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SOUTHERN COMPANY

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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Request for License Amendment and Exemption:
Turbine Building Battery Room and Electrical Changes (LAR-13-007)

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.90, Southern Nuclear Operating Company (SNC), requests an amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Numbers NPF-91 and NPF-92, respectively). This amendment request proposes to depart from approved Design Control Document (DCD) Tier 2 material that has been previously incorporated into the VEGP Units 3 and 4 Updated Final Safety Analysis Report (UFSAR) and involves associated Tier 2* and certified Tier 1 material. This license amendment request also seeks a revision to the associated material that has been included in Appendix C of the VEGP Units 3 and 4 COLs. Pursuant to the provisions of 10 CFR 52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, design certification rule is also requested for these plant-specific DCD Tier 1 material departures.

The proposed departures consist of changes to plant-specific Tier 2* and Tier 1 (and COL Appendix C) and UFSAR text, tables and figures to:

- Increase the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) total equipment capacity, component ratings, and protective device sizing to support increased load demand,
- Move the Turbine Building First Bay EDS Battery Room and Charger Room, and
- Remove the Class 1E dc and Uninterruptible Power Supply System (IDS) Battery Back-up tie to the Non-Class 1E EDS Battery.

Enclosure 1 provides the description, technical evaluation, and regulatory evaluation (including the Significant Hazards Consideration determination) for the requested license amendment.

Enclosure 2 provides the background and supporting basis for the requested exemption.

Enclosure 3 provides markups depicting the requested changes to plant-specific Tier 1, Units 3 and 4 COL Appendix C, and UFSAR text that are available to the public.

Enclosure 4 provides markups depicting the requested changes to plant-specific Tier 1, Units 3 and 4 COL Appendix C, and UFSAR figures that contain security-related Sensitive Unclassified Non-Safeguards Information (SUNSI) and are withheld from public disclosure in accordance with 10 CFR 2.390 (d).

This letter contains no regulatory commitments.

SNC requests staff approval of the license amendment and associated exemption by March 2014, to support installation of forms and Q-decking slab S11 in the turbine building. Delayed approval of this license amendment could result in a delay in the turbine building construction schedule.

SNC expects to implement the proposed amendment (through incorporation into the appropriate licensing basis documents) within 30 days of approval of the requested changes. In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Mr. Wesley A. Sparkman at (205) 992-5061.

(Oath and affirmation are on the following page.)

Mr. B. H. Whitley states that he is a Regulatory Affairs Director of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

B. H. Whitley

BHW/WES/kms

Sworn to and subscribed before me this 15th *day of* March, *2013*

Notary Public: Kristin Marie Seibert

My commission expires: August 16, 2016

Enclosures
1. Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment Regarding Turbine Building Battery Room and Electrical Changes (LAR-13-007)
2. Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Exemption Request Regarding Turbine Building Battery Room and Electrical Changes
3. Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Licensing Basis Documents – Proposed Changes (LAR-13-007)
4. Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Licensing Basis Documents – Proposed Changes (Withheld Information) (LAR-13-007)

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Southern Nuclear Operating Company

ND-13-0494

Enclosure 1

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Request for License Amendment
Regarding
Turbine Building Battery Room and Electrical Changes
(LAR-13-007)

Table of Contents

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company ("SNC" or "Licensee"), requests an amendment to Combined License (COL) Nos. NPF-91 and NPF-92, (the "COLs"), for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (the "facility"), respectively.

1. Summary Description

The proposed changes would revise the COLs in regard to the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) and Class 1E dc and Uninterruptible Power Supply System (IDS) by:

(1) Increasing EDS total equipment capacity, component ratings, and protective device sizing to support increased load demand,

(2) Moving Turbine Building First Bay EDS Battery Room and Charger Room, and

(3) Removing the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Battery.

The proposed changes require changes to Updated Final Safety Analysis Report (UFSAR) information, which involves changes to the plant-specific Tier 1, and UFSAR Tier 2 and Tier 2* information along with the corresponding changes to COL Appendix C (as applicable to the Tier 1 changes). This enclosure requests approval of the license amendment necessary to implement these changes.

2. Detailed Description and Technical Evaluation

The EDS provides DC and uninterruptible AC electrical power to non-safety related loads during normal and off-normal conditions. EDS supports the performance of non-safety related systems and functions. To accomplish this function and support the non-safety related loads, the EDS has multiple non-Class 1E DC power buses. EDS also provides AC power using equipment such as stationary batteries, chargers, inverters, regulating transformers, switch boards, monitoring and protection devices. The Annex Building contains EDS equipment rooms for the EDS (1, 2, 3, and 4) subsystems. The Turbine Building (TB) first bay contains an equipment room for the EDS5 subsystem.

EDS provides non-Class 1E power to multiple systems and instrumentation that perform defense-in-depth (DID), functions (e.g., hydrogen igniters, diverse actuation system to support anticipated transients without scram (ATWS) mitigation, engineered safety feature actuation system (ESFAS) to provide probabilistic risk assessment (PRA) sensitivity study margin). EDS provides non-Class 1E power for many post-accident monitoring (PAM) functions.

The current design of the TB first bay only provides rooms for the EDS5 subsystem, which provides 250 Vdc power to the turbine generator motor loads. The TB first bay (also identified as the South Bay of the TB), next to the auxiliary building, is a combination of reinforced concrete walls and steel framing with reinforced concrete and steel grated floors.

The TB first bay is classified as a seismic Category II structure due to its immediate proximity to the auxiliary building. The TB first bay structure was analyzed and designed to prevent its collapse under a safe shutdown earthquake (SSE).

The current onsite power system design description has a Class 1E battery back-up tie to the non-Class 1E batteries. This back-up tie is from the IDS back-up battery, which is also identified as the IDS Spare (IDSS) battery. The IDS provides DC and uninterruptible AC electrical power for safety-related equipment during normal and off-normal conditions. The IDS provides power for the safety-related equipment required for the plant instrumentation, control, monitoring and other vital functions needed for shutdown of the plant. Under the current design, the IDSS has sufficient battery capacity to provide battery back-up for any one of the EDS (1, 2, 3, 4 or 5) batteries, or battery back-up for any one of the IDS batteries.

2.1 Increase EDS total equipment capacity, component ratings, and protective device sizing

Detailed Description

Total capacity equipment increases have been proposed for EDS to support sufficient DC and AC power for the connected non-Class 1E loads during normal and off-normal conditions. This proposed increase in capacity results from detailed design changes requiring additional power. For example, the Containment Hydrogen Control System (VLS) changed to a higher power consumption hydrogen igniter, and the Communication System (EFS) loads increased from 2kW to 35kW to support a modern plant-wide EFS/Business Network.

To support EDS protective device coordination, equipment component rating, and protective device sizing, an increase in equipment capacity is proposed, including related arrangement and loading distribution modifications. These proposed changes include EDS configuration changes which would eliminate the EDS (1, 2, 3, and 4)-DS-11 switchboards, combining them into the EDS (1, 2, 3, and 4)-DS-1 switchboards. Also proposed is the deletion of the stand-alone spare EDS charger (EDSS-DC-1), which is not necessary because of the addition of the new EDS Spare (EDSS) battery, chargers and fused transfer switch box (proposed as a direct result of the change proposed in Section 2.3 of this LAR – removal of the IDSS battery back-up tie to EDS).

The table below details the plant-specific Tier 1 COL Appendix C and UFSAR licensing basis changes sought with regard to the increased EDS total equipment capacity, component ratings, and protective device sizing.

Table 2.1-1

Plant-Specific Changes	Description of Proposed Change
Tier 1 and COL App. C Table 2.6.2-1	Increase each EDS battery charger output current testing load from 550 amps to 900 amps, increase each EDS battery testing load from 500 amps to 850 amps, and increase each inverter testing resistive load from 35 kW to 55 kW.
Tier 1 and COL App. C Table 2.6.2-2	Delete four load group 125 Vdc (EDS (1, 2, 3, and 4)-DS-11) switchboards
Tier 1 and COL App. C Figure 2.6.2-1	Delete four (EDS (1, 2, 3, and 4)-DS-11) switchboards
UFSAR Subsection 8.1.2	Delete the tie between IDS and EDS and delete the existing EDS spare charger (EDSS-DC-1)
UFSAR Subsection 8.3.2.1.2	Delete the existing EDS spare charger (EDSS-DC-1), and replace last paragraph with a description of the new non-Class 1E EDSS Battery
UFSAR Figure 8.3.2-1 (Sh 2), and 8.3.2-3 (Sh 1, 2, & 3)	Remove IDS spare battery tie to EDS batteries and EDS spare charger. Revise to reflect component electrical parameter nominal value changes and the addition of spare component values
UFSAR Figure 8.3.2-3 (Sh 1)	Delete the existing EDS spare charger (EDSS-DC-1)
UFSAR Subsections 8.3.2.5.10, 8.3.2.5.11, and 8.3.2.5.12	Increase each EDS battery charger output current testing load from 550 amps to 900 amps, increase each EDS battery testing load from 500 amps to 850 amps, and increase each inverter testing resistive load from 35 kW to 55 kW
UFSAR Tables 8.3.1-1 (Sh 3, 4, & 5), 8.3.1-2 (Sh 3 & 4), and 8.3.2-6 (Sh 1, 2, & new 3).	Revise to reflect component electrical parameter nominal value changes and the addition of spare component values
UFSAR Subsection 14.2.9.2.16	Revised to clarify the capabilities of each EDS battery and charger to serve defense-in-depth loads

Technical Evaluation

The proposed EDS design changes to increase the total capacity of the EDS equipment would continue to maintain the existing UFSAR system design functions to provide DC and uninterruptible AC electrical power to non-safety related loads during normal and off-normal conditions.

To achieve this continued support of the EDS design functions, the proposed changes include protective device coordination, equipment component rating, and protective device sizing increases, as well as related arrangement and loading distribution modifications. These proposed EDS changes would utilize equipment of similar construction, technology, and reliability that would continue to meet the load demand for each of the supported systems and meet the regulatory requirements and electrical codes and standards currently identified in the existing UFSAR. The proposed protective device changes would continue to be capable of selectively clearing faults in the system for the highest fault current available at any point in the EDS.

The EDS batteries would continue to be sized to supply the system loads for a period of at least 2 hours after loss of all AC power sources. A new compatibly sized EDS spare (EDSS) back-up battery subsystem would obviate the need for the existing EDS spare battery charger (EDSS-DC-1). The new EDSS subsystem would consist of a spare battery, charger, and fused transfer switch box capable of connection to any one of the EDS (1, 2, 3, 4 or 5) subsystem distribution buses. This EDSS is proposed as a result of the change proposed in Section 2.3 of this LAR – removal of the IDSS battery back-up tie to EDS.

It is proposed that the EDS inverter would change from 50 kilovolt-ampere (kVA) to 75kVA, the EDS regulating transformer would change from 75kVA to 100kVA, and the EDS minimum battery capacity would change from 2400 Ampere-hour (Ah) to 3500Ah.

Other related power supply system proposed changes (identified in this LAR) introduce battery and uninterruptible power supply (UPS) bus interconnection changes requiring equipment additions, and deletions, as well as layout changes in the Annex Building EDS equipment rooms for EDS (1, 2, 3, and 4) subsystems. TB first bay equipment room proposed changes include the addition of an EDSS subsystem battery, chargers, and fused transfer switch box separate from the existing EDS5 subsystem, which provides turbine generator motor load 250 Vdc support. This proposed EDSS subsystem battery addition continues to meet the Utility Requirement Document (URD) Chapter 11 requirement that "… provision shall be made to permit connecting each bus to a standby, backup dc source (i.e., a combination of a battery and a battery charger) within a period of time substantially shorter than the dc bus AOT …" (URD Volume III, Chapter 11, Paragraph 7.3.1.4) (EPRI Proprietary document – Not available to the public). This proposed change includes removal of the tie between the Class 1E IDS spare battery and the non-Class 1E EDS batteries.

Along with the proposed capacity increases, there are proposed EDS configuration optimization changes that eliminate the EDS (1, 2, 3, and 4)-DS-11 switchboards, combining them into the EDS (1, 2, 3, and 4)-DS-1 switchboards, respectively. There is sufficient switchboard space to contain the consolidated equipment in a single switchboard per subsystem, and still meet the applicable requirements for each subsystem. Also, there is a proposed change for the deletion of the stand-alone spare EDS charger (EDSS-DC-1), which is not necessary because of the addition of the new EDS spare battery, chargers, and fused transfer switch box.

The addition of the EDSS battery and chargers in place of the tie to the IDS spare battery, along with the increase in capacity, were determined to have a negligible impact on the PRA, which still is considered representative of the AP1000 design as a whole. There is no effect on the existing PRA risk significance investment protection determination for EDS.

The proposed changes continue to allow EDS to provide sufficient non-Class 1E power to multiple systems and instrumentation that perform DID Investment Protection functions identified in UFSAR Table 16.3-1 (specifically item 3.4) and many PAM functions identified in UFSAR Table 7.5-1.

The EDS provides the DC and UPS power for the operation of the DAS and turbine trip systems, and the ATWS requirements would continue to be supported by the EDS capacity and equipment rating increases; therefore, 10 CFR 50.62 (ATWS Rule) would continue to be satisfied.

For the reasons discussed above, the proposed changes to the EDS total capacity, component ratings, and protective device sizing and removal of Class 1E IDS battery back-up tie to the EDS battery do not have an adverse impact on the ability of the EDS and IDS equipment to perform their design functions. The design of the EDS and IDS equipment and TB structure would continue to meet the same regulatory acceptance criteria and electrical codes and standards as stated in the UFSAR.

2.2 Move Turbine Building First Bay EDS Battery Room and Charger Room

Detailed Description

The EDS Battery Room and Charger Room are proposed to be moved from one elevation to another to accommodate removal of the air-handling units from the TB first bay roof where there is a risk of the air-handling units falling onto the Auxiliary Building (containing safety-related equipment) during an SSE. The EDS Battery Room and Charger Room would be able to accommodate the proposed new Non-Class 1E EDS Spare (EDSS) Battery.

The proposed changes affect the Reactor Coolant Pump (RCP) Variable Frequency Drives (VFDs) and switchgear, which would be consolidated into one room, and the Heating, Ventilation, and Air Conditioning (HVAC) air-handling

units, which would be relocated from the roof to the floor where the EDS battery and charger rooms were located. This would be accomplished in conjunction with the air-handling units being moved from the roof.

Proposed TB first bay relocations include:

- move Air-Handling Units 03A/B from the roof to elevation 117'-6"
- move the EDS Battery Room and Charger Room from elevation 117'-6" to elevation 135'-3", and
- move two Reactor Coolant Pump (RCP) Variable Frequency Drives (VFDs) from elevation 135'-3" to elevation 148'-10" (co-locate with two existing RCP VFDs) and consolidate the four RCP VFDs Switchgear at this location.

Proposed TB first bay structural change includes:

- raise the elevation of the floor 10 inches from elevation 148'-0" to elevation 148'-10" to accommodate EDS battery and charger room overhead cable tray access on the floor below (elevation 135'-3"),

The table below details the UFSAR licensing basis changes sought with regard to moving the EDS Battery Room and Charger Room. (Figures that contain Sensitive Unclassified Non-Safeguards Information (SUNSI) are identified as such.) (Bracketed floor elevations i.e. [xxx'-x"] identify changes resulting from other in-process LARs.)

Table 2.2-1

Plant-Specific Changes	Description of Proposed Change
UFSAR Tier 2* Figure 9A-2 (SUNSI) from (Sheet 2) to (Sheet 3)	Move from elevation 117'-6" [120'-6"] to elevation 135'-3" [141'-3"] the EDS Battery Room and Charger Room walls and room numbers (21581 and 21582) retaining the Fire Area/Fire Zone requirements
UFSAR Figures 1.2-24 (SUNSI) and 1.2-25 (SUNSI)	Move EDS Battery Room and Charger Room from elevation 117'-6" [120'-6"] to elevation 135'-3" [141'-3"]
UFSAR Figure 1.2-30 (SUNSI)	Increase floor elevation 148'-0" to 148'-10" to accommodate EDS Battery Room and Charger Room over-head cabling from panel on the floor below, and add consolidated RCP VFD room (21583) at elevation 148'-10"

Table 2.2-1

Plant-Specific Changes	Description of Proposed Change
UFSAR Subsections 9A.3.2.1, 9A.3.2.15, and 9A.3.2.16	Re-identify Fire Area/Fire Zones because of EDS Battery Room and Charger Room movement to a different floor (Fire Zone)
UFSAR Table 9A-3	Re-identify Fire Area/Fire Zones because of EDS Battery Room and Charger Room movement to a different floor (Fire Zone)
UFSAR Figures 12.3-1 (SUNSI) and 12.3-3 (SUNSI)	Remove EDS Battery Room and Charger Room walls and room numbers from Radiation Zones

Technical Evaluation

Turbine Building – First Bay

The TB would remain a nonsafety-related structure that houses the main turbine generator and the power conversion cycle equipment and auxiliaries. There is no safety-related equipment in the TB. The TB would continue to consist of two separate superstructures, the first bay and the main area, both supported on a common reinforced concrete basemat. The first bay would continue to be classified as a seismic Category II structure due to its immediate proximity to the auxiliary building. The first bay structure is analyzed and designed to prevent its collapse under an SSE. The proposed changes and movement of equipment does not change the first bay design function or its ability to continue to satisfy the seismic Category II requirements.

