency with the fluid systems and instrumentation specifications, the wording of the NUREG 1431, Standard Technical Specifications for Westinghouse Plants, is proposed. This change is compatible with those proposed for the A.C. and D.C. power source technical specifications described previously.

The proposed change to 3.8.3.2 will provide the requirements for all conditions during Modes 5 and 6. It will require the operability of those portions of the electrical power distribution systems necessary to support the equipment required to be operable. The proposed changes to the ACTION statement include: 1) revise wording to reflect the revised Limiting Condition for Operation, 2) add the requirement to suspend operations involving the potential for draining the reactor vessel, 3) add an alternative action to declare the supported equipment inoperable and 4) delete the action to depressurize and vent the Reactor Coolant System.

- Technical Specification 3.7.7 PLANT SYSTEMS, **CONTROL ROOM MAKEUP AND CLEANUP FILTRATION SYSTEM**

The current specification requires three independent Control Room Makeup and Cleanup Filtration Systems to be operable during all modes of operation. It then provides two different sets of ACTION statements: one for Modes 1 through 4 and one for Modes 5 and 6. The current ACTION statement for Modes 5 and 6 identifies the required actions when either one or two of the systems are inoperable.

Any single train is capable of performing the required functions during Modes 5 and 6. On this basis, the addition of a new Limiting Condition for Operation, 3.7.7.1, is proposed for these modes. This new specification will require two trains to be operable during Modes 5 and 6. The proposed changes to the ACTION statement are made to be consistent with the new Limiting Condition for Operation. The proposed change to this specification revises the required actions for Modes 5 and 6 as follows:

a. With only one Control Room Makeup and Cleanup Filtration System operable, two systems must be restored to operable status within 7 days or the remaining OPERABLE Control Room Makeup and Cleanup Filtration Systems must be started and maintained in the recirculation and makeup air filtration mode, and

b. With all Control Room Makeup and Cleanup Filtration Systems inoperable, or, with the Operable Control Room Makeup and Cleanup Filtration System required to be in the recirculation and makeup air filtration mode by ACTION a., not capable of being powered by an operable emergency power source, suspend all operations involving core alterations or positive reactivity changes or movement of irradiated fuel or loads over spent fuel pool.

- Technical Specification 3.9.12 REFUELING OPERATIONS, **FUEL HANDLING BUILDING EXHAUST AIR SYSTEM**

The current specification requires both filter trains, three booster fans, three main exhaust fans, and associated dampers. Any single train of filters and any single train of main exhaust and booster fans are capable of performing the required accident mitigation functions when not in Modes 1 through 4. On this basis, the Limiting Condition of Operation will require the following components of the Fuel Handling Building Exhaust Air System to be operable: a) two independent exhaust air filter trains, b) two independent exhaust booster fans, c) two independent main exhaust fans, and d) associated dampers.

A change is proposed to ACTION statement (a.) to maintain compatibility with the revised Limiting Condition for Operation. The change will permit fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool to proceed with less than the required Fuel Handling Building Exhaust Air System components but with at least one exhaust air filter train, one exhaust booster fan, one main exhaust fan, and associated dampers operable. The requirements that the operable Fuel Handling Building Exhaust Air System components must be capable of being powered from an operable emergency power source and must be in operation and discharging through at least one train of HEPA filters and charcoal absorbers in order to move fuel is retained.

A change is also proposed to ACTION statement (b.) to maintain compatibility with the revised Limiting Condition for Operation. It will require that, with no Fuel Handling Building exhaust air filter train operable, all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool be suspended.

A change is also proposed to surveillance requirement 4.9.12 to maintain compatibility with the revised Limiting Condition for Operation. The proposed revision will require only that the flow test performed to demonstrate operability utilize only the operable fans rather than "two out of three" of the fans.

SAFETY EVALUATION

A multi-discipline project team performed an extensive design review to support the proposed changes to the Technical Specification for A.C. Power Sources and the other related specifications described previously. The design review supported the conclusion that the South Texas Project has the ability, with the equipment powered by a single train of the Class 1E electrical power system, to maintain a safe shutdown condition and successfully mitigate accidents. The proposed Technical Specifications assure the availability of the required equipment.

The systematic approach used in the design review is applicable to all plant systems and the technical specification changes. In each case, the systems and components were reviewed to determine whether they were capable of performing their accident mitigation functions with a single train of Standby Diesel Generator backed power. The design review consisted of the following steps:

- All Design Basis Accidents described in the South Texas Project FSAR were reviewed to determine which are applicable to Modes 5 or 6. Table 1 presents the results of this review.

- The safety functions to be satisfied during the outage were identified. They were derived from a review of 10CFR50 and ANSI-N51.1 (1983). The safety functions are based on the key plant design bases which are 1) maintaining the integrity of the Reactor Coolant System pressure boundary, 2) ensuring the capability to shut down and maintain safe shutdown conditions and 3) preventing or mitigating the consequences of accidents that could result in potential offsite exposures comparable to those in 10CFR100. Table 2 lists the safety functions.

- A list of the systems required to mitigate the accidents and perform the applicable safety functions was then compiled. Table 3 lists the systems required to meet each safety function. The required components for each system were also determined.

- A review of the Technical Specifications was conducted to identify those that would be impacted due to the revised Standby Diesel Generator requirement in Modes 5 and 6 and the reactor defueled condition. The required revisions to the Technical Specifications were described previously.

The overall results of this review found that all required systems, when operating in conformance with the proposed Technical Specifications, can:

- Perform their required safety function(s) during any postulated design bases accident condition during Modes 5 and 6.

- Perform their system design functions and meet their operability requirements during the outage with the power supplies required by the proposed specifications.

- Meet the applicable Technical Specifications (including the ACTION statement requirements) as modified by this proposal.

- Assure the availability of a diesel backed power supply to the required Residual Heat Removal System equipment for shutdown cooling during the entire outage.

The Design Review evaluated the system and component capability from all relevant operational perspectives, including power supply and support system requirements. The discussion below applies the results of the design review to, and provides a safety evaluation of, the proposed change to each of the affected Technical Specifications.

Technical Specification 3.8.1.2

System Description

The Standby Diesel Generator system consists of three (3) identical 5500 KW diesel generators with associated controls and internal support systems (e.g., air start, fuel oil, cooling, etc.). Each diesel generator unit is completely separate and independent from the others, including its power sources for controls and support systems. Each diesel generator unit provides 4.16 KV power to its respective Class 1E switchgear bus. Power sources to each of the diesel generator support systems and controls are also associated with the same train as the Standby Diesel Generator. Normally each Standby Diesel Generator is aligned to power its associated 4.16 KV bus, but it is not operating. During a loss of offsite power (LOOP), each diesel generator automatically starts and energizes its associated 4.16 KV bus.

The system has no inherent Class 1E cross-train capability or dependency (i.e., a Standby Diesel Generator cannot power the 4.16 KV bus in another train and the support systems for one Standby Diesel Generator cannot be powered from another train). The Standby Diesel Generator system is identical for each unit. No sharing capability currently exists between Unit 1 and Unit 2.

In order to provide operating and maintenance flexibility during reduced reactor coolant inventory conditions, a note to proposed specification 3.8.1.3 states that an alternate onsite emergency power source may be substituted for one of the required Standby Diesel Generators. For the upcoming Unit 1 refueling outage, Houston Lighting & Power is planning to rent a diesel generator unit for use as the alternate diesel backed power source. This diesel generator will be non-safety related, non-seismically qualified. The alternate diesel generator will have its own support systems and fuel oil which will also be non safety related.

In addition, Houston Lighting & Power is preparing a plant modification which will facilitate the connection of the rental unit to the onsite electrical distribution system. The currently proposed modification will add a new 13.8 kV switchgear bus as shown in Figure 1. The line side of one of the three breaker compartments will be used for connection of the rental unit. The load side of the other two breaker compartments will be permanently connected to the existing Unit 1 and 2 13.8 kV switchgear buses 1K and 2K respectively. Following insertion, racking and closing of the temporary diesel generator unit breaker and either of the other new switchgear breakers, the rental unit can be used to power any 4.16 kV Engineered Safety Features bus of either South Texas Project unit. At this time, Houston Lighting & Power plans to prohibit the cross-tie of the units by administrative controls. The currently proposed location of the new switchgear and rental unit is shown on Figures 2, 3 and 4.

Design Review Results

The maximum required electrical load on each Standby Diesel Generator during Modes 5 and 6 and reactor defueled condition is bounded by the required loading during other accident/event scenarios (e.g., the loss of coolant accident during Mode 1). Each train is capable of supplying the necessary power to its connected loads and, when operating in accordance with the proposed technical specifications, any single train (i.e., Train A or B or C) is capable of performing normal and design basis accident mitigation functions in modes 5 and 6. The alternate emergency power source will be sized to provide power for residual heat removal, component cooling water, essential cooling water, spent fuel pool cooling and associated instrumentation.

While in Modes 5 or 6 the Standby Diesel Generators are required for the charging pumps, the residual heat removal pumps, essential cooling water, component cooling water and the ventilation systems for the Control Room and the Fuel Handling Building. The proposed changes to this specification revise the operability requirement to be consistent with the requirements of those other specifications and yet provide additional flexibility to permit the required diesel maintenance to be performed within a shorter outage window. The split into three specifications is modeled on the technical specifications for the residual heat removal loops, which have both a full reactor coolant inventory and a reduced inventory requirement for both Modes 5 and 6. The revised specifications assure the availability of a diesel backed power supply to support the above equipment.

The proposed ACTION statement revisions establish the same required actions for each of the A.C. power source specifications. The additional requirements to restore the inoperable power supply and to suspend operations with a potential of draining the reactor vessel, as well as the deletion of the requirement to depressurize and vent the Reactor Coolant System, are consistent with the requirements in NUREG 1431. The additional deletion of the last action in the current 3.8.1.2 is an administrative change based on the creation of a new technical specification (3.8.1.3) with an applicability statement matching the conditions of this required action (i.e., reduced inventory operation).

Technical Specification 3.8.2.2

System Description

The South Texas Project Class 1E D.C. System is composed of four (4) channels of 125 VDC power distribution equipment that includes batteries, battery chargers, distribution switchboards and distribution panels. Each channel is completely separate and independent from the other channels, including power sources to the battery chargers. Channels I and II are powered from Engineered Safety Features Train A, Channel III is powered from Engineered Safety Features Train B, and Channel IV is powered from Train C.

The Class 1E D.C. system has no cross-channel capability (e.g., Channel I battery charger cannot power Channel II, III or IV batteries, distribution switchboards or distribution panels and Channel I battery chargers cannot be powered from Train B or Train C 480 VAC power). The Class 1E D.C. System is identical for each unit. No sharing capability exists between Unit 1 and Unit 2.

The function of the Class 1E D.C. System is to provide separate sources of 125 VDC uninterruptible power to various Engineered Safety Features equipment, including the Standby Diesel Generator controls, Class 1E 4.16 KV switchgear controls, 480 V load center breaker controls, load sequencer, Display Processing System (QDPS), Reactor Trip Switchgear and the Class 1E vital 120V system Westinghouse (NSSS) and Elgar (TMI) Inverters.

Design Review Description and Results

The maximum electrical load on each D.C. Channel during Modes 5 and 6 is bounded by the load on that channel during other accident/event scenarios (e.g., loss of coolant accident concurrent with LOOP during Mode 1). Each channel is capable of supplying the necessary power to its connected loads. When operating in accordance with the proposed technical specifications, Channels I or III or IV alone backed by their respective A.C. power train battery chargers (i.e., Train A or B or C respectively) are capable of performing the necessary design basis accident mitigation functions in modes 5 and 6. Channel II does not provide D.C. control power to A.C. power train switchgear or load centers, therefore, it alone cannot perform the necessary Modes 5 and 6 accident mitigation functions.

Based on these findings, the proposed technical specifications assures the availability of power to the systems and equipment which require it. It was also determined that this specification could be simplified using the wording in NUREG 1431.

Technical Specification 3.8.3.2

System Description

The system description related to this specification covers the subsystems for the different voltage levels of the distribution system:

- 4160 V System

The 4160 V system is composed of three (3) 1200 amp, 4.16 KV Class 1E switchgear busses. Each bus is separate and independent from the others including standby A.C. power sources and control power sources. Each distributes 4.16 KV power to various associated engineered safety features equipment of greater than 300 HP, as well as to the associated train 4160-480 V transformers and 480 V load centers. Controls for each 4.16 KV bus are powered from the D.C. power channel of its respective train.

The system has no cross-train capability (e.g., a 4.16 KV bus cannot power any equipment or 480 V load center of another train and a 4.16 KV bus cannot be powered from the Standby Diesel Generator of another train). The system is identical for each unit and no sharing capability exists between Unit 1 and Unit 2.

Normally each 4.16 KV bus is aligned and powered from an offsite power source (either the Unit Auxiliary Transformer or a Standby Transformer). During a loss of offsite power (LOOP), each Standby Diesel Generator automatically starts and energizes its associated 4.16 KV bus. In the unlikely event that all three of these power sources are unavailable, a 4.16 KV bus can be powered from either the Standby Transformer of the other unit or the Emergency Transformer, both of which are non-safety related.

- 480 V System

This system is composed of three (3) trains of Class 1E 480 V electrical power distribution equipment. Each train contains a double-ended unit substation with each end terminating at a 4160-480 V, 1000 KVA load center transformer. Each half of the double-ended switchgear bus (substation) powers two (2) associated train 480 V motor control centers. The two 1600 amp switchgear bus sections may be connected via a bus tie breaker. The A.C. power sources and control power sources for each train are separate and independent from each other.

The 480 V system load centers power various associated train engineered safety feature system equipment rated between 100 HP and 300 HP / 450 KW. The 480 V Class 1E motor control centers power associated train engineered safety feature system motor-operated valves (MOVs), pumps and other motor and non-motor loads less than 100 HP.

Control power for the 480 V motor control centers is provided directly from the motor control center control power transformers. Control power for the 480 V load centers is provided from its associated train 125 VDC channel.

- 120 V Vital Distribution and 125 VDC Distribution

The 120 V vital distribution system is composed of four (4) channels of 120 V power distribution equipment that includes inverters, voltage regulating transformers and distribution panels. Each channel is completely separate and independent from the others including all power sources to the inverter and voltage regulating transformer. The system has no cross-channel capability (e.g., an inverter or voltage regulating transformer cannot power the distribution panel of another channel and cannot be powered from the battery or motor control center of another channel/train). The 120 V vital distribution system is identical for each unit. No vital A.C. or D.C. power system sharing capability exists between Unit 1 and Unit 2.

The normal system alignment is:

- Each inverter input is aligned from both the 125 VDC battery and the 480 V motor control center. Power is normally supplied from the motor control center. In the event of a loss of offsite power, the battery supplies power without interruption.

- Each battery charger input is aligned from the associated train 480 VAC motor control center.

- Each 120 VAC distribution panel is powered from its associated inverter.

- Each 125 VDC distribution panel is powered from its associated battery or battery charger.