Physical separation would continue to be provided between the structural elements of the turbine, annex, and radwaste buildings and the nuclear island structure. This separation would continue to permit horizontal motion of the buildings in an SSE without impact between structural elements of the buildings. The TB elevations are not part of the plant-specific Tier 1 design description (plant-specific Tier 1 Figure 3.3-11B, Note 2.). Nevertheless, the first bay would continue to be designed in accordance with American Concrete Institute (ACI) standard ACI-349 for concrete features and American Institute of Steel Construction (AISC) standard AISC-N690 for steel features.

The seismic modeling and analysis methods for seismic Category II would continue to apply to the TB first bay structure. These requirements are unchanged by the elevation change, which would also have to meet these seismic criteria; therefore, 10 CFR 50 Appendix A General Design Criterion (GDC) 2 would continue to be satisfied.

The 10 CFR 50 Appendix S criteria are utilized to design the TB first bay to seismic Category II criteria, which would continue to be used for the first bay; therefore, this regulation would continue to be satisfied.

The equipment relocations of the EDS battery room, charger room, floor elevation, and TB ventilation system (VTS) air-handling units do not have an adverse impact on the ability of the TB structure to perform the design functions to protect the systems, equipment, and components. Relocation of the equipment does not affect the TB first bay structural integrity. The design of the TB structure, including the TB first bay floor elevation increase above the EDS battery room and charger room, would continue to meet the same regulatory acceptance criteria and structural codes and standards as stated in the UFSAR; therefore, the changes do not affect the prevention and mitigation of other abnormal events, e.g., accidents, anticipated operational occurrences, earthquakes, floods and turbine missiles, or their safety or design analyses. Also, the changes do not involve any safety-related structures, systems, and components (SSCs) or function used to mitigate an accident.

The proposed TB configuration and equipment relocation changes will maintain existing safety margin through application of the codes and standards and adherence to the assumptions used in the UFSAR analyses of these systems and structures (e.g., seismic Category II for the TB first bay) and the events associated with these systems and structures. Therefore, the equipment relocations of the EDS battery room, charger room, and VTS air handling units would satisfy the same design functions in accordance with the same codes and standards as stated in the UFSAR. These changes would not affect any design code, function, design analysis, safety analysis input or result, or design/safety margin.

Turbine Building Ventilation System

The VTS serves no safety-related function and therefore has no nuclear safety design basis. The system is non-seismic. With the proposed changes, the VTS would continue to maintain acceptable temperatures for equipment operation. It would continue to provide conditioned air to maintain acceptable temperatures for electrical equipment rooms and personnel work areas.

First Bay EDS Battery Room and Charger Room

The relocated rooms would continue to support EDS5 which provides turbine generator motor load 250 Vdc support. EDS5 subsystem equipment changes would include a capacity increase to continue support for the turbine generator motor loads. This configuration would continue to isolate the effects of circuit interference originating from the starting of large DC motors.

The proposed new EDSS battery, including its associated equipment, would be co-located with EDS5 and accommodated, relative to footprint sizing requirements in these rooms, to provide continued satisfaction of URD requirements. EDSS would

be connectable to any one of the other EDS (1 through 5) batteries to provide the necessary back-up DC power.

There still would be no DID or PAM requirements for this EDS5 subsystem portion of EDS (EDS 1 through 4 subsystems would continue to support DID and PAM requirements).

The addition of an EDS spare (EDSS) battery, chargers and fused transfer switch box would perform the same spare back-up battery function addressed in this LAR Section 2.1. The proposed EDSS battery, chargers and fused transfer switch box would be located in the TB EDS battery and charger rooms along with the EDS5 subsystem. The EDS battery room would be sized to fit the largest possible cell size available for both the existing EDS5 battery and the additional EDSS battery. The charger room would be based on the "not to exceed" dimensions of the corresponding equipment (for EDS 1 through 4) subsystems located in the Annex Building.

First Bay Reactor Coolant Pump Variable Frequency Drives

The RCPs would continue to be powered from the four switchgear buses located in the TB, one RCP per bus. First bay situated VFDs would continue to be provided for RCP startup and for RCP operation when the reactor trip breakers are open. During normal power operation (reactor trip breakers are closed), 60 Hz non-Class 1E power would continue to be provided directly to the RCPs and the non-safety VFDs would remain not connected.

Turbine Building Fire Protection

The proposed changes to the TB first bay Fire Area/Fire Zone continue to meet the requirements in the UFSAR Section 9A Fire Protection Analysis. The respective room heat loadings for the RCP VFD and switchgear (Room 21583) and the VTS air-handling units (Room 21480) would be updated to account for the changes (UFSAR Table 9A-3). The equipment locations and room numbers would be changed for the EDS Battery and Charger rooms (Rooms 21581 and 21582) and the new EDSS battery and chargers would be added to these same rooms (Rooms 21581 and 21582) and the respective room heat loadings would be updated to account for the changes (UFSAR Table 9A-3). Addition of the proposed EDSS battery has been determined via impact review to have a negligible impact on the Fire PRA, which still is considered representative of the AP1000 design as a whole.

The fire protection system (FPS) would continue to detect and suppress fires in the plant, which includes the TB.

A fire in the TB fire areas would continue to not affect safe shutdown capability. Fire areas located in the TB would continue to be separated from the safety-related areas of the nuclear island by a 3-hour fire barrier wall. Consistent with the existing design, neither a fire nor fire suppression activities in TB fire areas would affect the safe shutdown capability of components located in other fire areas.

The first bay Fire Area/Zones and room numbers would be changed for the relocated equipment.

2.3 Remove Class 1E IDS Battery Back-up Tie to Non-Class 1E EDS Batteries

Detailed Description

This proposed change includes removal of the tie between the Class 1E IDS spare battery (IDSS) and the non-Class 1E batteries (EDS1 through 5), and the addition of a larger capacity spare EDS battery, chargers and fused transfer switch box to perform the same function, which satisfies the Utility Requirements Document (URD) Volume III Chapter 11 Subsection 7.3.1.4 requirement for a "… standby, backup dc source ….". The EDS battery load demand increased such that the smaller IDS Spare (IDSS) battery capacity could no longer meet the back-up load requirement. The proposed larger capacity EDS spare (EDSS) battery, chargers and fused transfer switch box would be located in the TB first bay in the relocated EDS Battery Room and Charger Room. This proposed change also would result in the removal of some IDS equipment (i.e., Spare Battery 125/250 Vdc Disconnect Switch IDSS-SW-1 and IDS Spare Termination Box (IDSS-DF-6)) as a result of disconnecting the IDSS battery tie to EDS.

The table below details the COL Appendix C and UFSAR licensing basis changes sought with regard to removing the Class 1E IDS battery back-up tie to the non-Class 1E EDS batteries.

Table 2.3-1

Plant-Specific Changes	Description of Proposed Change
Tier 1 and COL App. C Tables 2.6.3-1 & 2.6.3-4	Remove IDS Spare Battery 125/250 Vdc Disconnect Switch IDSS-SW-1 and Spare Termination Box IDSS-DF-6
UFSAR Tables 3.11-1 & 3I.6-2	Remove IDS Spare Battery 125/250 Vdc Disconnect Switch IDSS-SW-1 and Spare Termination Box IDSS-DF-6
UFSAR Subsection 8.1.2	Delete the tie between IDS and EDS and delete the existing EDS spare charger (EDSS-DC-1)
UFSAR Subsection 8.3.2.1.2	Delete the existing EDS spare charger (EDSS-DC-1), and replace last paragraph with a description about the new non-Class 1E EDSS Battery

Technical Evaluation

This proposed change to remove the tie between the Class 1E IDS spare (IDSS) battery and the non-Class 1E EDS batteries (EDS 1 through 5) and the addition of an EDS spare (EDSS) battery would continue to allow EDS and IDS to meet their individual system design functions. The proposed removal of the interface tie with the Class 1E IDSS battery would remove the interface switch (i.e., 125/250 Vdc Disconnect Switch IDSS-SW-1), spare termination box (i.e., IDS Spare Termination Box IDSS-DF-6) and cabling from the Auxiliary Building to the Annex Building and TB. This IDSS equipment would become non-functional and unnecessary spare equipment; therefore, it would be deleted.

The addition of the EDSS battery remains consistent with the URD Volume III Chapter 11 Section 7.3.1.4. NRC review of the existing configuration of IDS, including the IDS spare battery back-up tie to EDS is discussed in NUREG-1793 (AP1000 Final Safety Evaluation Report, September 2004) Subsection 8.3.2.1.2 "Class 1E Uninterruptible Power System." The existing EDS spare battery charger (EDSS-DC-1) would be deleted because it would be unnecessary due to the addition of the new EDSS battery, chargers and fused transfer switch box.

Deletion of the EDS tie to the IDS spare battery was determined via impact review to have a negligible impact on the PRA, which still is considered representative of the AP1000 design as a whole. There is no effect on the existing PRA risk significance investment protection determination for EDS.

The separation of the IDS spare back-up battery from any interface with the non-Class 1E EDS batteries continues to support performance of the safety-related functions by further isolating IDS from external failure potential from the EDS interface. Implementation of the inspection and testing requirements of IDS would continue to be satisfied and inspection and testing would be minimally reduced because of the separation of the IDS spare back-up battery from any interface with the non-Class 1E EDS batteries. Although the EDS spare battery source (i.e., IDS spare battery in the Auxiliary Building) is moved from a seismic Category I structure to a seismic Category II structure (i.e., TB first bay), there is no requirement for the EDS spare battery to be located in a seismic structure. The design of the EDS and IDS equipment would continue to meet the same regulatory acceptance criteria, and electrical codes and standards as stated in the UFSAR.

The proposed changes described and evaluated in Sections 2.1, 2.2, and 2.3 above would not introduce a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in significant fuel cladding failures. Furthermore, these changes affect electrical systems and components in the Turbine Building only, and accordingly do not introduce any new sources of effluents or affect the release of any effluents.

The changes are limited to the Turbine Building, which does not contain radioactive materials, and the systems affected by this change are electrical systems only, and accordingly do not contain radioactive materials.

3. Technical Evaluation (Included in Section 2, above)

4. Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52, Appendix D, Section VIII and 10 CFR 52.63(b)(1) require NRC approval for Tier 1 information departures. This departure involves a departure from Tier 1 information: therefore, NRC approval is required prior to making the plant-specific Tier 1 changes addressed in this departure.

10 CFR 52, Appendix D, Section VIII.B.6.b(4), requires prior NRC approval for Tier 2* information related to fire areas. TB room and equipment changes affect fire zones within fire area boundaries, which constitute UFSAR Tier 2* information changes. Therefore, an LAR (as provided herein) is required.

10 CFR 52, Appendix D, VIII.B.5.a, requires prior NRC approval for Tier 2 changes that involve departures from Tier 1 and Tier 2* information. The proposed change affects Tier 1 Section 2.6 and Tier 2* information in Figure 9A-2 (Sheets 2 and 3), and thus, NRC approval is required.

10 CFR 50.62 – *Requirements for reduction of risk from anticipated transients without scram (ATWS) events for light-water-cooled nuclear power plants*. This regulation requires a Diverse Actuation System (DAS) in the AP1000 plant design to be functional to provide turbine trip and passive residual heat removal actuation functions during power operation. EDS provides the DC and UPS power for the operation of the DAS and turbine trip systems, and these ATWS requirements would continue to be supported by the EDS capacity and equipment rating increases; therefore, this regulation would continue to be satisfied.

10 CFR 50 Appendix A, General Design Criterion (GDC) 2 – *Design bases for protection against natural phenomena*. “Structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capabilities to perform their safety functions.” The TB first bay is designed to seismic Category II criteria and these requirements are unchanged by the structural elevation (floor) change, which would also have to meet these seismic criteria; therefore, this regulation would continue to be satisfied.

10 CFR 50 Appendix A, GDC 17 – *Electric power systems*. "An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety." IDS is a portion of the plant electrical system that supports performance of the safety-related functions. The separation of the IDS spare back-up battery from any interface with the non-Class 1E EDS batteries continues to support performance of the safety-related functions by further isolating IDS from external failure potential from the EDS interface, thus this criterion would continue to be satisfied.

10 CFR 50 Appendix A, GDC 18 – *Inspection and testing of electric power systems*. "Electric power systems important to safety shall be designed to permit appropriate periodic inspections and testing …." Implementation of the inspection and testing requirements of IDS would still be satisfied and inspection and testing minimally reduced because of the separation of the IDS spare back-up battery from any interface with the non-Class 1E EDS batteries, thus this criterion would continue to be satisfied.

10 CFR 50 Appendix S – *Earthquake Engineering Criteria for Nuclear Power Plants*. This provides the criteria to implement 10 CFR 50, Appendix A, GDC 2, with respect to the natural phenomena "earthquakes." These criteria are utilized to design the TB first bay to seismic Category II criteria, which would continue to be used for the first bay; therefore, this regulation would continue to be satisfied.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration

The proposed changes would revise the Combined Licenses (COLs) in regard to the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) and Class 1E dc and Uninterruptible Power Supply System (IDS) by: (1) increasing EDS total equipment capacity, component ratings, and protective device sizing to support increased load demand, (2) Moving Turbine Building first bay EDS Battery Room and Charger Room, and (3) removing the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Batteries. These will be collectively called "proposed changes." This activity involves departures from Updated Final Safety Analysis Report (UFSAR) Tier 2 text, tables and figures and a departure from plant-specific Tier 1 and UFSAR Tier 2* information. The plant-specific Tier 1 departure also involves a proposed amendment to the corresponding information in Appendix C of the COLs.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed changes to use the same type of electrical equipment with higher ratings and capacity do not affect the equipment failure probabilities or alter any accident initiator or initiating sequence of events. The proposed changes do not have an adverse impact on the ability of the Non-Class 1E direct current (dc) and Uninterruptible Power Supply System (EDS), the Class 1E dc and Uninterruptible Power Supply System (IDS) equipment, or the Turbine Building (TB) structure to perform their design functions to protect the systems, equipment, and components. The design of the EDS and IDS equipment, and TB structure, including the TB first bay above the EDS battery room and charger room, would continue to meet regulatory acceptance criteria and electrical and structural codes and standards required by the Updated Final Safety Analysis Report (UFSAR); therefore, the proposed changes do not affect the prevention and mitigation of other abnormal events, such as accidents, anticipated operational occurrences, earthquakes, floods and turbine missiles, or their safety or design analyses. Therefore, the probabilities of any accidents previously evaluated in the UFSAR are not significantly increased.

The proposed changes do not introduce a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in significant fuel cladding failures. Also, the changes do not involve any safety-related structures, systems, and components (SSCs) or functions used to mitigate an accident; therefore, the consequences of any accidents evaluated previously in the UFSAR are not significantly increased.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

4.3.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The design of the EDS and IDS equipment and TB structure, including the TB first bay above the EDS battery room and charger room, would continue to meet regulatory acceptance criteria and electrical and structural codes and standards

required by the UFSAR. The proposed change in location of equipment to the seismic Category II TB first bay structure does not affect the design function of the TB, the operation of the relocated equipment, or the ability of the relocated equipment to meet its design function. The increase in the ratings and capacity of electrical equipment and change in the source of the EDS battery back-up source does not affect the EDS or IDS design function. Because the SSCs and equipment affected by the proposed change will be designed to the same electrical and structural codes and standards, will continue to meet current regulatory acceptance criteria, and will continue to perform their design functions, the proposed change will not create the possibility of any new or different accidents.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The current seismic requirements applicable to the seismic Category II TB first bay structure, including the seismic modeling and analysis methods, will continue to apply to the first bay floor elevation increase. The proposed changes to the EDS and EDS equipment will continue to meet existing electrical equipment industry standard recommendations. The proposed changes maintain existing safety margin by continuing to meet the current requirements of the UFSAR by satisfying the current design functions, codes and standards as stated in the UFSAR. Because no safety analysis or design basis acceptance limit/criterion is challenged or exceeded by these proposed changes, no margin of safety is reduced.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

4.4 Conclusion

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The above evaluations demonstrate that the requested changes can be accommodated without an increase in the probability or consequences of an accident previously evaluated, without creating the possibility of a new or different kind of accident from any accident previously evaluated, and without a significant reduction in a margin of safety. Having arrived at negative declarations

with regard to the criteria of 10 CFR 50.92, this assessment determined that the requested change does not involve a Significant Hazards Consideration.

5. Environmental Considerations

This is a request to amend the combined licenses (COLs) for the Licensee to allow departure from various elements of the certification information in the Updated Final Safety Analysis Report (UFSAR) Tier 2 and Tier 2* of the plant-specific Design Control Document (DCD), which also involve departures from plant-specific Tier 1 information and the corresponding elements in Appendix C of the COLs. The proposed amendment would revise the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) and Class 1E dc and Uninterruptible Power Supply System (IDS) by: (1) increasing EDS total equipment capacity, component ratings, and protective device sizing to support increased load demand, (2) Moving Turbine Building First Bay EDS Battery Room and Charger Room, and (3) removing the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Battery. These physical changes will be collectively called "proposed changes."

The Licensee has determined that the anticipated construction and operational effects of the proposed amendment meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

(i) There is no significant hazards consideration.

As documented in Section 4.3, Significant Hazards Consideration, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration determined that (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The proposed changes involve equipment relocation and the ratings and capacities of electrical equipment. Therefore, the proposed changes are

unrelated to any aspects of plant construction or operation that would introduce any changes to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents) or affect any plant radiological or non-radiological effluent release quantities. Furthermore, these changes do not diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

(ii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes only affect non-radioactive systems and areas of the plant that contain non-radioactive plant systems. Consequently, the proposed changes have no effect on individual or cumulative occupational radiation exposure during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above review of the proposed amendment, it has been determined that anticipated construction and operational impacts of the proposed amendment do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed amendment is not required.