The function of the 120 V vital distribution system is to provide four (4) separate channels of uninterruptible 120 V, single-phase power to the safety related portions of the four (or less) associated plant protection instrumentation and control systems. These systems include such equipment as the: NSSS Process Protection Racks (includes Reactor Protection, Engineered Safety Features (ESF) Actuation instrumentation, and portions of the Qualified Display Processing System), Solid State Protection System (includes Reactor Protection and Engineered Safety Features Actuation logic), Nuclear Instrumentation System, Radiation Monitoring System, and miscellaneous safety related instrumentation and control circuits.

Design Review Description and Results

The maximum required electrical load on each of these system trains and channels during Modes 5 and 6 is bounded by the required loads during other accident/event scenarios (e.g., loss of coolant accident during Mode 1). There is no cross-training of components within the system or its power sources. The system is not shared between operating units.

The design review has shown that in Modes 5 and 6, the equipment required by the Proposed Technical Specifications is fully capable of mitigating postulated accidents and performing normal operating functions.

The design review also identified various differences in the loading of the trains and channels. These differences are evaluated below:

4160 VAC Power

- Centrifugal Charging Pumps

  The Chemical and Volume Control System includes two centrifugal charging pumps. They are powered from Trains A and C. Technical Specifications 3.1.2.1 and 3.1.2.3 requires at least one pump be operable and capable of being powered from an emergency power source. This requirement assures that a Standby Diesel Generator - backed centrifugal charging pump will be available for accident mitigation .

480 VAC Power

- Spent Fuel Pool Cooling Pumps

  The Spent Fuel Pool Cooling System contains two pumps which circulate water from the spent fuel pool through heat exchangers to remove decay heat. The pumps are powered by 200 HP motors receiving power from Trains B and C of the 480 V power distribution system. One pump is sufficient to cool the pool and meet the Standard Review Plan criterion of no boiling. Should a loss of offsite power occur with only Standby Diesel Generator A available, power to both pumps would be lost and spent fuel pool cooling would not be available. In this scenario, the portable diesel generator serving as the alternate emergency power source described in the safety evaluation of Technical Specification 3.8.1.2, may be used to energize Train B or C and power selected loads.

- Boric Acid Transfer Pumps

  The Chemical and Volume Control System includes two boric acid transfer pumps. They are powered from Trains A and C. Technical Specification 3.1.2.1 requires at least one pump be operable and capable of being powered from an emergency power source or a gravity feed path to the Charging Pump. This requirement assures that a boric acid transfer pump will be available for accident mitigation.

- Fuel Handling Building HVAC Filters

  The Fuel Handling Building HVAC exhaust air system includes two trains of filters, with heating coils to assure better filter efficiency. The filter units and their associated dampers and instrumentation are powered from Trains A and B. Technical Specification 3.9.12 requires both trains of filters be operable during these modes. With only one train operable, it must be operating and be capable of being powered from an emergency power source in order to move fuel. This requirement assures that a filter unit will be available for accident mitigation.

- Containment Isolation Features (CIF)

  Containment Isolation Features include all of the manual, pneumatic and electrically operated Containment "isolation barriers" as defined in the South Texas Project UFSAR. Technical Specification 3.9.4 provides the requirements for containment integrity during core alterations or while moving fuel inside the Reactor Containment Building. The required Containment penetrations and associated "isolation barriers" are:

Penetration	Isolation Barrier(s)
M-92	Equipment Hatch
M-90	Personnel Airlock Doors
M-91	Auxiliary Airlock Doors
M-41	Normal Containment Purge Exhaust IRC MOV-0009 and ORC MOV-0010
M-42	Normal Containment Purge Supply ORC MOV-0007 and IRC MOV-0008
M-43	Supplementary Containment Purge Supply IRC MOV-0003 and ORC FV-9776
M-44	Supplementary Containment Purge Exhaust IRC MOV-0005 and ORC FV-9777
M-80	Containment Atmosphere Radiation Monitor IRC MOV-0001 & 0003 and ORC MOV-0004 & 0006

IRC = Inside Reactor Containment
ORC = Outside Reactor Containment
MOV = Motor Operated Valve

These penetrations have been analyzed and found acceptable. The normal containment purge exhaust and supply penetrations each have two motor operated valves, one powered from Train A and one from Train B. In the case where only Train C of the 480 V power system is operable, the purge valves would not be powered and would fail-as-is on a loss of offsite power. The valves, then, must be isolated prior to removing Train A and Train B busses from service in order to meet the Technical Specification for containment closure during core alterations.

120 VAC and 125 VDC Power Distribution

- Source Range Nuclear Instrumentation

  The Source Range Monitors (SRM) are powered from Channels I and II, which are powered from Train A alone. The current Technical Specification 3.3.1 ACTION statement for these monitors during Mode 5 requires restoration of the monitors to an operable condition within 48 hours, or the reactor trip breakers must be opened within one hour. The required ACTION is considered sufficient to assure safe operation and meet the intent of the requirement.

  During Mode 6, two source range monitors are required by Technical Specification 3.9.2 during core alterations or positive reactivity changes. They are available whenever Train A of the electrical power distribution system is energized. When Trains B or C of the electrical power distribution system are energized (but not Train A), these operations must be suspended. This is currently handled administratively to meet the technical specification without impact on the outage or plant operation.

- Extended Range Nuclear Instrumentation

  The current Technical Specification 3.3.1 requires both extended range monitors be operable during Mode 5. They are powered from Channels I and IV. With only Train A or only Train C power available, one of the two required extended range monitors is not available. The action statement requires restoration of the monitors to an operable condition within 48 hours, or the reactor trip breakers must be opened within one hour. The required ACTION is considered sufficient to assure safe operation and meet the intent of the requirement.

- Containment Isolation on High Radiation

  The Radiation Monitoring System is powered from Channel I and Channel IV (Trains A and C). Containment Ventilation Isolation signals are generated in the SSPS actuation channels which are powered from Channel I and Channel III. Each of these channels fails to the actuate condition. The isolation valves are powered from Trains A and B. Thus, with Channel I (Train A) power only, the automatic Containment Ventilation Isolation function could still be performed.

  However, with Channel IV (Train C) power only available, the isolation valves would not have power and the containment would not be automatically isolated. Prior to entry into this condition, the affected penetrations (normal purge) are required to be isolated as discussed above for the 480 V electrical distribution system.

- Cold Overpressure Mitigation System

  In the scenario of interest (Modes 5 and 6), the Cold Overpressure Mitigation System (COMS) provides an essential function for the Reactor Coolant System (RCS). It monitors the reactor coolant conditions and protects against brittle fracture of the reactor vessel. This subsystem includes temperature and pressure instrumentation and the pressurizer power operated relief valves.

  The equipment required to mitigate the overpressure conditions is powered from either Channel I (Train A) or Channel III (Train B). This function is required by Technical Specification 3.4.9.3 when the Reactor Coolant System is not vented through a 2.0 in^2 opening in Modes 4, 5, and 6 when the head is on the reactor vessel. The associated ACTION statement provides an 8 hour period to vent the reactor vessel upon loss of both valves. With the system vented or the head removed, overpressure protection is not required.

In summary, the design of the power distribution system is such that each train and channel is capable of powering its connected loads. The proposed Technical Specifications assure the availability of the equipment necessary to mitigate applicable accidents. The differences in the connected loading of the trains and channels is covered by the Technical Specification requirements and their associated ACTION statements.

<u>Technical Specification 3.7.7</u>

System Description

The Control Room Envelope HVAC system is a part of the Electrical Auxiliary Building HVAC system. It is designed to maintain a suitable environment for equipment operation and

safe occupancy in the control room under all operating conditions. It consists of three trains of safety-related air handling units, control room air cleanup filter units, makeup air filter units, and return air fans with associated dampers, ductwork, and controls. The system is provided with redundant radiation monitors, toxic gas monitors, and smoke detectors in the common plenum to which outside air is introduced through one of the two physically separated air intakes. Smoke detectors are also provided in the return air duct. Should high concentrations of toxic chemicals or smoke be detected at the outside air intake, makeup of outside air would be isolated from the control room envelope.

The control room ventilation system automatically switches to the emergency pressurization and recirculation mode of operation when either high radiation in the outside air is detected or when a safety injection signal is received. Outside makeup air for the control room envelope is automatically routed through engineered safety features (ESF) makeup air filter units. With one train in operation, the control room is pressurized by approximately 1000 ft^3/min of filtered outside air to restrict the infiltration of unfiltered outside air. Radioiodine that reaches the control room atmosphere is removed by the recirculation train designed to pass 5,000 ft^3/min of the control room air through the filter units.

Design Review Description and Results

A detailed analysis was performed for this system to validate that it is capable of performing its functions with only a single train of equipment available. This detailed work consisted of a Single Train Performance Analysis, a Failure Modes and Effects Analysis (FMEA) and a calculation addressing Control Room habitability.

- Single Train Performance Analysis

  To demonstrate that a single HVAC train is capable of supporting all necessary functions to maintain a safe cold shutdown condition, a new room temperature calculation was produced. For technical accuracy, the entire Electrical Auxiliary Building HVAC system, including the Control Room Envelope, was modeled.

  Room to room heat conduction was treated realistically in this calculation by a set of equations describing a steady state heat balance. For any particular case, all of the variables in this set of equations are known except the temperature of each room. The set of equations was solved to determine steady state room temperature for any condition.

  The analysis results indicate that each room in the building receives considerably more air flow than required to meet individual room heat loads. The design temperature for the accident scenario is not exceeded in any room. This conclusion is also substantiated based on the fact that the Control Room Envelope HVAC system is generally operated with only one train (of the 3 installed) running.

An additional calculation was performed that confirmed that the 300 ton chiller of a single train of the Essential Chilled Water System is adequate to support a single train of the Electrical Auxiliary Building HVAC, including the Control Room Envelope.

- Failure Modes And Effects Analysis

Based on the Technical Specification requirement of at least two operable trains, a detailed Failure Modes and Effects Analysis (FMEA) was performed. The calculation concludes that the EAB and CRE HVAC systems can tolerate a single failure and still perform its safety functions.

- Control Room Habitability

Control Room habitability criteria are met by incorporating radiological shielding and emergency ventilation systems in the control room design, and by having an adequate supply of self-contained breathing apparatus in the control room for the emergency team. The proposed Technical Specification change requires that at least two HVAC trains must be operable or an action statement must be entered.

A calculation was performed to analyze the ability of a single train of filters to limit the control room dose to less than the limits of 10CFR50 Appendix A. The credible event considered in Modes 5 and 6 is a fuel handling accident in either the Fuel Handling Building or the Reactor Containment Building. For each of these accidents the whole body dose is less than the 5 Rem criteria.

The proposed change does alter assumptions previously made in evaluating the radiological consequences of the fuel handling accidents in the Reactor Containment Building and the Fuel Handling Building. Now it has been specifically analyzed to reduce system requirements in modes 5 and 6 and the radiological consequences described in this change are bounded by the acceptance criteria as given in the Safety Evaluation Report (SER) and General Design Criteria 19 (10CFR50, App. A).

Calculations have shown that one train of equipment can perform the system safety function. The system, with at least two trains operable in accordance with the proposed Technical Specifications, is capable of withstanding a single active failure as demonstrated by performance of a Failure Modes and Effects Analysis for operation during Modes 5 and 6. Based on the above review and calculations, the Control Room Makeup and Filtration Systems will perform acceptably when operated in accordance with the proposed change to the Technical Specifications. Testing will be performed as needed to ensure the system meets its design requirements.

Technical Specification 3.9.12

System Description

The Fuel Handling Building ventilation system consists of a supply air subsystem, a supplementary cooler subsystem, and an exhaust air subsystem. The Fuel Handling Building ventilation system is designed to maintain a suitable environment for equipment operation during normal and abnormal operating conditions and to limit potential radioactive release to the atmosphere during postulated fuel handling accident conditions.

The non safety related supply air subsystem provides the Fuel Handling Building with a filtered source of outside air at the proper temperature. On the loss of offsite power (LOOP) or in the event of a fuel handling accident, the supply air subsystem is isolated.

The safety related supplementary cooling system utilizes essential chilled water to cool the Emergency Core Cooling System equipment as well as the spent fuel pool cooling pumps. The core cooling equipment is not required during Modes 5 and 6 operation. The cooling for the spent fuel pool pumps is powered from the same train as the associated pump.

The safety related Fuel Handling Building exhaust air subsystem contains two 100% capacity redundant filter trains, three trains of exhaust booster fans and main exhaust fans, and associated dampers, ductwork, and controls. Each filter train contains three filtration units, each with electric heating coils to reduce moisture, a prefilter to remove coarse particles, a HEPA filter to remove radioactive particles, a carbon filter to remove iodine gas, and a second set of HEPA to prevent carry over of carbon particles. The Fuel Handling Building is kept at a negative pressure relative to the outside environment by modulation of the supply air damper with a fixed exhaust flow. Test data and calculations show that the exhaust air subsystem capacity is in excess of that of the supply air subsystem. This validates the ability to maintain the Fuel Handling Building under negative pressure and thus prevent unmonitored leakage of contaminated air.

Design Review Description and Results

The Design Review of the system confirmed the system can perform its design functions when it is operated in accordance with the proposed specifications. As a part of the Design Review, detailed analyses were performed for these systems to validate that a single train of the system was capable of meeting the system design basis requirements during Modes 5 and 6. This detailed work consisted of a Single Train Performance Analysis and a Failure Modes and Effects Analysis (FMEA).

- Single Train Performance Analysis

  In the event of a fuel handling accident, high radiation detected by monitors in the exhaust subsystem trips the supply fans, closes the exhaust bypass dampers, opens the filter train dampers and starts the exhaust booster fans. Within 30 minutes, a control room operator isolates one train of filters and one of the three trains of main and booster exhaust fans. The exhaust subsystem maintains the Fuel Handling Building at a vacuum of at least 1/8 inch water gauge while in the emergency mode alignment. The safety related HVAC equipment rooms are maintained at or below 120°F.

  The calculation evaluated the ability of a single train of equipment to meet the following design requirements: maintain a negative pressure in the Fuel Handling Building, maintain the temperature of the safety-related HVAC equipment rooms, maintain the temperature of the spent fuel pool cooling pump rooms, and provide sufficient flow to activate filter train heaters.

  The results of the calculation demonstrated:

  1. Each train of the Fuel Handling Building HVAC exhaust subsystem is capable of meeting its design basis requirements associated with storage and handling spent fuel.

  2. In the configuration required by the proposed Technical Specification, it will function on demand in response to a loss of offsite power or a fuel handling accident in the Fuel Handling Building.

  3. The Fuel Handling Building supplemental cooling for the spent fuel pool cooling pump cubicles will provide the environmental support function for the pumps with any combination of one diesel backed train and one train of offsite power.

- Failure Modes and Effects Analysis

  A Failure Modes and Effects Analysis was performed to show that the two trains of the Fuel Handling Building HVAC system required by the proposed Technical Specifications meets the single failure criterion.

  The calculation concludes that the Fuel Handling Building HVAC system can tolerate a single failure and still perform its safety functions. A single failure concurrent with a loss of offsite power is not assumed for Modes 5 or 6 operation. Thus, each Fuel Handling Building HVAC train, when operated in accordance with the proposed technical specifications, will adequately perform the necessary safety functions.