6. Reference

1. EPRI ALWR Utility Requirements Document, Volume III, Chapter 11: Electric Power Systems Paragraph 7.3.1.4. (EPRI Proprietary document-not available to the public).

Southern Nuclear Operating Company

ND-13-0494

Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Exemption Request
Regarding
Turbine Building Battery Room and Electrical Changes

1.0 Purpose

Southern Nuclear Operating Company (the Licensee) requests a permanent exemption from the provisions of 10 CFR 52, Appendix D, Section III.B, "Design Certification Rule for the AP1000 Design, Scope and Contents," to allow a departure from elements of the certification information in Tier 1 of the Generic DCD. The regulation, 10 CFR 52, Appendix D, Section III.B, requires an applicant or licensee referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certification information in DCD Tier 1. The Tier 1 information for which a plant-specific departure and exemption is being requested includes changes to the onsite power system description.

This request for exemption will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow departures from generic Tier 1 information due to the following proposed changes to the system-based design descriptions and Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) figures and tables:

- Table 2.6.2-1
  - Increase each Non-Class 1E dc and Uninterruptible Power Supply System (EDS) battery charger output current testing load from 550 amps to 900 amps, increase each EDS battery testing load from 500 amps to 850 amps, and increase each inverter testing resistive load from 35 kW to 55 kW; delete four load group 125 Vdc (EDS (1, 2, 3, and 4)-DS-11) switchboards,
  - Delete four (EDS (1, 2, 3, and 4)-DS-11) switchboards.
- Table 2.6.2-1
  - Delete four load group 125 Vdc (EDS (1, 2, 3, and 4)-DS-11) switchboards.
- Table 2.6.3-1 & 2.6.3-4
  - Remove the Class 1E dc and Uninterruptible Power Supply System (IDS) Spare Battery 125/250 Vdc Disconnect Switch IDSS-SW-1 and Spare Termination Box IDSS-DF-6

This request will provide for the application of the requirements for granting exemptions from design certification information, as specified in 10 CFR Part 52, Appendix D, Section VIII.A.4, and10 CFR §§52.63, 52.7, and 50.12.

2.0 Background

The Licensee is the holder of Combined License Nos. NPF-91 and NPF-92, which authorize construction and operation of two Westinghouse Electric Company AP1000 nuclear plants, named Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively. During the detailed design phase of the onsite power system, departures from AP1000 generic DCD Tier 2 information were determined necessary to continue to maintain the existing UFSAR system design functions to provide DC and uninterruptible AC electrical power to non-safety related loads during normal and off-normal conditions. Specifically, a change is proposed to:

(1) increase the EDS total equipment capacity, component rating, and protective device sizing, and (2) delete the stand-alone spare EDS charger, which is not necessary because of the addition of the new EDS Spare Battery components.

An exemption from elements of the AP1000 certification (Tier 1) design information to allow a departure from the building design description is requested. The proposed departure would allow the increase in the EDS total equipment capacity, component ratings, and protective sizing to support increased load demand and remove the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Battery.

3.0 Technical Justification of Acceptability

The EDS total equipment capacity, component ratings, and protective device sizing increase will continue to maintain existing system design functions to provide DC and uninterruptible AC electrical power to non-safety related loads during normal and off-normal conditions. In addition, removal of the tie between the Class 1E IDS spare battery and the non-Class 1E batteries with the addition of an EDS spare battery would continue to allow EDS and IDS to meet their individual system design function.

Detailed technical justification for this exemption is provided in Section 2 of the accompanying License Amendment Request in Enclosure 1.

4.0 Justification of Exemption

10 CFR Part 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants. Because the Licensee has identified changes to the Tier 1 information related to the Tier 2 departure discussed in Enclosure 1 of the accompanying License Amendment Request, an exemption from the certified design information in Tier 1 is needed.

10 CFR Part 52, Appendix D, and 10 CFR §§ 50.12, 52.7, and 52.63 state that the NRC may grant exemptions from the requirements of the regulations provided six conditions are met: 1) the exemption is authorized by law [§50.12(a)(1)]; 2) the exemption will not present an undue risk to the health and safety of the public [§50.12(a)(1)]; 3) the exemption is consistent with the common defense and security [§50.12(a)(1)]; 4) special circumstances are present [§50.12(a)(2)]; 5) the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption [§52.63(b)(1)]; and 6) the design change will not result in a significant decrease in the level of safety [Part 52, App. D, VIII.A.1].

The requested exemption satisfies the criteria for granting specific exemptions, as described below.

1. This exemption is authorized by law

The NRC has authority under 10 CFR §§ 50.12, 52.7, and 52.63 to grant exemptions from the requirements of NRC regulations. Specifically, 10 CFR §§50.12 and 52.7 state that the NRC may grant exemptions from the requirements of 10 CFR Part 52 upon a proper showing. No law exists that would preclude the changes covered by this exemption request. Additionally, granting

of the proposed exemption does not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

Accordingly, this requested exemption is "authorized by law," as required by 10 CFR 50.12(a)(1).

2. This exemption will not present an undue risk to the health and safety of the public

The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 DCD to depart from the AP1000 certified (Tier 1) design information. The plant-specific Tier 1 DCD will continue to reflect the approved licensing basis for the Licensee, and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 1 of the plant-specific DCD. Because the change to the onsite power system description maintains its design functions, the new design will continue to protect the health and safety of the public. Therefore, no adverse safety impact which would present any additional risk to the health and safety is present. The affected Design Description in the plant-specific Tier 1 DCD will also continue to provide the detail necessary to support the performance of the associated ITAAC.

Therefore, the requested exemption from 10 CFR 52, Appendix D, Section III.B would not present an undue risk to the health and safety of the public.

3. The exemption is consistent with the common defense and security

The exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would change elements of the plant-specific Tier 1 DCD by departing from the AP1000 certified (Tier 1) design information. The exemption does not alter the design, function, or operation of any structures or plant equipment that are necessary to maintain a safe and secure status of the plant. The proposed exemption has no impact on plant security or safeguards procedures.

Therefore, the requested exemption is consistent with the common defense and security.

4. Special circumstances are present

10 CFR 50.12(a)(2) list six “special circumstances” for which an exemption may be granted. Pursuant to the regulation, it is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(ii). That subsection defines special circumstances as when “Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.”

The rule under consideration in this request for exemption is 10 CFR 52, Appendix D, Section III.B, which requires that a licensee referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The VEGP Units 3 and 4 COLs reference the AP1000 Design Certification Rule and incorporate by reference the requirements of 10 CFR Part

52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D.

The proposed changes to the onsite power system description maintain the design functions of the onsite power system. This change does not impact the ability of any structures, systems, or components to perform their functions or negatively impact safety. Accordingly, this exemption from the certification information will enable the licensee to safely construct and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR 52, Appendix D.

Therefore, special circumstances are present, because application of the current generic certified design information in Tier 1 as required by 10 CFR Part 52, Appendix D, Section III.B, in the particular circumstances discussed in this request is not necessary to achieve the underlying purpose of the rule.

5. The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption

Based on the nature of the changes to the plant-specific Tier 1 information and the understanding that these changes support the onsite power system, it is likely that other AP1000 licensees will request this exemption. However, if this is not the case, the special circumstances continue to outweigh any decrease in safety from the reduction in standardization because the key design functions of the onsite power system associated with this request will continue to be maintained. This exemption request and the associated marked-up tables and figure demonstrate that there is a minimal change from the generic AP1000 DCD, minimizing the reduction in standardization and consequently the safety impact from the reduction.

Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

6. The design change will not result in a significant decrease in the level of safety.

The exemption revises the plant-specific DCD Tier 1 information by altering the description of the onsite power system. The onsite power system continues to enable the electrical system to meet its design functions. Because these functions continue to be met, there is no reduction in the level of safety.

Therefore, the design change will not result in a significant decrease in the level of safety.

5.0 Risk Assessment

A risk assessment was determined to be not applicable to address the acceptability of this request.

6.0 Precedent

None.

7.0 Environmental Consideration

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed exemption does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Specific justification is provided in Section 5 of the corresponding amendment request in Enclosure 1. Accordingly, the proposed exemption meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed exemption.

8.0 Conclusion

The proposed changes to Tier 1 are necessary to revise the onsite power system design description in the plant-specific DCD Tier 1. The exemption request meets the requirements of 10 CFR 52.63, *"Finality of design certifications,"* 10 CFR 52.7, *"Specific exemptions,"* 10 CFR 50.12, *"Specific exemptions,"* 10 CFR 51.22, and 10 CFR 52 Appendix D, *"Design Certification Rule for the AP1000."* Specifically, the exemption request meets the criteria of 10 CFR 50.12(a)(1) in that the request is authorized by law, presents no undue risk to public health and safety, and is consistent with the common defense and security. Furthermore, approval of this request does not result in a significant decrease in the level of safety, presents special circumstances, does not present a significant decrease in safety as a result of a reduction in standardization, and meets the eligibility requirements for categorical exclusion.

9.0 Reference

1.) Westinghouse Electric Company, "AP1000 Design Control Document," Revision 19, June 2011.

Southern Nuclear Operating Company

ND-13-0494

Enclosure 3

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Licensing Basis Documents - Proposed Changes
(LAR-13-007)

Insertions are denoted by Blue Underline and Deletions by Red Strikethrough

(Note that the sheet numbers and the total number of sheets for the marked-up Tables provided in this Enclosure may be changed by the incorporation of this and other departures. These changes are considered editorial and do not require evaluation in this submittal.)

Tier 1, Table 2.6.2-1
(This change is also incorporated into VEGP Units 3 and 4 COLs, Appendix C)
[VEGP Unit 3 COL, Appendix C, pg. C-330]
[VEGP Unit 4 COL, Appendix C, pg. C-330]

Table 2.6.2-1
Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The functional arrangement of the EDS is as described in the Design Description of this Section 2.6.2.	Inspection of the as-built system will be performed.	The as-built EDS conforms with the functional arrangement as described in the Design Description of this Section 2.6.2.
2.a) Each EDS load group 1, 2, 3, and 4 battery charger supplies the corresponding dc switchboard bus load while maintaining the corresponding battery charged.	Testing of each as-built battery charger will be performed by applying a simulated or real load, or a combination of simulated or real loads.	Each battery charger provides an output current of at least **900** ~~550~~ amps with an output voltage in the range 105 to 140 V.
2.b) Each EDS load group 1, 2, 3, and 4 battery supplies the corresponding dc switchboard bus load for a period of 2 hours without recharging.	Testing of each as-built battery will be performed by applying a simulated or real load, or a combination of simulated or real loads. The test will be conducted on a battery that has been fully charged and has been connected to a battery charger maintained at 135 ± 1 V for a period of no less than 24 hours prior to the test.	The battery terminal voltage is greater than or equal to 105 V after a period of no less than 2 hours, with an equivalent load greater than **850** ~~500~~ amps.
2.c) Each EDS load group 1, 2, 3, and 4 inverter supplies the corresponding ac load.	Testing of each as-built inverter will be performed by applying a simulated or real load, or a combination of simulated or real loads, equivalent to a resistive load greater than **55** ~~35~~ **kW**.	Each inverter provides a line-to-line output voltage of 208 ± 2% V at a frequency of 60 ± 0.5% Hz.

Tier 1, Table 2.6.2-2

(This change is also incorporated into VEGP Units 3 and 4 COLs, Appendix C)
[VEGP Unit 3 COL, Appendix C, pg. C-331]
[VEGP Unit 4 COL, Appendix C, pg. C-331]

Table 2.6.2-2		
Component Name	**Tag No.**	**Component Location**
Load Group 1 Battery	EDS1-DB-1	Annex Building
Load Group 2 Battery	EDS2-DB-1	Annex Building
Load Group 3 Battery	EDS3-DB-1	Annex Building
Load Group 4 Battery	EDS4-DB-1	Annex Building
Load Group 1 Battery Charger	EDS1-DC-1	Annex Building
Load Group 2 Battery Charger	EDS2-DC-1	Annex Building
Load Group 3 Battery Charger	EDS3-DC-1	Annex Building
Load Group 4 Battery Charger	EDS4-DC-1	Annex Building
Load Group 1 125 Vdc Switchboard	EDS1-DS-1	Annex Building
~~Load Group 1 125 Vdc Switchboard~~	~~EDS1-DS-11~~	~~Annex Building~~
Load Group 2 125 Vdc Switchboard	EDS2-DS-1	Annex Building
~~Load Group 2 125 Vdc Switchboard~~	~~EDS2-DS-11~~	~~Annex Building~~
Load Group 3 125 Vdc Switchboard	EDS3-DS-1	Annex Building
~~Load Group 3 125 Vdc Switchboard~~	~~EDS3-DS-11~~	~~Annex Building~~
Load Group 4 125 Vdc Switchboard	EDS4-DS-1	Annex Building
~~Load Group 4 125 Vdc Switchboard~~	~~EDS4-DS-11~~	~~Annex Building~~
Load Group 1 Inverter	EDS1-DU-1	Annex Building
Load Group 2 Inverter	EDS2-DU-1	Annex Building
Load Group 3 Inverter	EDS3-DU-1	Annex Building
Load Group 4 Inverter	EDS4-DU-1	Annex Building

Tier 1, Table 2.6.3-1

(This change is also incorporated into VEGP Units 3 and 4 COLs, Appendix C)
[VEGP Unit 3 COL, Appendix C, pg. C-336]
[VEGP Unit 4 COL, Appendix C, pg. C-336]

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough)

Table 2.6.3-1 (cont.)

Equipment Name	Tag No.	Seismic Cat. I	Class 1E/ Qual. for Harsh Envir.	Safety-Related Display
Division D 120 Vac Distribution Panel 2	IDSD-EA-2	Yes	Yes/No	No
Division A Fuse Panel 4	IDSA-EA-4	Yes	Yes/No	No
Division B Fuse Panel 4	IDSB-EA-4	Yes	Yes/No	No
Division B Fuse Panel 5	IDSB-EA-5	Yes	Yes/No	No
Division B Fuse Panel 6	IDSB-EA-6	Yes	Yes/No	No
Division C Fuse Panel 4	IDSC-EA-4	Yes	Yes/No	No
Division C Fuse Panel 5	IDSC-EA-5	Yes	Yes/No	No
Division C Fuse Panel 6	IDSC-EA-6	Yes	Yes/No	No
Division D Fuse Panel 4	IDSD-EA-4	Yes	Yes/No	No
Division A Fused Transfer Switch Box 1	IDSA-DF-1	Yes	Yes/No	No
Division B Fused Transfer Switch Box 1	IDSB-DF-1	Yes	Yes/No	No
Division B Fused Transfer Switch Box 2	IDSB-DF-2	Yes	Yes/No	No
Division C Fused Transfer Switch Box 1	IDSC-DF-1	Yes	Yes/No	No
Division C Fused Transfer Switch Box 2	IDSC-DF-2	Yes	Yes/No	No
Division D Fused Transfer Switch Box 1	IDSD-DF-1	Yes	Yes/No	No
Spare Fused Transfer Switch Box 1	IDSS-DF-1	Yes	Yes/No	No
~~Spare Battery 125/250 Vdc Disconnect Switch~~	~~IDSS-SW-1~~	~~Yes~~	~~Yes/No~~	~~No~~
Division A 250 Vdc MCC	IDSA-DK-1	Yes	Yes/No	No
Division B 250 Vdc MCC	IDSB-DK-1	Yes	Yes/No	No
Division C 250 Vdc MCC	IDSC-DK-1	Yes	Yes/No	No
Division D 250 Vdc MCC	IDSD-DK-1	Yes	Yes/No	No
…	…	…	…	…

Tier 1, Table 2.6.3-1
(This change is also incorporated into VEGP Units 3 and 4 COLs, Appendix C)

[VEGP Unit 3 COL, Appendix C, pg. C-337]

[VEGP Unit 4 COL, Appendix C, pg. C-337]

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough)

Table 2.6.3-1 (cont.)

Equipment Name	Tag No.	Seismic Cat. I	Class 1E/ Qual. for Harsh Envir.	Safety-Related Display
Division C 250 Vdc Switchboard 1	IDSC-DS-1	Yes	Yes/No	Yes (Bus Voltage)
Division C 250 Vdc Switchboard 2	IDSC-DS-2	Yes	Yes/No	Yes (Bus Voltage)
Division D 250 Vdc Switchboard 1	IDSD-DS-1	Yes	Yes/No	Yes (Bus Voltage)
Division A Regulating Transformer	IDSA-DT-1	Yes	Yes/No	No
Division B Regulating Transformer	IDSB-DT-1	Yes	Yes/No	No
Division C Regulating Transformer	IDSC-DT-1	Yes	Yes/No	No
Division D Regulating Transformer	IDSD-DT-1	Yes	Yes/No	No
Division A 24-Hour Inverter 1	IDSA-DU-1	Yes	Yes/No	No
Division B 24-Hour Inverter 1	IDSB-DU-1	Yes	Yes/No	No
Division B 72-Hour Inverter 2	IDSB-DU-2	Yes	Yes/No	No
Division C 24-Hour Inverter 1	IDSC-DU-1	Yes	Yes/No	No
Division C 72-Hour Inverter 2	IDSC-DU-2	Yes	Yes/No	No
Division D 24-Hour Inverter 1	IDSD-DU-1	Yes	Yes/No	No
Spare Termination Box 2	IDSS-DF-2	Yes	Yes/No	No
Spare Termination Box 3	IDSS-DF-3	Yes	Yes/No	No
Spare Termination Box 4	IDSS-DF-4	Yes	Yes/No	No
Spare Termination Box 5	IDSS-DF-5	Yes	Yes/No	No
~~Spare Termination Box 6~~	~~IDSS-DF-6~~	~~Yes~~	~~Yes/No~~	~~No~~
…	…	…	…	…

Tier 1, Table 2.6.3-4
(This change is also incorporated into VEGP Units 3 and 4 COLs, Appendix C)
[VEGP Unit 3 COL, Appendix C, pg. C-345]
[VEGP Unit 4 COL, Appendix C, pg. C-345]

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 2.6.3-4 (cont.)