The proposed changes to the ACTION statement and the surveillance requirement are consistent and compatible with the revision of the Limiting Condition for Operation. These changes are justified based on the discussion above supporting the proposed Limiting Condition for Operation.

Calculations, surveillance testing, and operating experience have shown that operation of the Fuel Handling Building HVAC system with a single train of components meets the system design basis. Both filter trains in the Fuel Handling Building and each of the three trains of fans perform at 100% of the required capacity during Modes 5 and 6. Mitigation of the fuel handling accident can be performed by a single train of filters, booster fans and exhaust fans.

Based on the above review and calculations, the Fuel Handling Building HVAC System will perform acceptably considering the proposed change to the Technical Specifications.

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Pursuant to 10CFR50.91, this analysis provides a determination that the proposed change to the Technical Specifications described previously, does not involve any significant hazards consideration as defined in 10CFR50.92, as described below:

(1) The proposed change does not involve a significant increase in the probability or consequences of accidents previously evaluated.

The equipment which is affected by the technical specification changes proposed here are not precursors to any accident postulated to occur in Modes 5 and 6. Therefore, the probability of an accident is not increased. A design review has demonstrated the ability of the required systems to perform their accident mitigation functions for the postulated accidents during mode 5 and 6 operation. Therefore, it is concluded that an increase in the consequences of the postulated accidents will not result from the proposed Technical Specifications.

(2) The proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

The system design, function, and performance is not affected by these specifications. No new equipment interactions are created. Calculations and Failure Modes and Effects Analyses (FMEA) have been conducted for selected mechanical systems and show there are no failures which would cause situations where applicable accidents would not be mitigated or which would cause new accidents. On this basis, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

(3) The proposed change does not involve a significant reduction in the margin of safety.

The electrical power system specifications support the equipment required to be operable, commensurate with the current level of safety, including the equipment requiring a diesel backed power source. The design review results demonstrate that operation in Modes 5 and 6, in accordance with the proposed Technical Specification changes, is acceptable from an accident mitigation standpoint. The basic Modes 5 and 6 plant system functions are not changed. On this basis, the proposed change does not involve a significant reduction in the margin of safety.

Based on the information provided in this submittal, Houston Lighting & Power considers that the change to permit operation with one emergency power supply during Mode 5 loops filled and Mode 6 with reactor coolant system greater than 23 feet above the reactor vessel flange is acceptable and safe. The analysis conducted shows that the systems are capable of performing their design basis functions. These changes do not have an adverse impact on accident mitigation. Houston Lighting & Power requests that the proposed changes to the Technical Specification be approved.

IMPLEMENTATION PLAN

The implementation of the proposed Technical Specifications will involve administrative activities (e.g., procedure revisions and training). A modification to provide an alternate source of power to a system not required by Technical Specifications (Spent Fuel Pool Cooling System) is planned. This modification will also provide for an alternate diesel backed power supply for the shutdown cooling function. These Technical Specification changes are required before the start of the Unit 1 outage which is currently scheduled for March 5, 1995. While the required activities are not extensive, they will require planning and implementation periods. Consequently, Houston Lighting & Power requests that the Commission provide at least 31 days between the effective date and the date of implementation to allow for on-site distribution of the changes. Approval of these changes is currently required by February 2, 1995 to support the scheduled outages.

TABLE 1
UFSAR DESIGN BASIS ACCIDENTS (DBA) AND EVENTS
FOR MODES 5 & 6 AND REACTOR DEFUELED

Accident Description	UFSAR Section	Mode 5 DBA	Mode 6 DBA	Reactor De-Fueled	Comments
Reactor Coolant System Low Temperature Overpressure	5.2.2.11.2	Yes	No	No	
Spent Fuel Pool Loss of Cooling	9.1.3.3.4	Yes	Yes	Yes	
Loss of Nonemergency A.C. Power to the Plant Auxiliaries (Loss of Offsite Power)	15.2.6	Yes	Yes	Yes	
Chemical and Volume Control System Malfunction That Results in a Decrease in Boron Concentration in the Reactor Coolant	15.4.6	Yes	Yes	No	Dilution event is prevented in Mode 6 by Technical Specification 3.9.1 which isolates dilution paths and specifies a maximum K_{eff} and minimum boron concentration.
Design Basis Fuel Handling Accident	15.7.4	Yes	Yes	Yes	Release is below 10CFR100 limits. In Reactor Containment Building, radiation monitors detect releases and initiate Containment Ventilation Isolation. In Fuel Handling Building, radiation monitors detect releases and divert flow to filters and start booster fans to maintain Fuel Handling Building below atmospheric pressure.

TABLE 2
ACCIDENT MITIGATION FUNCTIONS
FOR MODES 5 & 6

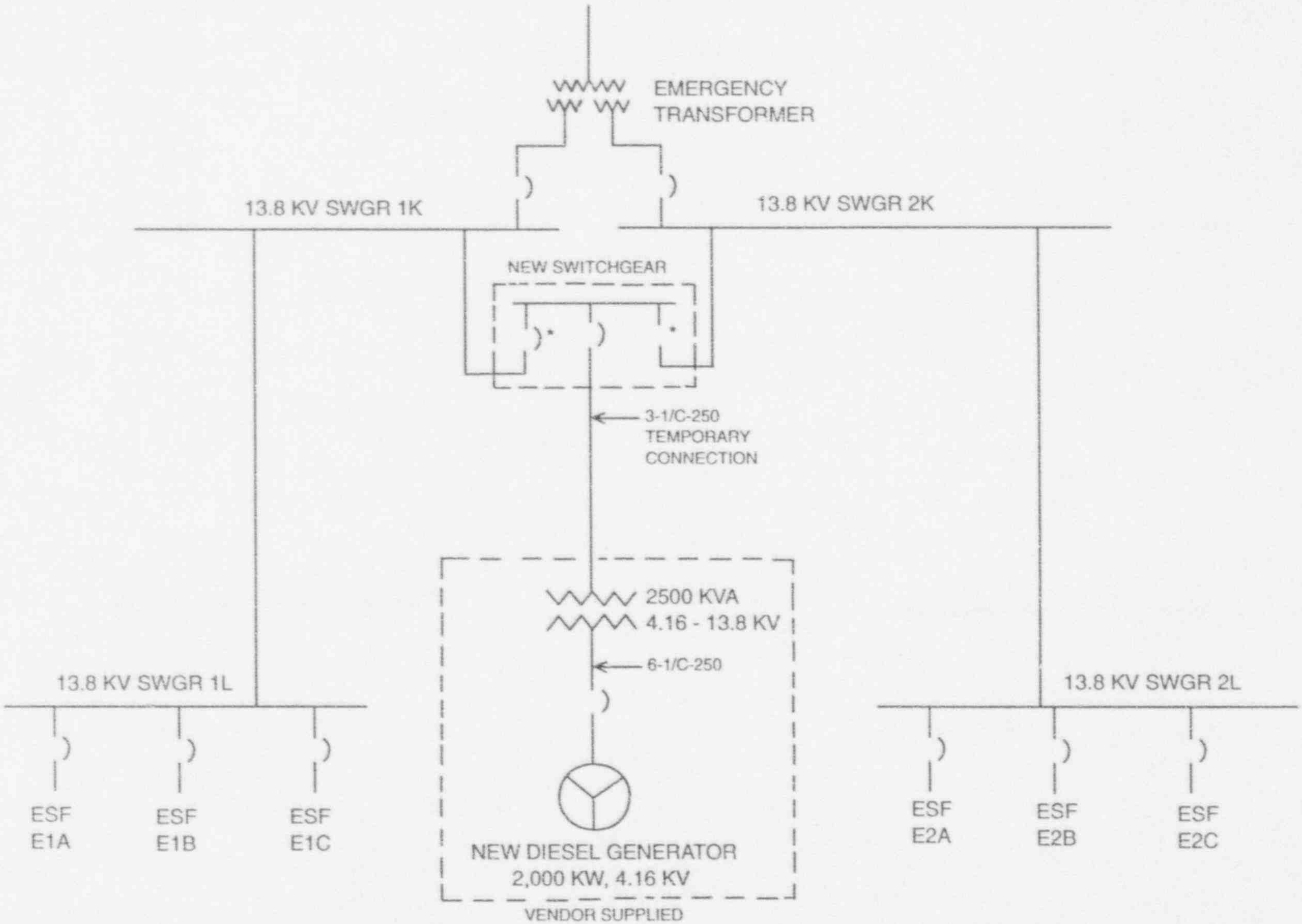
Function ID	Function
A	Forms part of the Reactor Coolant Pressure Boundary.
B	Provides fission product barrier or containment isolation.
C	Provides emergency heat removal or emergency removal of radioactive material from the containment atmosphere.
D	Introduces emergency negative reactivity (or restricts the addition of positive reactivity).
E	Provides emergency core cooling.
F	Provides or maintains coolant inventory for the ECCS.
G	Removes radioactive material from atmosphere of rooms with safety related equipment/functions (e.g., control room or Fuel Handling Building).
H	Introduces negative reactivity to achieve/maintain subcriticality.
I	Provides/maintains sufficient coolant inventory for core cooling.
J	Maintains core geometry to assure reactivity control and core cooling capability.
K	Provides spent fuel pool cooling.
L	Supports the safety function provided by other safety related equipment (e.g. cooling lubrication, fuel supply).
M	Provides actuation or motive power for safety related equipment.
N	Provides information or controls to ensure the manual or automatic actuation of safety related equipment.