Component Name	Tag No.	Component Location
Division A Fuse Panel 4	IDSA-EA-4	Auxiliary Building
Division B Fuse Panel 4	IDSB-EA-4	Auxiliary Building
Division B Fuse Panel 5	IDSB-EA-5	Auxiliary Building
Division B Fuse Panel 6	IDSB-EA-6	Auxiliary Building
Division C Fuse Panel 4	IDSC-EA-4	Auxiliary Building
Division C Fuse Panel 5	IDSC-EA-5	Auxiliary Building
Division C Fuse Panel 6	IDSC-EA-6	Auxiliary Building
Division D Fuse Panel 4	IDSD-EA-4	Auxiliary Building
Division A Fused Transfer Switch Box 1	IDSA-DF-1	Auxiliary Building
Division B Fused Transfer Switch Box 1	IDSB-DF-1	Auxiliary Building
Division B Fused Transfer Switch Box 2	IDSB-DF-2	Auxiliary Building
Division C Fused Transfer Switch Box 1	IDSC-DF-1	Auxiliary Building
Division C Fused Transfer Switch Box 2	IDSC-DF-2	Auxiliary Building
Division D Fused Transfer Switch Box 1	IDSD-DF-1	Auxiliary Building
Spare Fused Transfer Switch Box 1	IDSS-DF-1	Auxiliary Building
~~Spare Battery 125/240 Vdc Disconnect Switch~~	~~IDSS-SW-1~~	~~Auxiliary Building~~
Division A 250 Vdc MCC	IDSA-DK-1	Auxiliary Building
Division B 250 Vdc MCC	IDSB-DK-1	Auxiliary Building
Division C 250 Vdc MCC	IDSC-DK-1	Auxiliary Building
Division D 250 Vdc MCC	IDSD-DK-1	Auxiliary Building
Division A 250 Vdc Switchboard 1	IDSA-DS-1	Auxiliary Building
Division B 250 Vdc Switchboard 1	IDSB-DS-1	Auxiliary Building
Division B 250 Vdc Switchboard 2	IDSB-DS-2	Auxiliary Building
Division C 250 Vdc Switchboard 1	IDSC-DS-1	Auxiliary Building
…	…	…

Tier 1, Table 2.6.3-4
(This change is also incorporated into VEGP Units 3 and 4 COLs, Appendix C)
[VEGP Unit 3 COL, Appendix C, pg. C-346]
[VEGP Unit 4 COL, Appendix C, pg. C-346]

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 2.6.3-4 (cont.)

Component Name	Tag No.	Component Location
Division D Regulating Transformer	IDSD-DT-1	Auxiliary Building
Division A 24-Hour Inverter 1	IDSA-DU-1	Auxiliary Building
Division B 24-Hour Inverter 1	IDSB-DU-1	Auxiliary Building
Division B 72-Hour Inverter 2	IDSB-DU-2	Auxiliary Building
Division C 24-Hour Inverter 1	IDSC-DU-1	Auxiliary Building
Division C 72-Hour Inverter 2	IDSC-DU-2	Auxiliary Building
Division D 24-Hour Inverter 1	IDSD-DU-1	Auxiliary Building
Spare Termination Box 2	IDSS-DF-2	Auxiliary Building
Spare Termination Box 3	IDSS-DF-3	Auxiliary Building
Spare Termination Box 4	IDSS-DF-4	Auxiliary Building
Spare Termination Box 5	IDSS-DF-5	Auxiliary Building
~~Spare Termination Box 6~~	~~IDSS-DF-6~~	~~Auxiliary Building~~
…	…	…

UFSAR Table 3.11-1 (Sheet 4 of 51)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 3.11-1 (Sheet 4 of 51)
Environmentally Qualified Electrical and Mechanical Equipment

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
IDSS Fused Transfer Switch Box 1 (Spare)	IDSS-DF-1	2	RT ESF PAMS	5 min 24 hr 72 hr	E
~~Spare Battery 125/250 Vdc Disconnect Switch~~	~~IDSS-SW-1~~	~~2~~	~~RT~~ ~~ESF~~ ~~PAMS~~	~~5 min~~ ~~24 hr~~ ~~72 hr~~	~~E~~
IDSS Spare Termination Box	IDSS-DF-2	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSS Spare Termination Box	IDSS-DF-3	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSS Spare Termination Box	IDSS-DF-4	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSS Spare Termination Box	IDSS-DF-5	2	RT ESF PAMS	5 min 24 hr 24 hr	E
~~IDSS Spare Termination Box~~	~~IDSS-DF-6~~	~~2~~	~~RT~~ ~~ESF~~ ~~PAMS~~	~~5 min~~ ~~24 hr~~ ~~24 hr~~	~~E~~
MOTOR CONTROL CENTERS					
IDSA 250 Vdc MCC	IDSA-DK-1	2	ESF	24 hr	E
IDSB 250 Vdc MCC	IDSB-DK-1	2	ESF	24 hr	E
IDSC 250 Vdc MCC	IDSC-DK-1	2	ESF	24 hr	E
IDSD 250 Vdc MCC	IDSD-DK-1	2	ESF	24 hr	E
SWITCHBOARDS					
IDSA 250 Vdc Switchboard 1 ...	IDSA-DS-1 ...	2 ...	RT ESF ...	5 min 24 hr ...	E ...

UFSAR Table 3I.6-2 (Sheet 3 of 28)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 3I.6-2 (Sheet 3 of 28)
List of Potential High Frequency Sensitive
AP1000 Safety-Related electrical and
Electro-mechanical Equipment

Description	AP1000 Tag Number
Transfer Switches	
IDSA Fused Transfer Switch Box 1	IDSA-DF-1
IDSB Fused Transfer Switch Box 1	IDSB-DF-1
IDSB Fused Transfer Switch Box 2	IDSB-DF-2
IDSC Fused Transfer Switch Box 1	IDSC-DF-1
IDSC Fused Transfer Switch Box 2	IDSC-DF-2
IDSD Fused Transfer Switch Box 1	IDSD-DF-1
IDSS Fused Transfer Switch Box 1	IDSS-DF-1
~~Spare Battery 125/250 Vdc Disconnect Switch~~	~~IDSS-SW-1~~
IDSS Spare Termination Box	IDSS-DF-2
IDSS Spare Termination Box	IDSS–DF-3
IDSS Spare Termination Box	IDSS-DF-4
IDSS Spare Termination Box	IDSS-DF-5
~~IDSS Spare Termination Box~~	~~IDSS-DF-6~~
Motor Control Centers	
IDSA 250 Vdc MCC	IDSA-DK-1
IDSB 250 Vdc MCC	IDSB-DK-1
IDSC 250 Vdc MCC	IDSC-DK-1
IDSD 250 Vdc MCC	IDSD-DK-1
Switchboards	
IDSA 250 Vdc Switchboard 1	IDSA-DS-1
IDSB 250 Vdc Switchboard 1	IDSB-DS-1
IDSB 250 Vdc Switchboard 2	IDSB-DS-2
IDSC 250 Vdc Switchboard 1	IDSC-DS-1
IDSC 250 Vdc Switchboard 2	IDSC-DS-2
…	…

UFSAR Subsection 8.1.2

8.1.2 Onsite Power System Description

The onsite power system is comprised of the main ac power system and the dc power system. The main ac power system is a non-Class 1E system. The dc power system consists of two independent systems: Class 1E dc system and non-Class 1E dc system. The ac and dc onsite power system configurations are shown on Figures 8.3.1-1 and 8.3.2-1, 8.3.2-2 and 8.3.2-3, respectively.

The normal ac power supply to the main ac power system is provided from the station main generator. When the main generator is not available, plant auxiliary power is provided from the switchyard by backfeeding through the main stepup and unit auxiliary transformers. This is the preferred power supply. When neither the normal or the preferred power supply is available due to an electrical fault at either the main stepup transformer, unit auxiliary transformer, isophase bus, or 6.9kv nonsegregated bus duct, fast bus transfer will be initiated to transfer the loads to the reserve auxiliary transformers powered by maintenance sources of power. In addition, two non-Class 1E onsite standby diesel generators supply power to selected loads in the event of loss of the normal, preferred, and maintenance power sources. The reserve auxiliary transformers also serve as a source of maintenance power. The maintenance sources are as described.

The main generator is connected to the offsite power system by three single-phase stepup transformers. The normal power source for the plant auxiliary ac loads comes from the generator bus through two unit auxiliary transformers of identical rating. In the event of a loss of the main generator, the power is maintained without interruption from the preferred power supply by an autotrip of the main generator breaker. Power then flows from the switchyard to the auxiliary loads through the main and unit auxiliary transformers.

A spare single-phase main stepup transformer is provided in the transformer area. The spare can be placed in service upon failure of one phase of the main stepup transformers.

The onsite standby power system, powered by the two onsite standby diesel generators, supplies power to selected loads in the event of loss of other ac power sources. Loads that are priority loads for investment protection due to their specific functions (permanent nonsafety loads) are selected for access to the onsite standby power supply. Availability of the standby power source is not required to accomplish any safety function.

The maintenance power supplies are provided at the medium voltage (6.9 kV) buses through normally open circuit breakers. Bus transfer to maintenance source either is automatic under fast bus transfer logic or may be initiated manually.

Four independent divisions of Class 1E 250 Vdc battery systems are provided for the Class 1E dc and UPS system. Divisions B and C have two battery banks; one battery bank is sized to supply power to safety-related loads for at least 24 hours and the other battery bank is sized to supply power to a second set of safety-related loads for at least 72 hours following a design basis event (including the loss of all ac power). Divisions A and D have one 24-hour battery bank. The loads are

assigned to each battery bank, depending on their required function, during the 72 hour coping period so that no manual or automatic load shedding is required for the first 24 hours. Two ancillary diesel generators are provided for power for Class 1E post-accident monitoring, MCR lighting, MCR and I&C room ventilation, and power to refill the PCS water storage tank and spent fuel pool if no other sources of ac power are available.

A single spare Class 1E battery bank **with a spare charger** is provided for ~~both~~ **the** Class 1E ~~and non-Class 1E~~ battery system~~s~~. ~~and a separate spare charger is provided for each of the systems~~. In order to preserve independence of each Class 1E dc system division, plug-in locking type disconnects are permanently installed to prevent connection of more than one battery bank to the spare. In addition, kirk-key interlock switches are provided to prevent transfer operation of more than one switchboard at a time. The spare battery bank is located in a separate room and is capable of supplying power to the required loads on any battery being temporarily replaced with the spare.

The non-Class 1E 125 Vdc power system provides continuous, reliable power to the plant nonsafety-related dc loads. Operation of the non-Class 1E dc system is not required to accomplish any safety function.

Uninterruptible power supplies (UPS) to the four independent divisions of the Class 1E 120 Vac instrument buses are included in the Class 1E dc system. The normal power to the uninterruptible power supply comes from the respective Class 1E 250 Vdc bus. The backup power comes from the main ac power system through Class 1E 480-208Y/120V voltage regulating transformers. The same configuration applies for the uninterruptible power to the non-divisional, non-Class 1E 120 Vac instrument buses. The normal power to the non-Class 1E uninterruptible power supply comes from the non-Class 1E 125 Vdc bus and the backup power comes from the main ac power system through a voltage regulating transformer.

UFSAR Subsection 8.3.2.1.2

8.3.2.1.2 Non-Class 1E DC and UPS System

The non-Class 1E dc and UPS system consists of the electric power supply and distribution equipment that provide dc and uninterruptible ac power to the plant non-Class 1E dc and ac loads that are critical for plant operation and investment protection and to the hydrogen igniters located inside containment. The non-class 1E dc and UPS system is comprised of two subsystems representing two separate power supply trains. The subsystems are located in separate rooms in the annex building. Figure 8.3.2-3, non-Class 1E dc and UPS system one line diagram represents the distribution configuration.

Each of the EDS1 and 3, and 2 and 4 subsystems consists of separate dc distribution buses. These two buses can be connected by a normally open circuit breaker to enhance the power supply source availability.

Each dc subsystem includes battery chargers, stationary batteries, dc distribution equipment, and associated monitoring and protection devices.

DC buses 1, 2, 3, and 4 (See Figure 8.3.2-3) provide 125 Vdc power to the associated inverter units that supply the ac power to the non-Class 1E uninterruptible power supply ac system. An alternate regulated ac power source for the UPS buses is supplied from the associated regulating transformers. DC bus 5 supplies large dc motors. This configuration isolates the large motors.

The onsite standby diesel generator backed 480 Vac distribution system provides the normal ac power to the battery chargers. Industry standard stationary batteries that are similar to the Class 1E design are provided to supply the dc power source in case the battery chargers fail to supply the dc distribution bus system loads. The batteries are sized to supply the system loads for a period of at least two hours after loss of all ac power sources.

The dc distribution switchboard houses the dc feeder protection device, dc bus ground fault detection, and appropriate metering. The component design and the current interrupting device selection follow the circuit coordination principles.

The non-Class 1E dc and UPS system is designed to meet the quality guidelines established by Generic Letter 85-06, "Quality Assurance Guidance for ATWS Equipment that is not Safety-Related."

A single spare battery bank with a spare battery charger is provided for the non-Class 1E dc and UPS system. In the case of a failure or unavailability of the normal battery bank and the battery charger, permanently installed cable connections allow the spare to be connected to the affected bus with kirk-key interlock switches. The kirk-key interlock switches permit connection of only one battery bank and battery charger at a time. The spare battery and the battery charger can also be utilized as a substitute when offline testing, maintenance, and equalization of an operational battery bank is desired. For EDS1 through EDS4, this is accomplished by opening the disconnect switch between two 125 Vdc battery cell strings, which together comprise the 250 Vdc spare battery.

~~Each of the EDS1 through 4 non-Class 1E dc distribution subsystem bus has provisions to allow the connection of a spare non-Class 1E battery charger should its non-Class 1E battery charger be unavailable due to maintenance, testing, or failure. EDS5 does not require this capability because the only load on the charger is the battery.~~

~~The non-Class 1E dc system uses the Class 1E spare battery bank (Figure 8.3.2-1) as a temporary replacement for any primary non-Class 1E battery bank. In this design configuration, the spare Class 1E battery bank would be connected to the non-Class 1E dc bus, but could not simultaneously supply Class 1E safety loads nor perform safety-related functions. For EDS1 through EDS4, this is accomplished by opening the disconnect switch between the two 125 Vdc battery cell strings, which together, comprise the 250 Vdc spare battery. Additionally, the design includes two current interrupting devices placed in series with the main feed from the spare battery that are fault-current activated. This will preserve the spare Class 1E battery integrity should the non-Class 1E bus experience an electrical fault. This arrangement will not degrade the electrical independence of the Class 1E safety circuits.~~

UFSAR Subsections 8.3.2.5.10 - 8.3.2.5.12

8.3.2.5.10 Non-Class 1E Battery Capacity Testing

Each load group 1, 2, 3, and 4 non-Class 1E battery is tested to verify the capability to provide **850** ~~500~~ A for two hours while maintaining the battery terminal voltage above the minimum voltage specified in Table 8.3.2-6. The **850** ~~500~~ A is sufficient to meet the loads described in Subsection 8.3.2.1.2. Each battery is connected to a charger maintained at 135±1 V for a period of at least 24 hours prior to the test to assure the battery is fully charged.

8.3.2.5.11 Non-Class 1E Inverter Capacity Testing

Each load group 1, 2, 3, and 4 non-Class 1E inverter is tested to verify the capability to provide **55** ~~35~~ kW while maintaining the output voltage and frequency within the tolerances specified in Table 8.3.2-6. The **55** ~~35~~ kW capacity is sufficient to meet the loads described in Subsection 8.3.2.1.2.

8.3.2.5.12 Non-Class 1E Charger Capacity Testing

Each load group 1, 2, 3, and 4 non-Class 1E charger is tested to verify the capability to provide **900** ~~550~~ A while maintaining the output voltage within the range specified in Table 8.3.2-6. The **900** ~~550~~ A is sufficient to meet the loads described in Subsection 8.3.2.1.2 while maintaining the corresponding battery charged.

UFSAR Table 8.3.1-1 (Sheet 3 of 5)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 8.3.1-1 (Sheet 3 of 5)
Onsite Standby Diesel Generator ZOS MG 02A Nominal Loads

Automatic Loads (Note 2)					
Item No.	Time Seq. (sec)	Event or Load Description	Rating (hp/kW)	Operating Load (kW) (Note 4)	
				At Power (Note 10)	Shutdown (Note 10)
35.	240	Normal Residual Heat Removal Pump A	250 hp	0	207
36.	240	RNS Pump Room Fan A	1.5 hp	0	1.5
37.	240	Annex Bldg Equipment Room Return/Exhaust Fan A (Note 12)	20 hp	17	17
38.	240	Annex Bldg Equipment Room AHU MS02A Fan (Note 12)	50 hp	42	42
39.	240	Annex Bldg Swgr Rm AHU MS 05A Fan (Note 12)	50 hp	42	42
40.	240	Annex Bldg Swgr Rm Ret/Exhaust Fan 06A (Note 12)	25 hp	21	21
41.	240	Instrument Air Compressor A	200 hp	166	166
42.	300	Non-1E Battery Charger EDS1-DC-1	195~~117~~ kVA	162.5 ~~88~~	162.5 ~~88~~
43.	300	Non 1E Battery Room A Exhaust Fan	0.5 hp	0.5	0.5
44.	300	Containment Recirculation Fan A	200 hp	149	149
45.	360	Containment Recirculation Fan D	200 hp	149	149
46.	360	Non-1E Battery Charger EDS3-DC-1	195 ~~117~~ kVA	162.5 ~~88~~	162.5 ~~88~~
47.	420	Div. A/C Class 1E Battery Room Exhaust Fan A	5 hp	5	5
		Total Automatically Sequenced Loads (kW)		2855 ~~2706~~	2398.5. ~~2249.5~~
…	…	…	…	…	…

UFSAR Table 8.3.1-1 (Sheet 4 of 5)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 8.3.1-1 (Sheet 4 of 5)
Onsite Standby Diesel Generator ZOS MG 02A Nominal Loads

Manual Loads (Note 2)				
Item No.	**Time Seq. (sec)**	**Event or Load Description**	**Rating (hp/kW)**	**Operating Load (kW)**
48.		Class 1E Div. A Battery Charger 1 (Note 13)	78 kVA	26
49.	--	Class 1E Div. C Battery Charger 1 (Note 13)	78 kVA	26
50.	--	Class 1E Div. C Battery Charger 2	78 kVA	15
51.	--	Supplemental Air Filtration System Fan A	15 hp	15
52.	--	Supplemental Air Filtration System Electric Heater A	20 kW	20
53.	--	Backup Group 4A Pressurizer Heaters	246 kW	246
54.	--	CRDM Fan 01A	75 hp	62
55.	--	CRDM Fan 01B	75 hp	62
56.	--	Spent Fuel Cooling Pump A	250 hp	200
57.	--	Make-Up Pump A	600 hp	498
58.	--	Non-1E Regulating XFMR EDS1-DT-1	100 ~~75~~ kVA	70 ~~25~~
59.	--	Non-1E Regulating XFMR EDS3-DT-1	100 ~~75~~ kVA	70 ~~25~~
60.	--	Main Control Room AHU Supply Fan A (Note 11)	40 hp	34
61.	--	Main Control Room AHU Return Fan A (Note 11)	25 hp	21
62.	--	Div A/C Class 1E Electrical Room AHU Supply Fan A (Note 11)	40 hp	34
....	...	...	...	...

UFSAR Table 8.3.1-1 (Sheet 5 of 5)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 8.3.1-1 (Sheet 5 of 5)
Onsite Standby Diesel Generator ZOS MG 02A Nominal Loads

Manual Loads (Note 2)				
Item No.	**Time Seq. (sec)**	**Event or Load Description**	**Rating (hp/kW)**	**Operating Load (kW)**
64.	--	Div B/D class 1E Electrical Room AHU Supply Fan D (Note 11)	25 hp	21
65.	--	Div B/D class 1E Electrical Room Return Fan D (Note 11)	25 hp	21
66.	--	Air Cooled Chiller Pump 2 (Note 11)	20 hp	17
67.	--	Air Cooled Chiller 2 (Note 11)	375 kW	375
68.	--	CVS Pump Room Fan A (Note 11)	1.5 hp	1.5
		Total Manually Sequenced Loads (kW)		1855.5 ~~1765.5~~
…	…	…	…	…

UFSAR Table 8.3.1-2 (Sheet 3 of 4)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 8.3.1-2 (Sheet 3 of 4)
Onsite Standby Diesel Generator ZOS MG 02B Nominal Loads

Automatic Loads (Note 2)					
Item No.	Time Seq. (sec)	Event or Load Description	Rating (hp/kW)	Operating Load (kW)	
				At Power (Note 10)	Shutdown (Note 10)
38.	180	Div A/C Class 1E Electrical Room AHU Supply Fan C	40 hp	34	34
39.	180	Div A/C Class 1E Electrical Room Return Fan C	25 hp	21	21
40.	180	Air Cooled Chiller Pump 3	20 hp	17	17
41.	200	Component Cooling Water Pump B	700 hp	500	500
42.	220	Air Cooled Chiller 3	375 kW	375	375
43.	240	CVS Pump Room Fan B	1.5 hp	1.5	1.5
44.	240	Instrument Air Compressor B	200 hp	166	166
45.	300	Normal Residual Heat Removal Pump B	250 hp	0	207
46.	300	RNS Pump Room Fan B	1.5 hp	0	1.5
47.	300	Non-1E Battery Charger EDS2-DC-1	195 ~~117~~ kVA	162.5 ~~88~~	162.5 ~~88~~
48.	300	Non-1E Battery Room B Exhaust Fan 09B	0.5 hp	0.5	0.5
49.	360	Containment Recirculation Fan B	200 hp	149	149
50.	360	Containment Recirculation Fan C	200 hp	149	149
51.	360	Non-1E Battery Charger EDS4-DC-1	195 ~~117~~ kVA	162.5 ~~88~~	162.5 ~~88~~
52.	420	Div. B/D Class 1E Battery Room Exhaust Fan B	1.5 hp	1.5	1.5
		Total Automatically Sequenced Loads (kW)		3275 ~~3126~~	2818.5 ~~2669.5~~
...	...	...	...	...	...

UFSAR Table 8.3.1-2 (Sheet 4 of 4)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 8.3.1-2 (Sheet 4 of 4)
Onsite Standby Diesel Generator ZOS MG 02B Nominal Loads

Manual Loads (Note 2)				
Item No.	**Time Seq. (sec)**	**Event or Load Description**	**Rating (hp/kW)**	**Operating Load (kW)**
54.	--	Class 1E Div. B Battery Charger 2	78 kVA	15
55.	--	Class 1E Div. D Battery Charger 1	78 kVA	26
56.	--	Supplemental Air Filtration System Fan B	15 hp	15
57.	--	Supplemental Air Filtration System Electric Heater B	20 kW	20
58.	--	Backup Group 4B Pressurizer Heaters	246 kW	246
59.	--	CRDM Fan 01C	75 hp	62
60.	--	CRDM Fan 01D	75 hp	62
61.	--	Spent Fuel Cooling Pump B	250 hp	200
62.	--	Make-Up Pump B	600 hp	498
63.	--	Non-1E Regulating XFMR EDS2-DT-1	100 ~~75~~ kVA	70 ~~25~~
64		Non-1E Regulating XFMR EDS4-DT-1	100 kVA	70
65 ~~64~~.	--	Annex Bldg Equipment Room Return/Exhaust Fan B	20 hp	17
66 ~~65~~.	--	Annex Bldg Equipment Room AHU MS02B Fan	50 hp	42
67 ~~66~~.	--	Annex Bldg Swgr Rm AHU MS 05B Fan	50 hp	42
68 ~~67~~.	--	Annex Bldg Swgr Rm Ret/Exhaust Fan 06B	25 hp	21
		Total Manually Sequenced Loads (kW)		1432 ~~1317~~
...	...	...	...	...

UFSAR Table 8.3.2-6 (Sheet 1 of 2)

Table 8.3.2-6 (Sheet 1 of 2)
Component Data - Non-Class 1E DC System EDS1 – EDS4
(Nominal Values)

a. Battery Bank 125 Vdc 60 lead calcium cells, **minimum 3500** ~~2400~~ Ah. (8 hrs to 1.75 V per cell @ 77°F).
b. Charger AC input - 480 V, 3-phase, 60 Hz; dc output - 125 Vdc, **1000** ~~600~~ A continuous; float voltage - 2.20 to 2.25 V/cell; equalizing charge voltage - 2.33 V/cell.
c. Switchgear Main bus **3000** ~~1200~~ A continuous, **4**~~5~~0,000 A short circuit bracing; breaker **3000**~~1000~~A frame size.
~~**d. Spare Charger**~~ ~~AC input - 480 V, 3-phase, 60 Hz; dc output - 125 Vdc, 600 A continuous; float voltage - 2.20 to 2.25 V/cell; equalizing charge voltage - 2.33 V/cell.~~
d.~~e~~. Uninterruptible Power Supply (UPS) i. Inverter **75** ~~50~~ kVA with 125 Vdc input and 208 Y/120 Vac, 3-phase, 4-wire, 60 Hz output; ac output voltage regulation of ±2% steady state; output frequency variation within 0.5% of nominal 60 Hz. ii. Voltage Regulating Transformer **100** ~~75~~ kVA, 480 V - 208 Y/120 V, 3-phase, 4-wire.

Note:

Refer to Figure 8.3.2-3 for the system component configuration

UFSAR 8.3.2-6 (Sheet 2 of 2)

Table 8.3.2-6 (Sheet 2 of 2)
Component Data - Non-Class 1E DC System EDS5
(Nominal Values)

a.	**Battery Bank** 250 Vdc (2 - 125 Vdc) 60 lead calcium cells, **minimum 3500** ~~2400~~ Ah. (8 hrs to 1.75 V per cell @ 77°F).
b.	**Charger** AC input - 480 V, 3-phase, 60 Hz; dc output - 250 Vdc, 200 A continuous; float voltage - 2.20 to 2.25 V/cell; equalizing charge voltage - 2.33 V/cell.
c.	**Switchgear** Main bus **3000** ~~600~~ A continuous, **4**~~5~~0,000 A short circuit bracing; breaker **3000**~~1200~~ A frame size.

Note:
Refer to Figure 8.3.2-3 for the system component configuration.

Table 8.3.2-6 (Sheet 3 of 3)
Component Data - Non-Class 1E DC System EDSS
(Nominal Values)

a.	**Spare Battery Bank** 250 Vdc (2 - 125 Vdc) 60 lead calcium cells, minimum 3500 Ah. (8 hrs to 1.75 V per cell @ 77°F).
b.	**Spare Charger -1** AC input - 480 V, 3-phase, 60 Hz; dc output - 125 Vdc, 1000 A continuous; float voltage - 2.20 to 2.25 V/cell; equalizing charge voltage - 2.33 V/cell.
c.	**Spare Charger - 2** AC input - 480 V, 3-phase, 60 Hz; dc output - 125 Vdc, 1000 A continuous, float voltage - 2.20 to 2.25 V/cell; equalizing charge voltage - 2.33 V/cell.

Note:

Refer to Figure 8.3.2-3 for the system component configuration

UFSAR Subsection 9A.3.2.1

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

9A.3.2.1 Fire Area 2000 AF 01

This fire area contains the main condenser, lubrication equipment auxiliary boiler, turbine-generator and auxiliaries, switchgear rooms, electrical equipment room, feedwater pumps, chemical feed equipment, chiller area, plant air compressors, digital-electrohydraulic skid, main steam piping, office area, and a sampling laboratory. The fire area is subdivided into the following fire zones:

Fire Zone	Room No.	
• 2030 AF 20300	20300	Elevation 100′-0″ (base slab) general floor area
• 2030 AF 20300	20305	Condensate polishing area reserve space
• 2030 AF 20300	20309	Circulating water pipe trench
• 2031 AF 21380	21380	CCS/BDS equipment room
• 2038 AF 20300	----	Main feedwater pump area
• 2039 AF 20301	20301	Chemical storage area
• 2040 AF 20400	20400	Elevation 117′-6″ general floor area
• 2040 AF 20400	20409	**VWS Chiller Area** ~~Condensate polishing area~~
• 2041 AF 21480	21480	VTS HVAC equipment room
• 2050 AF 20500	20500	Elevation 135′-3″ general floor area
• 2050 AF 20502	----	Digital-electrohydraulic skid
• **21**~~20~~51 AF **21** ~~20~~580	21580	**South bay elevation 135'-3″ general area** ~~Lower VFD equipment room~~
• **21**~~20~~51 AF **21583** ~~20581~~	**21583** ~~21581~~	~~Upper~~ VFD equipment room
• 2052 AF 20504	20510	HVAC equipment area
• 2053 AF 20506	20505	Office area at 149′ - 0″
• 2053 AF 20506	20506	Conference room
• 2053 AF 20507	20507	Women’s restroom
• 2053 AF 20508	20508	Men’s restroom
• 2057 AF 20503	20511	Generator seal oil unit
• 2060 AF 20600	20600	Elevation 161′-0″ general floor area

UFSAR 9A.3.2.15

9A.3.2.15 Fire Area 2151 ~~2141~~ AF 01

This turbine building fire area contains non-Class 1E batteries. This fire area contains one fire zone:

Fire Zone	Room No.	
2151 ~~2141~~ AF	21581	Battery room
21581 ~~21481~~	~~21481~~	

There are no systems in this fire area that normally contain radioactive material.

Fire Detection and Suppression Features

- Fire detectors
- Hose station(s)
- Portable fire extinguishers

Smoke Control Features

The south bay equipment HVAC subsystem of the turbine building ventilation system (VTS) servicing this fire area stops upon detection of smoke in the supply duct. Fire dampers close automatically on high temperature to isolate this fire area. These actions control the spread of fire and smoke. Other VTS subsystems continue to provide ventilation to the unaffected fire areas. After the fire, smoke is removed from this fire area by reopening the fire dampers and operating the ventilation system.

Fire Protection Adequacy Evaluation

A fire in this fire area is detected by a fire detector which produces an audible alarm locally, and both visual and audible alarms in the main control room and the security central alarm station. The fire is extinguished manually using hose streams or portable extinguishers.

Combustible materials in this fire area are listed in Table 9A-3, and they primarily consist of electrical cable insulation. The combustible materials are relatively uniformly distributed throughout the fire area. This is a light hazard fire area, and the rate of fire growth is expected to be slow. Minimum 2-hour fire barriers are provided.

The ventilation system does not contribute to the spread of the fire or smoke as described in the Smoke Control Features section above.

UFSAR 9A.3.2.16

9A.3.2.16 Fire Area 2151 ~~2142~~ AF 02 ~~01~~

This turbine building fire area contains non-Class 1E battery charging equipment. This fire area contains one fire zone:

Fire Zone	Room No.	
2151 ~~2142~~ AF 21582 ~~21482~~	21582 ~~21482~~	Battery charger room

There are no systems in this fire area that normally contain radioactive material.

Fire Detection and Suppression Features

- Fire detectors
- Hose station(s)
- Portable fire extinguishers

Smoke Control Features

The south bay equipment HVAC subsystem of the turbine building ventilation system (VTS) servicing this fire area stops upon detection of smoke in the supply duct. Fire dampers close automatically on high temperature to isolate this fire area. These actions control the spread of fire and smoke. Other VXS subsystems continue to provide ventilation to the unaffected fire areas. After the fire, smoke is removed from this fire area by reopening the fire dampers and operating the ventilation system in the smoke exhaust ventilation mode.

Fire Protection Adequacy Evaluation

A fire in this fire area is detected by a fire detector which produces an audible alarm locally, and both visual and audible alarms in the main control room and the security central alarm station. The fire is extinguished manually using hose streams or portable extinguishers.

Combustible materials in this fire area are listed in Table 9A-3, and they primarily consist of electrical cable insulation. The combustible materials are relatively uniformly distributed throughout the fire area. This is a light hazard fire area, and the rate of fire growth is expected to be slow. Minimum 2-hour fire barriers are provided.

The ventilation system does not contribute to the spread of the fire or smoke as described in the Smoke Control Features section above.