TABLE 3
FUNCTIONAL REQUIREMENTS AND SYSTEMS FOR MODES 5 AND 6

Function ID	Functional Requirement	System Name
A	Forms part of the Reactor Coolant Pressure Boundary (RCPB).	Reactor Coolant
B	Provides fission product barrier or containment isolation.	Containment Isolation System
C	Provides emergency heat removal or emergency removal of radioactive material from the containment atmosphere.	HVAC - Containment Building
D	Introduces emergency negative reactivity (or restricts the addition of positive reactivity).	Chemical & Volume Control
E	Provides emergency core cooling.	Residual Heat Removal
F	Provides or maintains coolant inventory for the ECCS.	Chemical & Volume Control
G	Removes radioactive material from atmosphere of rooms with safety related equipment/functions (e.g., control room or Fuel Handling Building).	HVAC - Spent Fuel Building HVAC - Electrical Auxiliary Building
H	Introduces negative reactivity to achieve/maintain subcriticality	Chemical & Volume Control
I	Provides/maintains sufficient coolant inventory for core cooling.	Chemical & Volume Control
J	Maintains core geometry to assure reactivity control and core cooling capability.	Reactor vessel and internals
K	Provides spent fuel pool cooling.	Spent Fuel Pool Cooling

Function ID	Functional Requirement	System Name
L	Supports the safety function provided by other safety related equipment (e.g. cooling, lubrication, fuel supply).	Component Cooling Water HVAC Chilled Water Essential Cooling Water HVAC - Electrical Auxiliary Building HVAC - Fuel Handling Building HVAC - Standby Diesel Generator Building HVAC - Mechanical Auxiliary Building HVAC - Miscellaneous
M	Provides actuation or motive power for safety related equipment.	Standby Diesel Generator 125 VDC Class 1E 4.16 KVAC Class 1E Power 480 VAC Class 1E Load Centers 480 VAC Class 1E MCC 120 VAC Class 1E Vital 208/120 VAC Class 1E Vital
N	Provides information or controls to ensure the manual or automatic actuation of safety related equipment.	7300 Process Support system In-Core Instrumentation Panels and Cabinets Nuclear Instrumentation Radiation Monitoring Solid State Protection

FIGURE 1
TEMPORARY DIESEL GENERATOR ADDITION SINGLE LINE DIAGRAM



* - Administratively controlled to ensure only one breaker is installed at a time