UFSAR Table 9A-3 (Sheet 13 of 24)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 9A-3 (Sheet 13 of 24)
Fire Protection Summary

Fire Area/Zone [1]	Safety Area?[2]	Floor Area Sq Ft	Combust. Material[3]	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res.[4] (Hours)	Detect. Cap.	Fixed Suppression Capability[5]
2053 AF 20506			CABLE INS	C	720	7.2E+06				SMOKE	HOSE STATION
OFFICES AT 149'-0"			PLASTIC	D	900	1.2E+07					
			TRASH	B	50	4.0E+05					
			CLOTH	B	720	5.7E+06					
			PAPER	C	14000	1.1E+08					
			WOOD	C	1800	1.5E+07					
		3634	NET CAT.	D	TOTAL:	1.5E+08	41400	39			
2057 AF 20503			CABLE INS	C	2000	2.0E+07				HEAT	WATER SPRAY
GENERATOR SEAL			LUBE OIL	E	400	6.0E+07					HOSE STATION
OIL UNIT			PLASTIC	D	300	4.0E+06					
			VOLATILES	E	55	7.5E+06					
			TRASH	B	200	1.5E+06					
		144	NET CAT.	E	TOTAL:	9.4E+07	651000	488			
2060 AF 20600			CABLE INS	C	1000	1.0E+07				HEAT	WET PIPE [7]
ELEVATION 161'-0"			LUBE OIL	E	250	3.8E+07					SPRINKLERS
GENERAL FLOOR AREA			PLASTIC	D	2500	3.3E+07					HOSE STATION
			VOLATILES	E	55	7.5E+06					
			TRASH	B	1000	7.7E+06					
		44042	NET CAT.	E	TOTAL:	9.6E+07	2200	2			
2063 AF 20601			CABLE INS	C	600	6.1E+06				SMOKE	HOSE STATION
TOOL ROOM/			PAPER	C	600	4.6E+06					
STORAGE AREA			PLASTIC	D	600	7.9E+06					
			RUBBER	D	100	1.2E+06					
			TRASH	B	50	3.9E+05					
		368	NET CAT.	D	TOTAL:	2.0E+07	55000	43			
2063 AF 20602			CABLE INS	C	250	2.6E+06				SMOKE	HOSE STATION
OFFICE AREA/ENGINEERING			PAPER	C	1200	9.2E+06					
WORKSTATION			PLASTIC	D	600	7.9E+06					
			RUBBER	D	100	1.2E+06					
			TRASH	B	50	3.9E+05					
		368	NET CAT.	D	TOTAL:	2.1E+07	58000	46			
2131 AF 21380			CABLE INS	C	3000	3.1E+07				HEAT	WET PIPE
CCW & BDS PUMP AREA			LUBE OIL	E	300	4.5E+07					SPRINKLER
			PLASTIC	D	150	2.0E+06					HOSE STATION
			VOLATILES	E	55	7.5E+06					
			TRASH	B	200	1.5E+06					
		2880	NET CAT.	E	TOTAL:	8.7E+07	30320	23			
2141 AF 21480			CABLE INS	C	150	3.1E+06				SMOKE	HOSE STATION
SOUTH BAY 117'-6" VTS			PAPER	C	250	3.9E+06					
HVAC EQUIPMENT ROOM			PLASTIC	D	125	3.3E+06					
			RUBBER	D	13	3.1E+05					
			TRASH	B	13	2.0E+05					
		2123	NET CAT.	D	TOTAL:	1.1E+07	5182	5			
2151 AF 21580			CABLE INS	C	150	1.56E+06				SMOKE	HOSE STATION
SOUTH BAY 135'-3"			PLASTIC	D	250	3.3E+06					
GENERAL AREA ~~LOWER~~		3337	TRASH	B	25	1.92.0E+05					
~~VFD EQUIPMENT ROOM~~		~~2880~~	NET CAT.	D	TOTAL:	5.01E+06	1500~~170~~	1 ~~2~~			
...	...	...	...	...	...	...	...	...	...	...	...

UFSAR Table 9A-3 (Sheet 14 of 24)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 9A-3 (Sheet 14 of 24)
Fire Protection Summary

Fire Area/Zone (1)	Safety Area?(2)	Floor Area Sq Ft	Combust. Material(3)	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res.(4) (Hours)	Detect. Cap.	Fixed Suppression Capability(5)
2151 AF 21583 ~~21581~~ SOUTH BAY 148'-10" ~~147'-6"~~ ~~UPPER~~ VFD EQUIPMENT ROOM		 4133 ~~2880~~	CABLE INS PLASTIC TRASH NET CAT.	C D B D	150 250 25 TOTAL:	1.6E+06 3.3E+06 2.0E+05 5.1E+06	 1000 ~~1770~~	 12		SMOKE	HOSE STATION
FIRE AREA TOTAL:		186,240	NET CAT.	E	TOTAL:	5.8E+09	31,140	23			
2000 AF 02	NO								2	NONE	NONE
STAIRWELL S02			NEGLIGIBLE								
2009 AF 01	NO								2	NONE	NONE
STAIRWELL S01			NEGLIGIBLE								
2000 AF 03	NO								2	NONE	NONE
STAIRWELL S03			NEGLIGIBLE								
2009 AF 02	NO								2	SMOKE	HOSE STATION
ELEVATOR			CABLE INS LUBRICANT	C E	300 5	3.1E+06 9.9E+04					
FIRE AREA TOTAL:		88	NET CAT.	E	TOTAL:	3.2E+06	36000	27			
2033 AF 02	NO								3/0	SMOKE	HOSE STATION
FPS MOTOR DRIVEN PUMP ROOM			CABLE INS LUBE OIL PLASTIC TRASH VOLATILES	C E D B E	1000 25 100 75 10	1.0E+07 3.8E+06 1.3E+06 5.8E+05 1.4E+06					
FIRE AREA TOTAL:		672	NET CAT.	E	TOTAL:	1.7E+07	26000	33			
2040 AF 01	NO								3	HEAT	WET PIPE SPRINKLER HOSE STATION
CLEAN & DIRTY LUBE OIL STORAGE ROOM			CABLE INS LUBE OIL TRASH	C E B	1000 29000 100	1.0E+07 4.4E+09 7.7E+05					
FIRE AREA TOTAL:		791	NET CAT.	E	TOTAL:	4.4E+09	5550000	4163			
2043 AF 01	NO								3/0	HEAT	WET PIPE SPRINKLER HOSE STATION
...	...	...	...	...	...	...	...	...	...	...	...

UFSAR Table 9A-3 (Sheet 15 of 24)

Revise selected table entries as follows (Insertions are blue underline, deletions are red strikethrough):

Table 9A-3 (Sheet 15 of 24)
Fire Protection Summary

Fire Area/Zone [1]	Safety Area?[2]	Floor Area Sq Ft	Combust. Material[3]	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res.[4] (Hours)	Detect. Cap.	Fixed Suppression Capability[5]
2050 AF 01	NO								3	HEAT	WATER SPRAY HOSE STATION
LUBE OIL RESERVOIR ROOM			CABLE INS LUBE OIL PLASTIC TRASH VOLATILES	C E D B E	500 17000 100 500 100	5.1E+06 2.6E+09 1.3E+06 3.9E+06 1.4E+07					
FIRE AREA TOTAL:		1169	NET CAT.	E	TOTAL:	2.6E+09	2216000	1662			
2052 AF 01	NO								2/0	SMOKE	HOSE STATION
TURBINE BUILDING SWITCHGEAR ROOM #1			CABLE INS PLASTIC TRASH VOLATILES	C D B E	11000 600 100 5	1.1E+08 7.9E+06 7.7E+05 6.8E+05					
FIRE AREA TOTAL:		1854	NET CAT.	C	TOTAL:	1.2E+08	66000	55			
2053 AF 01	NO								2/0	SMOKE	HOSE STATION
ELECTRICAL EQUIPMENT ROOM			CABLE INS LUBE OIL PLASTIC TRASH VOLATILES	C E D B E	700 10 1300 100 5	7.1E+06 1.5E+06 1.7E+07 7.7E+05 6.8E+05					
FIRE AREA TOTAL:		1722	NET CAT.	D	TOTAL:	2.7E+07	16000	11			
2053 AF 02	NO								2/0	SMOKE	HOSE STATION
TURBINE BUILDING SWITCHGEAR ROOM #2			CABLE INS PLASTIC TRASH VOLATILES	C D B E	11000 600 100 5	1.1E+08 7.9E+06 7.7E+05 6.8E+05					
FIRE AREA TOTAL:		2039	NET CAT.	C	TOTAL:	1.2E+08	60000	49			
2151 ~~2141~~ AF 01	NO								2	SMOKE	HOSE STATION
21451 AF 214~~-~~581 BATTERY ROOM			BATTERIES CABLE INS	A C	240 ~~120~~ 2000~~1000~~	4.8E+07 ~~2.4E+07~~ 2.0E+07 ~~1.0E+07~~					
FIRE AREA TOTAL:		1216 ~~529~~	NET CAT.	C	TOTAL:	6.8E+07 ~~3.4E+07~~	56000 ~~64000~~	44 ~~56~~			
2151 ~~2142~~ AF 02 ~~01~~	NO								2	SMOKE	HOSE STATION
2151 ~~2142~~ AF 21582 ~~21482~~ BATTERY CHARGER ROOM			CABLE INS PAPER PLASTIC	C C D	1550 ~~1000~~ 310 ~~200~~ 388 ~~250~~	1.6E+07 ~~1.0E+07~~ 2.4E+06 ~~1.5E+06~~ 5.1E+06 ~~3.3E+06~~					
FIRE AREA TOTAL:		396 ~~228~~	NET CAT.	C	TOTAL:	2.3E+07 ~~1.5E+07~~	59000 ~~66000~~	47 ~~60~~			
4001 AF 01	NO								2	NONE	NONE
.....	...	...	...	...	...	...	...	...	...	...	...

UFSAR Subsection 14.2.9.2.16

14.2.9.2.16 Non-Class 1E dc and Uninterruptible Power Supply System Testing

Purpose

The purpose of the non-Class 1E dc and uninterruptible power supply system testing is to verify the ability to provide continuous, reliable power for the non-Class 1E control and instrumentation defense-in-depth loads.

Prerequisites

The construction tests for the individual components associated with the non-Class 1E dc and uninterruptible power supply system have been completed. Permanently installed and test instrumentation are properly calibrated and operational. The 480 V ac system is in operation to supply power to the battery chargers. Additionally, a test load is available for the performance of battery capacity tests.

General Test Methods and Acceptance Criteria

The non-Class 1E dc and uninterruptible power supply system consists of electrical equipment including batteries, battery chargers, inverters, static transfer switches, and associated instrumentation and alarms that is used to supply power for the non-Class 1E control and instrumentation loads. Performance is observed and recorded during a series of individual component and integrated system tests. These tests verify that the non-Class 1E dc and uninterruptible power supply system operates as specified in Subsection 8.3.2 and appropriate design specifications:

a) The capability of each ~~of the three~~ non-Class 1E batter**y** ~~ies~~ serving defense-in-depth loads is verified to meet or exceed the required ampere-hour rating by a battery performance test in accordance with IEEE 450. Following this discharge, the voltage of each cell is verified to be greater than or equal to the specified minimum cell voltage.

b) The capability of each ~~of the three~~ charger~~s~~ serving defense-in-depth loads to meet the rating specified by Table 8.3.2-6 is verified. This testing includes a verification that the charger output voltage is within design limits.

c) The capability of each inverter to meet the rating specified by Table 8.3.2-6 is verified. This testing includes a verification that the output frequency and voltage to be within the limits specified in Table 8.3.2-6.

d) The proper operation and calibration of instrumentation and alarms, electrical ground detection, and permissive and prohibitive interlocks is verified.

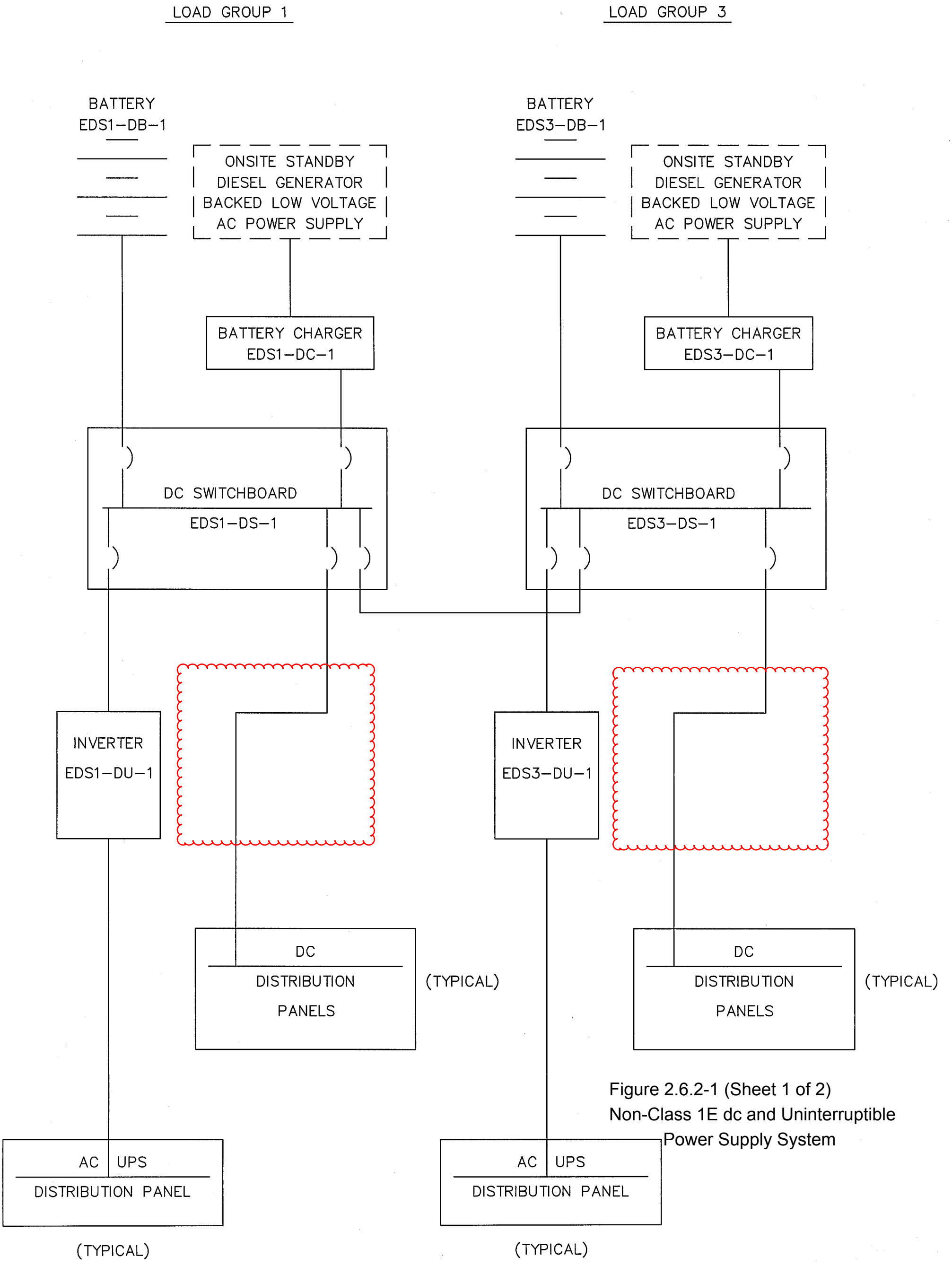


Figure 2.6.2-1 (Sheet 1 of 2)
Non-Class 1E dc and Uninterruptible
Power Supply System

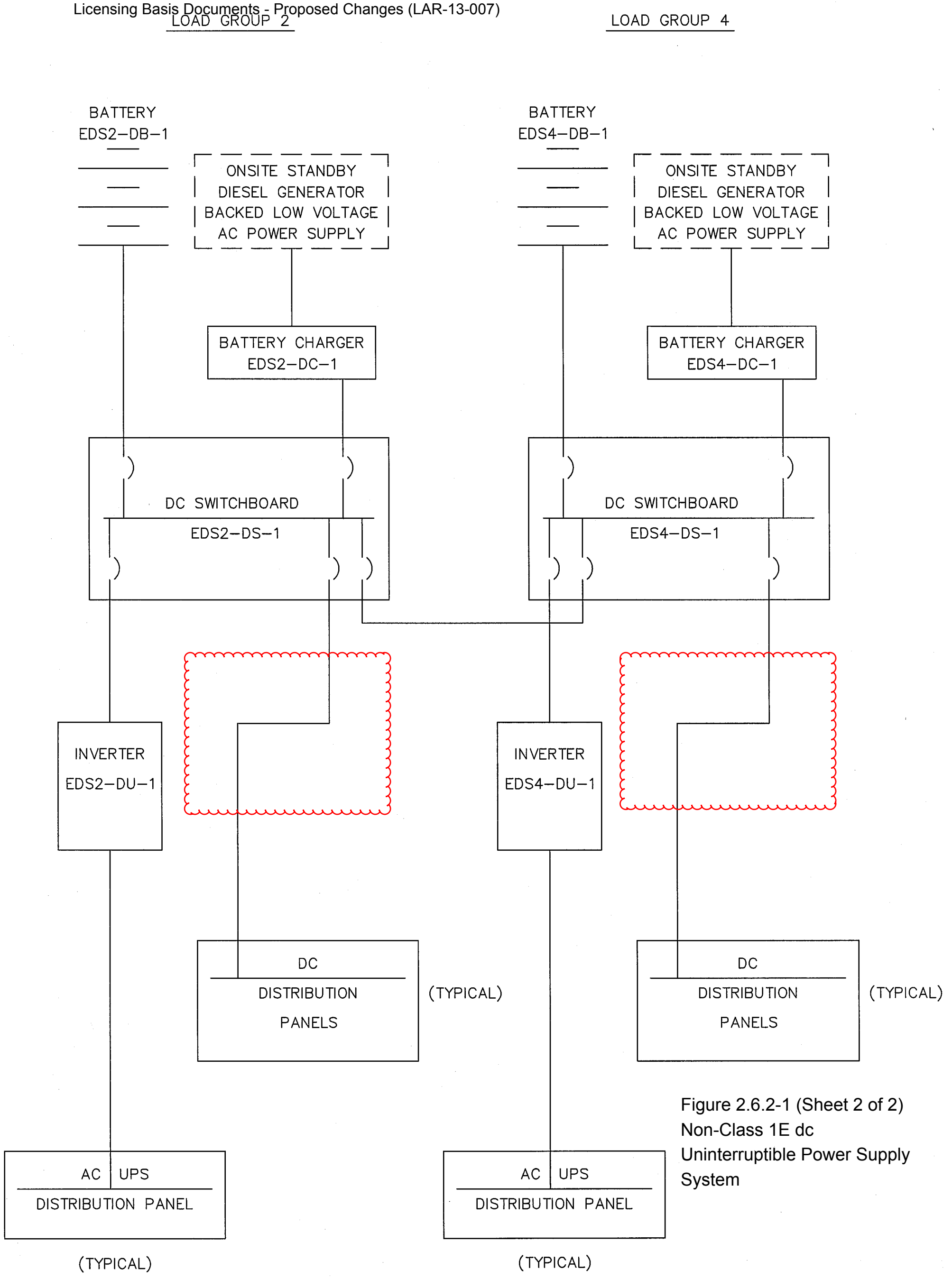
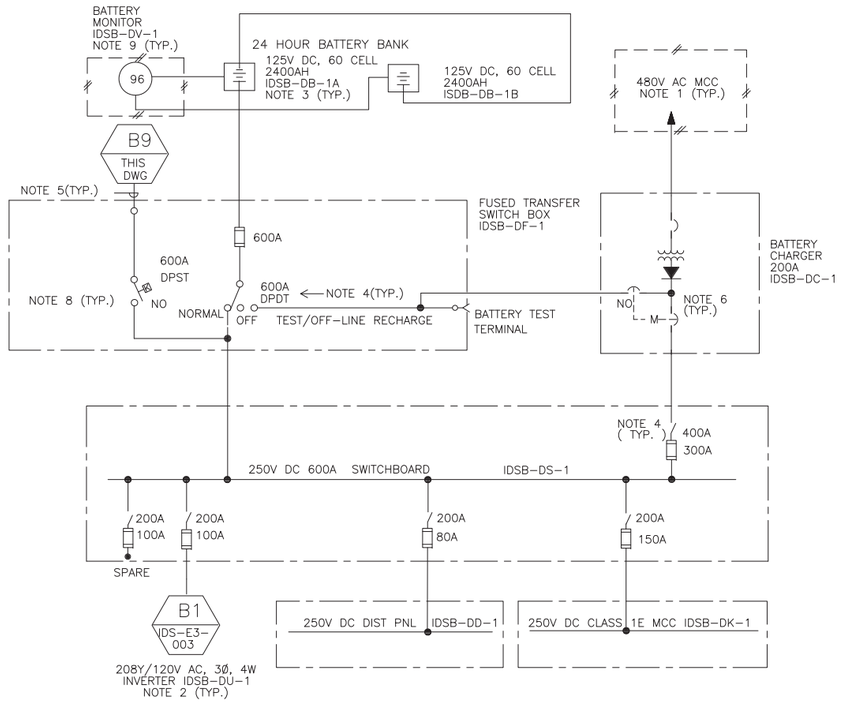
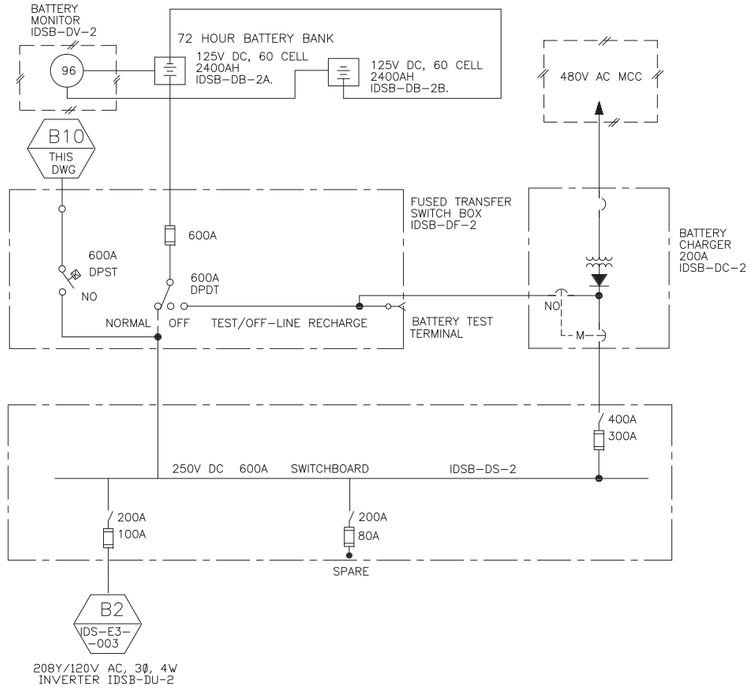


Figure 2.6.2-1 (Sheet 2 of 2)
Non-Class 1E dc
Uninterruptible Power Supply
System



24 HOUR BATTERY BANK (DIVISION B)



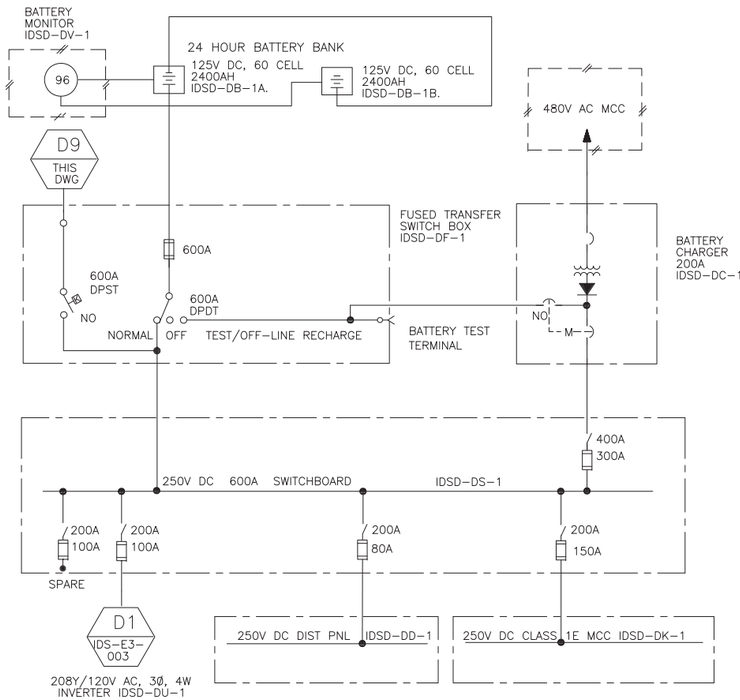
72 HOUR BATTERY BANK (DIVISION B)

NOTES

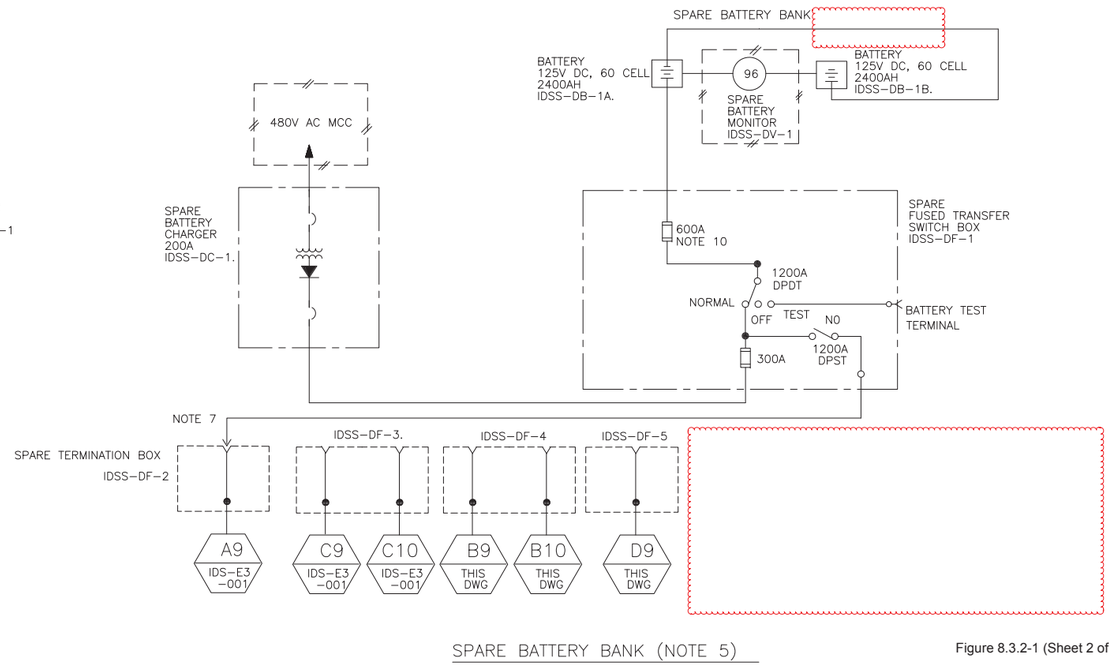
1. 480V AC INPUT POWER TO BATTERY CHARGERS IS PROVIDED FROM ONSITE STANDBY DIESEL GENERATOR BACKED MCC.
2. SEE DWG. NO. IDS-E3-003 FOR UPS CONFIGURATION.
3. BATTERY AMPERE-HOUR RATING IS BASED ON 8 HOURS DISCHARGE RATE.
4. ALL FUSIBLE DISCONNECT SWITCHES ARE RATED FOR 50 KA SHORT CIRCUIT RATING. THE 600A SWITCH RATING IS CAPABLE OF CARRYING 1200A FOR UP TO 2 HOURS WITH THE EXCEPTION OF THOSE ASSOCIATED WITH THE SPARE DIVISION WHICH ARE 1200A RATING, CAPABLE OF CARRYING 2400A FOR UP TO 2 HOURS.
5. SPARE CLASS 1E BATTERY BANK WITH SPARE CLASS 1E BATTERY CHARGER IS UTILIZED FOR CLASS 1E DC SYSTEM AS A TEMPORARY REPLACEMENT FOR ANY 24 HR OR 72 HR BATTERY BANK ONE AT A TIME.
6. MECHANICALLY INTERLOCKED. ONLY ONE BREAKER CAN BE CLOSED AT A TIME.
7. PLUG-IN LOCKING TYPE DISCONNECT IS PROVIDED TO CONNECT TO THE SPARE TERMINATION BOX, IDSS-DF-2 (IDSS-DF-3,4 OR 5).
8. KIRK-KEY INTERLOCK SWITCH IS PROVIDED TO PREVENT TRANSFER OPERATION OF MORE THAN ONE SWITCHBOARD AT A TIME.
9. FOR LEGEND AND ABBREVIATION, SEE DWGS GW-E9-001, -002 AND -003.
10. INCOMING FUSE TO SPARE FUSED TRANSFER SWITCH BOX (600A) IS REPLACED WITH A 1200A FUSE WHEN THE SAME BATTERY IS USED IN SUPPORT OF EDS1, 2, 3 OR 4.

REFERENCE DRAWINGS

TITLE	DWG. NO.
AC POWER SYSTEM – STATION ONE LINE DIAGRAMS	FIG 8.3.1-1
CLASS 1E DC SYSTEM – STATION ONE LINE DIAGRAM DIV. A & C	FIG 8.3.2-1 (SHT 1)
CLASS 1E UPS SYSTEM– STATION ONE LINE DIAGRAM DIV A,B,C & D	FIG 8.3.2-2
CLASS 1E DC SYSTEM ONE LINE METER & RELAY DIAGRAMS	IDS-E3-004 THRU 010

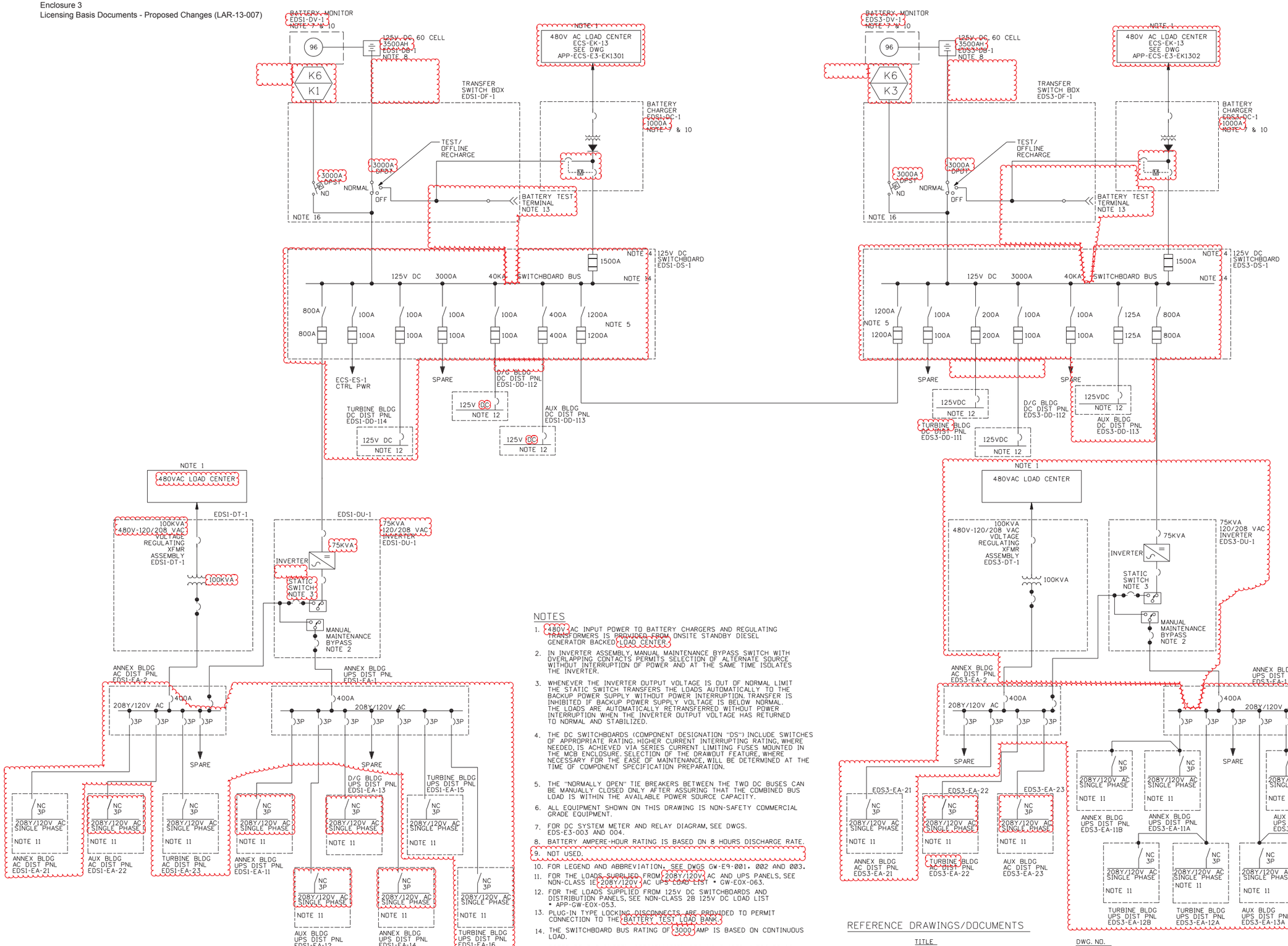


24 HOUR BATTERY BANK (DIVISION D)



SPARE BATTERY BANK (NOTE 5)