FIGURE 2
TEMPORARY DIESEL GENERATOR PRIMARY LOCATION INSTALLATION PLOT PLAN

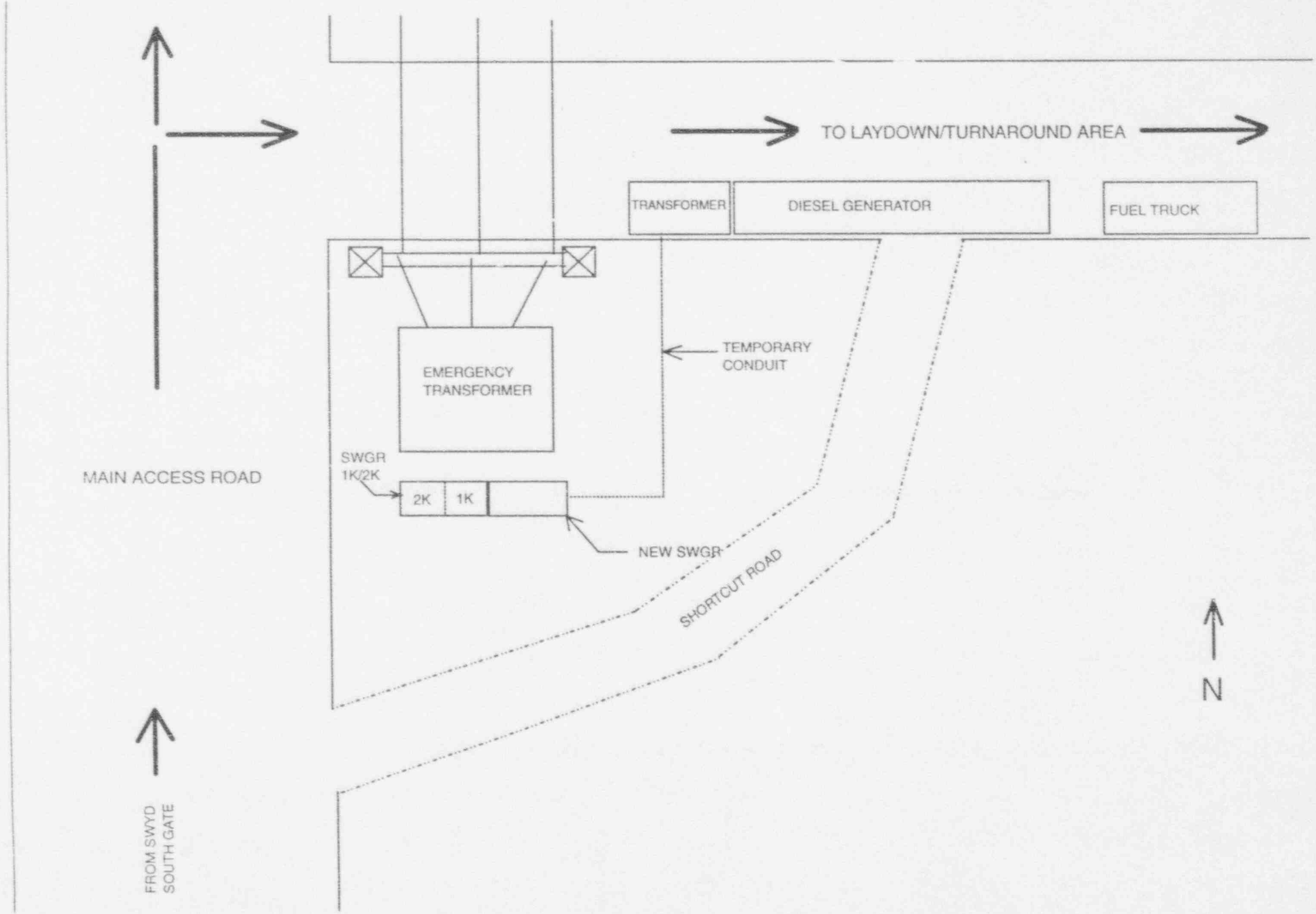


FIGURE 3

TEMPORARY DIESEL GENERATOR INSTALLATION PLOT PLAN

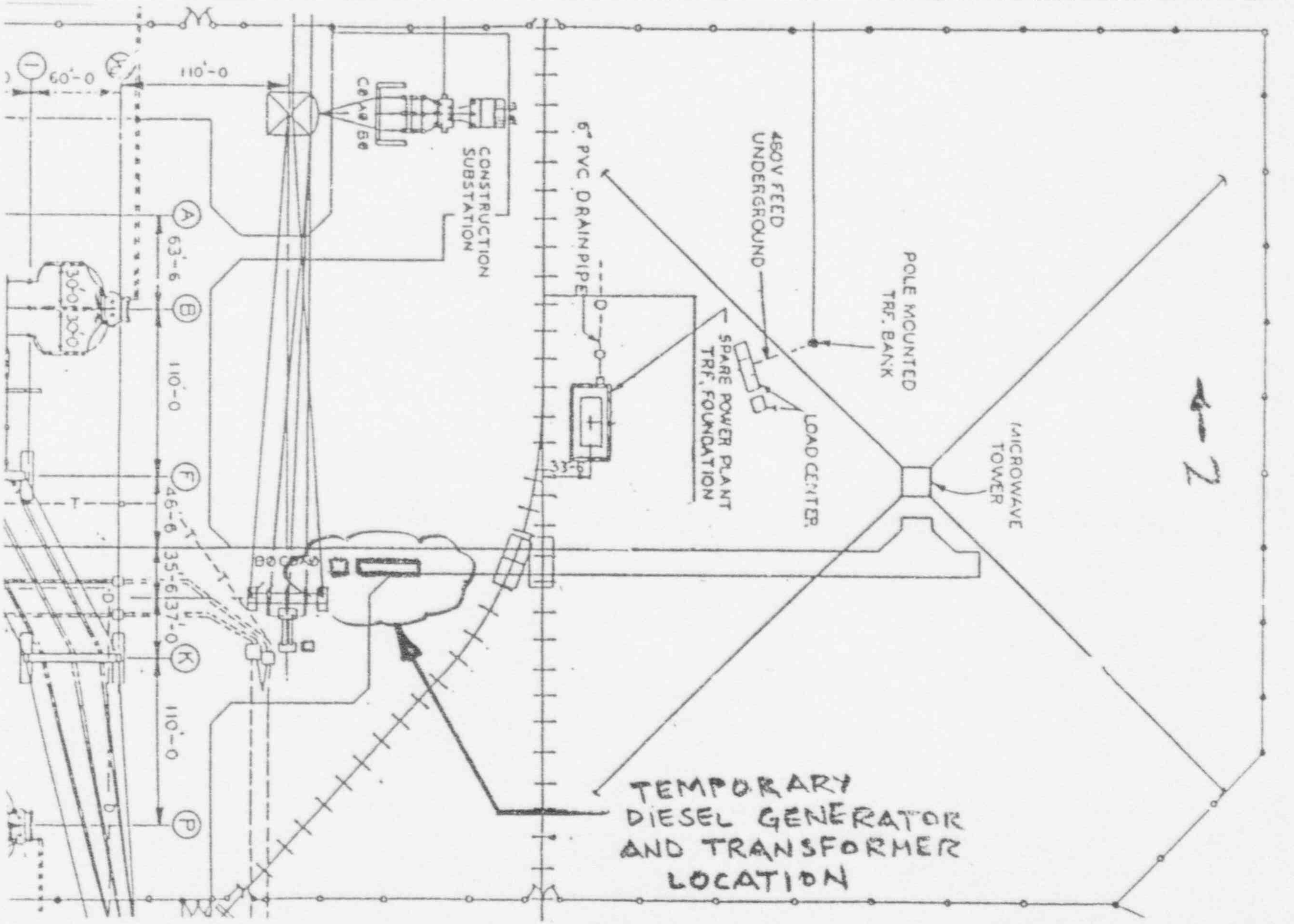
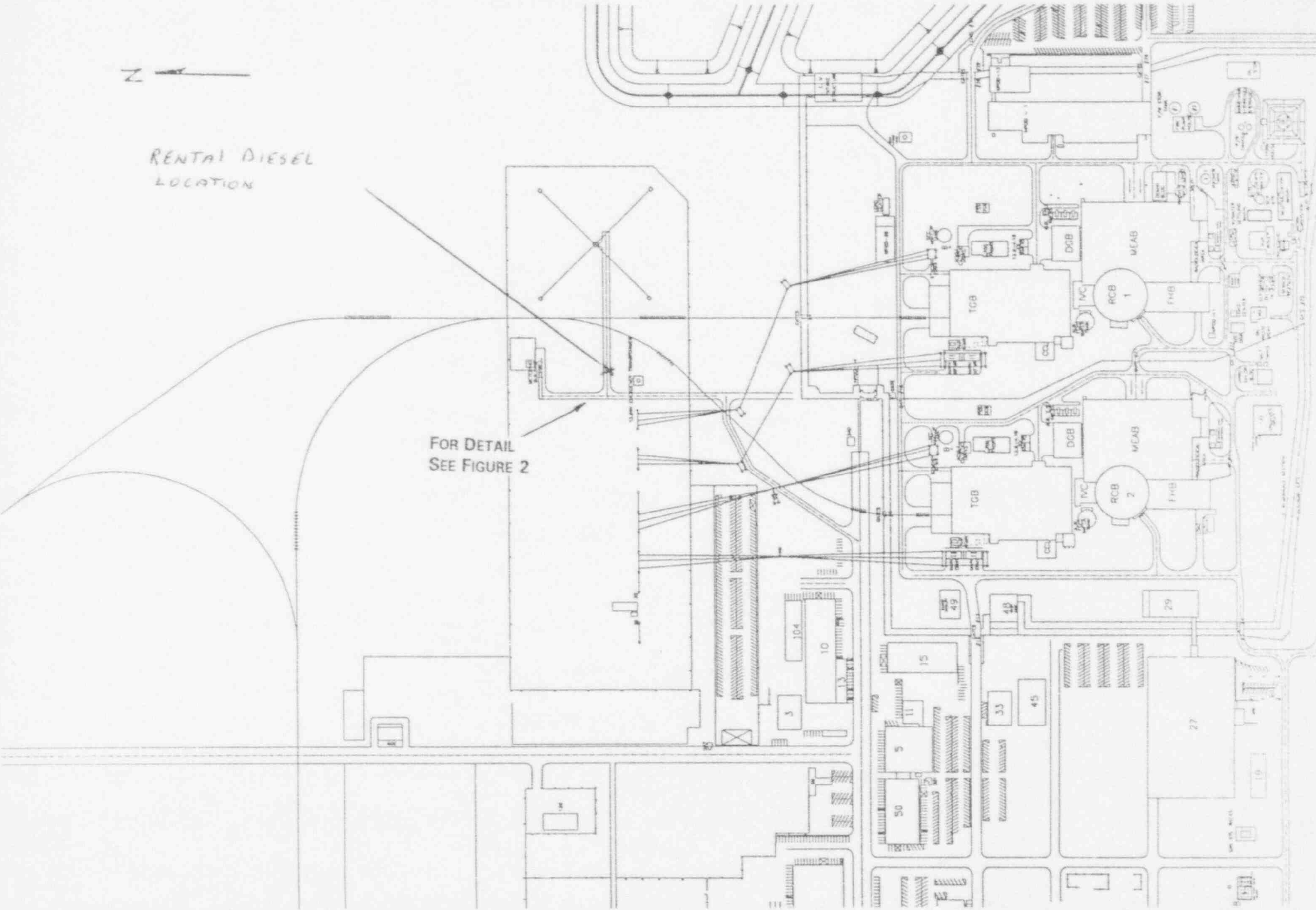