Figure 8.3.2-1 (Sheet 2 of 2) Class 1E DC System One Line Diagram



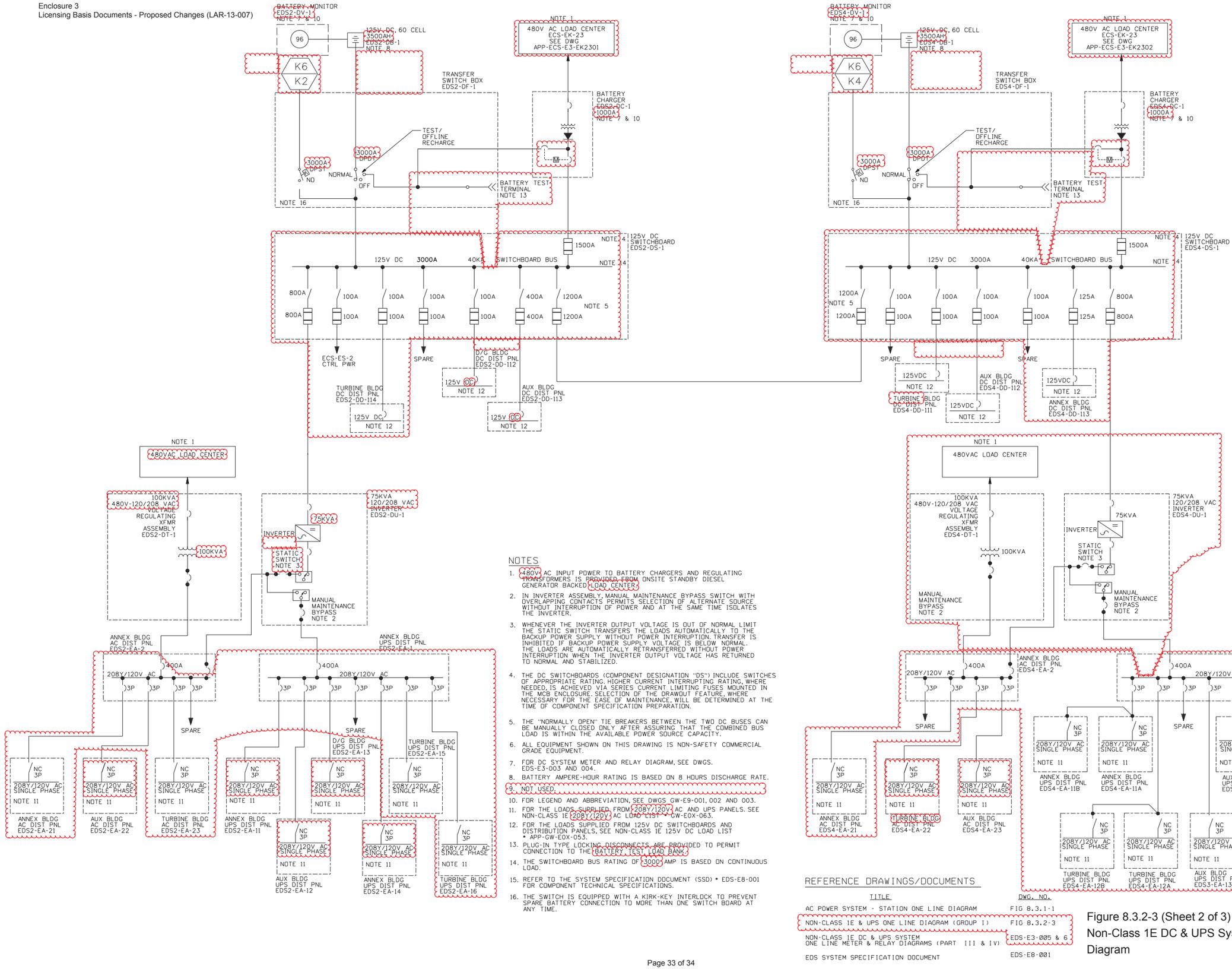
NOTES

1. 480V AC INPUT POWER TO BATTERY CHARGERS AND REGULATING TRANSFORMERS IS PROVIDED FROM ONSITE STANDBY DIESEL GENERATOR BACKED LOAD CENTER.
2. IN INVERTER ASSEMBLY, MANUAL MAINTENANCE BYPASS SWITCH WITH OVERLAPPING CONTACTS PERMITS SELECTION OF ALTERNATE SOURCE WITHOUT INTERRUPTION OF POWER AND AT THE SAME TIME ISOLATES THE INVERTER.
3. WHENEVER THE INVERTER OUTPUT VOLTAGE IS OUT OF NORMAL LIMIT THE STATIC SWITCH TRANSFERS THE LOADS AUTOMATICALLY TO THE BACKUP POWER SUPPLY WITHOUT POWER INTERRUPTION. TRANSFER IS INHIBITED IF BACKUP POWER SUPPLY VOLTAGE IS BELOW NORMAL. THE LOADS ARE AUTOMATICALLY RETRANSFERRED WITHOUT POWER INTERRUPTION WHEN THE INVERTER OUTPUT VOLTAGE HAS RETURNED TO NORMAL AND STABILIZED.
4. THE DC SWITCHBOARDS (COMPONENT DESIGNATION "DS") INCLUDE SWITCHES OF APPROPRIATE RATING. HIGHER CURRENT INTERRUPTING RATING, WHERE NEEDED, IS ACHIEVED VIA SERIES CURRENT LIMITING FUSES MOUNTED IN THE MCB ENCLOSURE. SELECTION OF THE DRAWOUT FEATURE, WHERE NECESSARY FOR THE EASE OF MAINTENANCE, WILL BE DETERMINED AT THE TIME OF COMPONENT SPECIFICATION PREPARATION.
5. THE "NORMALLY OPEN" TIE BREAKERS BETWEEN THE TWO DC BUSES CAN BE MANUALLY CLOSED ONLY AFTER ASSURING THAT THE COMBINED BUS LOAD IS WITHIN THE AVAILABLE POWER SOURCE CAPACITY.
6. ALL EQUIPMENT SHOWN ON THIS DRAWING IS NON-SAFETY COMMERCIAL GRADE EQUIPMENT.
7. FOR DC SYSTEM METER AND RELAY DIAGRAM, SEE DWGS. EDS-E3-003 AND 004.
8. BATTERY AMPERE-HOUR RATING IS BASED ON 8 HOURS DISCHARGE RATE.
9. NOT USED.
10. FOR LEGEND AND ABBREVIATION, SEE DWGS GW-E9-001, 002 AND 003.
11. FOR THE LOADS SUPPLIED FROM 208Y/120V AC AND UPS PANELS, SEE NON-CLASS 1E 208Y/120V AC UPS LOAD LIST • GW-E0X-063.
12. FOR THE LOADS SUPPLIED FROM 125V DC SWITCHBOARDS AND DISTRIBUTION PANELS, SEE NON-CLASS 2B 125V DC LOAD LIST • APP-GW-E0X-053.
13. PLUG-IN TYPE LOCKING DISCONNECTS ARE PROVIDED TO PERMIT CONNECTION TO THE BATTERY TEST LOAD BANK.
14. THE SWITCHBOARD BUS RATING OF 3000 AMP IS BASED ON CONTINUOUS LOAD.
15. REFER TO THE SYSTEM SPECIFICATION DOCUMENT (SSD) • EDS-E8-001 FOR COMPONENT TECHNICAL SPECIFICATIONS.
16. THE SWITCH IS EQUIPPED WITH A KIRK-KEY INTERLOCK TO PREVENT SPARE BATTERY CONNECTION TO MORE THAN ONE SWITCH BOARD AT ANY TIME.

REFERENCE DRAWINGS/DOCUMENTS

TITLE	DWG. NO.
AC POWER SYSTEM - STATION ONE LINE DIAGRAM	FIG. 8.3.1-1
NON-CLASS 1E DC & UPS LINE DIAGRAM (GROUP II)	FIG 8.3.2-3
NON-CLASS 1E DC & UPS SYSTEM ONE LINE METER & RELAY DIAGRAMS (PART I & II)	EDS-E3-003 & 4
EDS SYSTEM SPECIFICATION DOCUMENT	EDS-E8-001

Figure 8.3.2-3 (Sheet 1 of 3)
Non-Class 1E DC & UPS System One Line Diagram



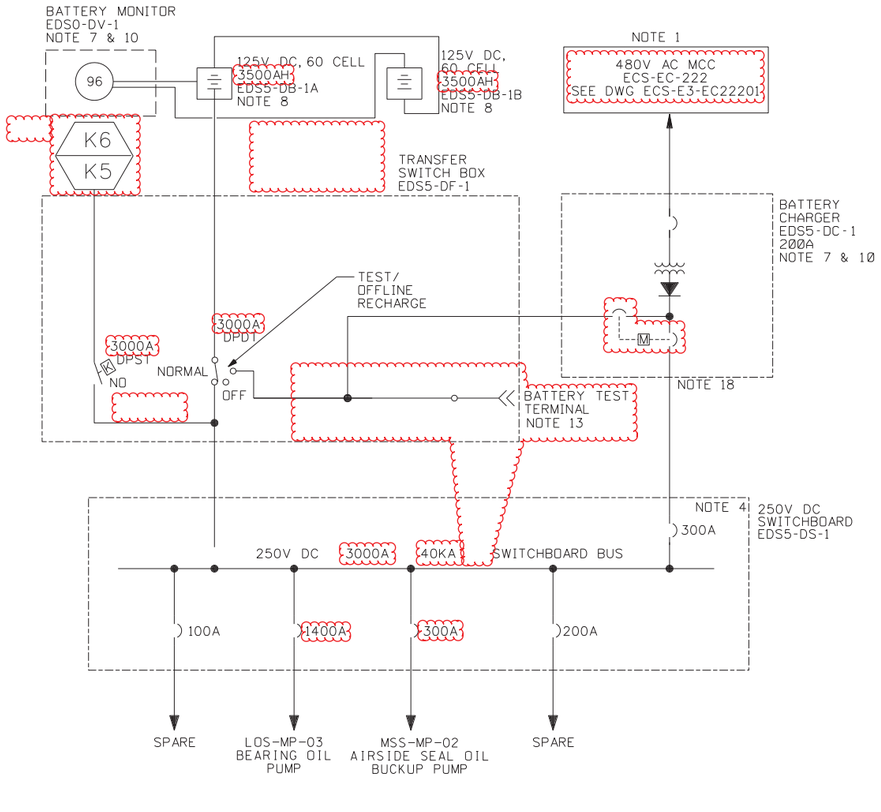
NOTES

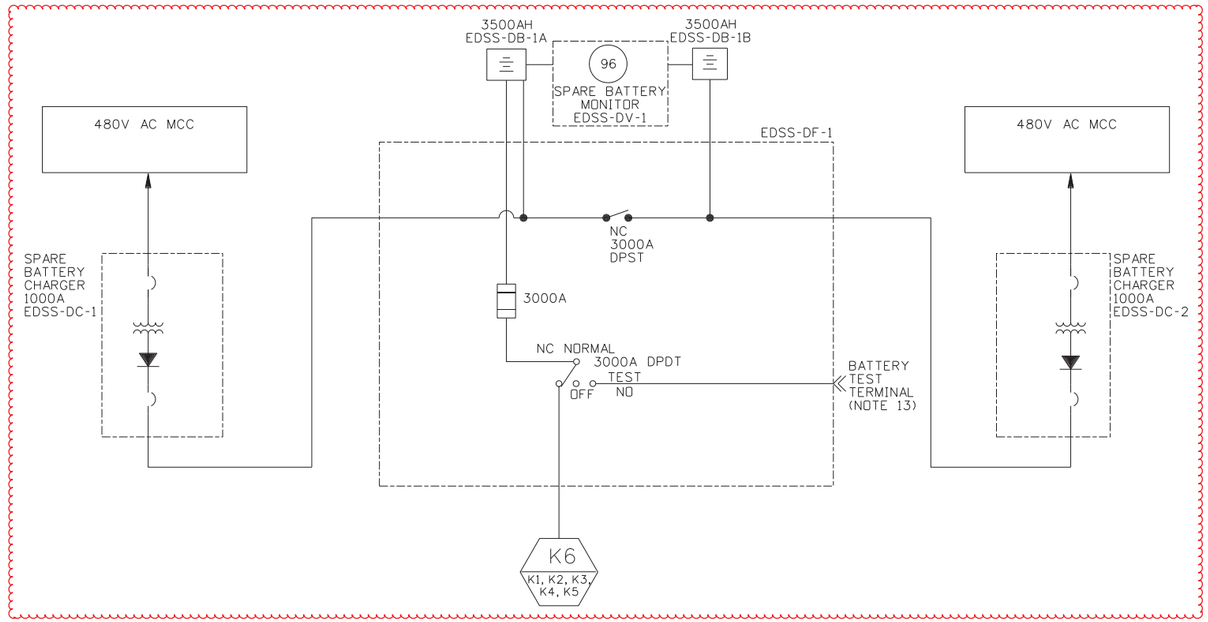
1. 480V AC INPUT POWER TO BATTERY CHARGERS AND REGULATING TRANSFORMERS IS PROVIDED FROM ONSITE STANDBY DIESEL GENERATOR BACKED LOAD CENTERS.
2. IN INVERTER ASSEMBLY, MANUAL MAINTENANCE BYPASS SWITCH WITH OVERLAPPING CONTACTS PERMITS SELECTION OF ALTERNATE SOURCE WITHOUT INTERRUPTION OF POWER AND AT THE SAME TIME ISOLATES THE INVERTER.
3. WHENEVER THE INVERTER OUTPUT VOLTAGE IS OUT OF NORMAL LIMIT THE STATIC SWITCH TRANSFERS THE LOADS AUTOMATICALLY TO THE BACKUP POWER SUPPLY WITHOUT POWER INTERRUPTION. TRANSFER IS INHIBITED IF BACKUP POWER SUPPLY VOLTAGE IS BELOW NORMAL. THE LOADS ARE AUTOMATICALLY RETRANSFERRED WITHOUT POWER INTERRUPTION WHEN THE INVERTER OUTPUT VOLTAGE HAS RETURNED TO NORMAL AND STABILIZED.
4. THE DC SWITCHBOARDS (COMPONENT DESIGNATION "DS") INCLUDE SWITCHES OF APPROPRIATE RATING. HIGHER CURRENT INTERRUPTING RATING, WHERE NEEDED, IS ACHIEVED VIA SERIES CURRENT LIMITING FUSES MOUNTED IN THE MCB ENCLOSURE. SELECTION OF THE DRAWOUT FEATURE, WHERE NECESSARY FOR THE EASE OF MAINTENANCE, WILL BE DETERMINED AT THE TIME OF COMPONENT SPECIFICATION PREPARATION.
5. THE "NORMALLY OPEN" TIE BREAKERS BETWEEN THE TWO DC BUSES CAN BE MANUALLY CLOSED ONLY AFTER ASSURING THAT THE COMBINED BUS LOAD IS WITHIN THE AVAILABLE POWER SOURCE CAPACITY.
6. ALL EQUIPMENT SHOWN ON THIS DRAWING IS NON-SAFETY COMMERCIAL GRADE EQUIPMENT.
7. FOR DC SYSTEM METER AND RELAY DIAGRAM, SEE DWGS. EDS-E3-003 AND 004.
8. BATTERY AMPERE-HOUR RATING IS BASED ON 8 HOURS DISCHARGE RATE.
9. NOT USED.
10. FOR LEGEND AND ABBREVIATION, SEE DWGS GW-E9-001, 002 AND 003.
11. FOR THE LOADS SUPPLIED FROM 208Y/120V AC AND UPS PANELS. SEE NON-CLASS 1E 208Y/120V AC LOAD LIST • GW-EOX-063.
12. FOR THE LOADS SUPPLIED FROM 125V DC SWITCHBOARDS AND DISTRIBUTION PANELS, SEE NON-CLASS 1E 125V DC LOAD LIST • APP-GW-EOX-053.
13. PLUG-IN TYPE LOCKING DISCONNECTS ARE PROVIDED TO PERMIT CONNECTION TO THE BATTERY TEST LOAD BANK.
14. THE SWITCHBOARD BUS RATING OF 3000 AMP IS BASED ON CONTINUOUS LOAD.
15. REFER TO THE SYSTEM SPECIFICATION DOCUMENT (SSD) • EDS-E8-001 FOR COMPONENT TECHNICAL SPECIFICATIONS.
16. THE SWITCH IS EQUIPPED WITH A KIRK-KEY INTERLOCK TO PREVENT SPARE BATTERY CONNECTION TO MORE THAN ONE SWITCH BOARD AT ANY TIME.

REFERENCE DRAWINGS/DOCUMENTS

TITLE	DWG. NO.
AC POWER SYSTEM - STATION ONE LINE DIAGRAM	FIG 8.3.1-1
NON-CLASS 1E & UPS ONE LINE DIAGRAM (GROUP I)	FIG 8.3.2-3
NON-CLASS 1E DC & UPS SYSTEM ONE LINE METER & RELAY DIAGRAMS (PART III & IV)	EDS-E3-005 & 6
EDS SYSTEM SPECIFICATION DOCUMENT	EDS-E8-001

Figure 8.3.2-3 (Sheet 2 of 3)
Non-Class 1E DC & UPS System One Line Diagram





NOTES

1. 480V AC INPUT POWER TO BATTERY CHARGERS IS PROVIDED FROM ONSITE STANDBY DIESEL GENERATOR BACKED MOTOR CONTROL CENTERS.
2. NOT USED
3. NOT USED
4. THE DC SWITCHBOARDS (COMPONENT DESIGNATION "DS") INCLUDE MOLDED CASE CIRCUIT BREAKERS OF APPROPRIATE RATING. HIGHER CURRENT INTERRUPTING RATING, WHERE NEEDED, IS ACHIEVED VIA SERIES CURRENT LIMITING FUSES MOUNTED IN THE MCB ENCLOSURE. SELECTION OF THE DRAWOUT FEATURE, WHERE NECESSARY FOR THE EASE OF MAINTENANCE, WILL BE DETERMINED AT THE TIME OF COMPONENT SPECIFICATION PREPARATION.
5. NOT USED
6. ALL EQUIPMENT SHOWN ON THIS DRAWING IS NNS COMMERCIAL GRADE EQUIPMENT.
7. FOR NON-CLASS 1E DC SYSTEM METER AND RELAY DIAGRAM. SEE DWGS. EDS-E3-003 AND 004.
8. BATTERY AMPERE-HOUR RATING IS BASED ON 8 HOURS DISCHARGE RATE.
9. NOT USED
10. FOR LEGEND AND ABBREVIATION, SEE DWGS GW-E9-001, 002 AND 003.
11. NOT USED
12. NOT USED
13. PLUG-IN TYPE LOCKING DISCONNECTS ARE PROVIDED TO PERMIT CONNECTION TO THE BATTERY TEST LOAD BANK.
14. THE SWITCHBOARD BUS RATING OF 3000 AMP IS BASED ON CONTINUOUS LOAD.
15. REFER TO THE SYSTEM SPECIFICATION DOCUMENT (SSD) • APP-EDS-E8-001 FOR COMPONENT TECHNICAL SPECIFICATIONS.
16. THE SWITCH IS EQUIPPED WITH A KIRK-KEY INTERLOCK TO PREVENT SPARE BATTERY CONNECTION TO MORE THAN ONE SWITCH BOARD AT ANY TIME.

REFERENCE DRAWINGS/DOCUMENTS

TITLE	DWG. NO.
AC POWER SYSTEM - STATION ONE LINE DIAGRAM	FIG. 8.3.1-1
NON-CLASS 1E & UPS ONE LINE DIAGRAM (GROUP 1)	FIG. 8.3.2-3
NON-CLASS 1E DC & UPS SYSTEM ONE LINE METER & RELAY DIAGRAMS (PART I & II)	EDS-E3-003 & 4
EDS SYSTEM SPECIFICATION DOCUMENT	EDS-E8-001

Figure 8.3.2-3 (Sheet 3 of 3)
Non-Class 1E DC & UPS System One Line Diagram