FIGURE 4 - SITE PLAN



PLANT SYSTEMS

3/4.7.7 CONTROL ROOM MAKEUP AND CLEANUP FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Three independent Control Room Makeup and Cleanup Filtration Systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4:

ACTION:

a. With one Control Room Makeup and Cleanup Filtration System inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two Control Room Makeup and Cleanup Filtration Systems inoperable, restore at least two systems to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3.7.7.1 Two independent Control Room Makeup and Cleanup Filtration Systems shall be OPERABLE.

APPLICABILITY: MODES 5 and 6:

ACTION:

a. With ONLY one Control Room Makeup and Cleanup Filtration System ~~in~~operable, restore ~~the inoperable~~ two systems to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Makeup and Cleanup Filtration Systems in the recirculation and makeup air filtration mode.

b. With ~~two~~ ALL Control Room Makeup and Cleanup Filtration Systems inoperable, or with the OPERABLE Control Room Makeup and Cleanup Filtration System, required to be in the recirculation and makeup air filtration mode by ACTION a., not capable of being powered by an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS or positive reactivity changes, crane operation with loads over the spent fuel pool or movement of irradiated fuel.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and

b. ~~Two~~ One standby diesel generator~~s each~~ with a separate fuel tank containing a minimum volume of 60,500 gallons of fuel.

APPLICABILITY: MODE 5 with reactor coolant loops filled. ~~6~~

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the spent fuel pool. Immediately initiate actions to restore the inoperable A.C. electrical power source to OPERABLE status, and initiate action to suspend operations with a potential for draining the reactor vessel. ~~within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 2.0 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.~~

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1, 4.8.1.1.2 (except for Specification 4.8.1.1.2a.3)), and 4.8.1.1.3.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.3 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and

b. Two* standby diesel generators each with a separate fuel tank containing a minimum volume of 60,500 gallons of fuel.

APPLICABILITY: MODE 5 with reactor coolant loops not filled OR Mode 6 with water level in the refueling cavity < 23 ft above the reactor pressure vessel flange.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes movement of irradiated fuel, operations with a potential for draining the reactor vessel or crane operation with loads over the spent fuel pool. Immediately initiate actions to restore the inoperable A.C. electrical power source to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.3 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1, 4.8.1.1.2 (except for Specification 4.8.1.1.2a.3)), and 4.8.1.1.3.

* An alternate onsite emergency power source, capable of supplying power for one train of shutdown cooling (RHR, ECW, CCW and associated instrumentation) may be substitued for one of the required diesels (SR 4.8.1.3 and the fuel requirements do not apply).

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.4 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and

b. One standby diesel generator with a separate fuel tank containing a minimum volume of 60,500 gallons of fuel.

APPLICABILITY: MODE 6 with water level in the refueling cavity ≥ 23 ft above the reactor pressure vessel flange.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, operations with a potential for draining the reactor vessel or crane operation with loads over the spent fuel pool. Immediately initiate actions to restore the inoperable A.C. electrical power source to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.4 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1, 4.8.1.1.2 (except for Specification 4.8.1.1.2a.3)), and 4.8.1.1.3.

ELECTRICAL POWER SYSTEMS

D.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 DC electrical power source subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.3.2, "Onsite Power Distribution - Shutdown." ~~As a minimum, Channel I 125 volt Battery Bank E1A11(Unit 1), E2A11 (Unit 2), and Channel IV 125 volt battery bank E1C11 (Unit 1), E2C11 (Unit 2), and their two associated chargers shall be OPERABLE.~~

APPLICABILITY: MODES 5 and 6.

ACTION:

With one or more required DC electrical power subsystems inoperable, declare affected required feature(s) inoperable OR ~~.the required battery banks and/or charger(s) inoperable,~~ immediately initiate action to suspend operations with a potential for draining the reactor vessel, suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel; initiate corrective action to restore the required DC electrical power subsystems ~~battery banks and/or chargers~~ to OPERABLE status as soon as possible~~, and within 8 hours, depressurize and vent the Reactor Coolant System through a 2.0 square inch vent~~.

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.3.2 The necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.
~~As a minimum, the following electrical busses shall be energized in the specified manner:~~

~~a. Train A and Train C of A.C. ESF busses E1A and E1C (Unit 1), E2A and E2C (Unit 2), each consisting of one 4160 volt ESF bus and two 480 volt A.C. ESF load centers,~~

~~b. Four 120 volt A.C. vital distribution panels consisting of DP001 DP1201 DP002 and DP1204 energized from their associated inverter connected to its respective D.C. bus E1A11 and E1C11 (Unit1), E2A11 and E2C11 (Unit 2), and~~

~~c. Channel I and Channel IV 125 volt D.C. busses energized from their associated battery banks E1A11 and E1C11 (Unit 1), E2A11 and E2C11 (Unit 2).~~

APPLICABILITY MODES 5 and 6.

ACTION:

With one or more required AC, DC, or AC vital bus electrical power distribution subsystems inoperable, declare associated supported required feature(s) inoperable OR ~~any of the above required electrical busses not energized in the required manner~~, immediately initiate action to suspend operations with a potential for draining the reactor vessel, suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel, initiate corrective action to energize the required electrical busses in the specified manner as soon as possible~~, and within 8 hours, depressurize and vent the RCS through at least a 2.0 square inch vent~~.

REFUELING OPERATIONS

3/4.9.12 FUEL HANDLING BUILDING EXHAUST AIR SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 The FHB Exhaust Air System comprised of the following components shall be OPERABLE:

a. Two ~~independent~~ exhaust air filter trains,

b. Two of Three ~~independent~~ exhaust booster fans,

c. Two of Three ~~independent~~ main exhaust fans, and

d. Associated dampers.

APPLICABILITY: Whenever irradiated fuel is in the spent fuel pool.

ACTION:

a. With less than the above FHB Exhaust Air System components OPERABLE but with at least one FHB exhaust air filter train, ~~two~~ one FHB exhaust booster fan, ~~two~~ one FHB main exhaust fan, and associated dampers OPERABLE, fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool may proceed provided the OPERABLE FHB Exhaust Air System components are capable of being powered from an OPERABLE emergency power source and are in operation and discharging through at least one train of HEPA filters and charcoal absorbers.

b. With no FHB exhaust air filter train~~, or less than two FHB exhaust booster fan, or less than two FHB main exhaust fan and associated dampers~~ OPERABLE, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool~~ until at least one FHB exhaust air filter train, two FHB exhaust booster fan, two main exhaust fan, and associated dampers are restored to OPERABLE status.~~

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required FHB Exhaust Air Systems shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal absorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating with ~~two of the three~~ the operable exhaust booster fans and ~~two of the three~~ the operable main exhaust fans operating to maintain adequate air flow rate;