

June 8, 2009

10 CFR 52.75

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
11555 Rockville Pike
Rockville, MD. 20852

ALNRC 000028



Subject: AmerenUE, Callaway Plant Unit 2 (NRC Docket No. 52-037)
Response to RAI No. 12 (eRAI 2447), Revision 0, SRP Section 03.11
- Environmental Qualification of Mechanical and Electrical
Equipment

Reference:

- 1) Surinder Arora (NRC) to David E. Shafer (AmerenUE), "Final RAI No. 12 (eRAI 2447) - Public" email dated May 12, 2009
- 2) UN#09-176, UniStar Nuclear Energy, NRC Docket No. 52-016; Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI No. 80, Environmental Qualification of Mechanical and Electrical Equipment.

The purpose of this letter is to respond to the Request for Additional Information (RAI) identified in the NRC e-mail correspondence to AmerenUE, dated May 12, 2009 (Reference 1). This RAI addresses the Environmental Qualification of Mechanical and Electrical Equipment as discussed in Section 3.11 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Callaway Plant Unit 2 Combined License Application (COLA).

Enclosure 1 provides our response to RAI No. 12 (eRAI 2447), Revision 0. It is noted that Question 03.11-1 of this RAI was also addressed to Calvert Cliffs Nuclear Power Plant Unit 3 which is the Reference COLA for the U.S. EPR Design Center. Unistar Nuclear Energy provided a response to this RAI question for Calvert Cliffs Nuclear Power Plant 3 in Reference 2.

This response does not include any new regulatory commitments or contain proprietary information.

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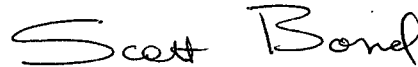
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COLA impacts associated with the response to this RAI are noted in Enclosure 2 for Question 03.11-1 and Enclosure 3 for Question 03.11-2.

If there are any questions regarding this transmittal, please contact me at (573) 676-8519, SBond2@ameren.com or Dave Shafer at (573) 676-4722, DShafer@ameren.com.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 8, 2009



Scott M. Bond
Manager,
Nuclear Generation Development

SMB/AML/slk

Enclosure:

1. Response to RAI No. 12 (eRAI 2447), Revision 0
2. Proposed COLA Changes Associated with the Response to Question 03.11-1 RAI No. 12 (eRAI 2447)
3. Proposed COLA Changes Associated with the Response to Question 03.11-2 RAI No. 12 (eRAI 2447)

cc:

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File code: A160.5761

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Enclosure 1
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Enclosure 1

Response to RAI No. 12 (eRAI 2447), Revision 0

Question 03.11-1

Section 3.11 of FSAR Rev.2:

10 CFR 50.49(j) states that "A record of the qualification....must be maintained in an auditable form ..." Please describe how the records will be maintained in an auditable form so that the documents are readily accessible for audit. Make appropriate changes to the FSAR regarding record retention under 10 CFR 50.49(j).

Response:

This question was previously addressed to Calvert Cliffs Nuclear Power plant Unit 3 which is the Reference COLA for the U.S. EPR Design Center. Unistar Nuclear Energy provided a response to this RAI question for Calvert Cliffs Nuclear Power Plant 3 in Reference 2. AmerenUE endorses the response provided by Calvert Cliffs Nuclear Power Plant Unit 3 in RAI No. 80 Question 03.11-3.

COLA Impact

COLA Part 2 FSAR, Section 3.11 and COLA Part 10 ITAAC will be revised as shown in Enclosure 2 during the next formal revision of the Callaway Plant Unit 2 COLA.

Question 03.11-2

FSAR Table 3.11-1, page 3-210 states: "Verify the Tag Numbers of the ESWEMS Pumphouse Class 1E 6.9 kV-480 V transformers and ESWEMS Class 1E Motor Control Centers." These are inconsistent with the Tag No.s for the same equipment shown in Figure 8.3-1, "EPSS Single Line Diagram." Please reconcile the inconsistency and amend your FSAR accordingly.

Response:

The tag numbers for the ESWEMS Pumphouse Class 1E equipment given in FSAR Table 3.11-1 are correct. The tag numbers given for the same equipment shown in Figures 8.3-1 through 8.3-3 "Emergency Power Supply System Single Line Drawing" and Tables 8.3-1 through 8.3-2 are incorrect and will be revised to reflect the numbers provided in Table 3.11-1 as shown in Enclosure 3, Proposed COLA Changes Associated with the Response to Question 03.11-2.

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Enclosure 1

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COLA Impact

FSAR Figures 8.3-1, through 8.3-3 and Tables 8.3-1 through 8.3-2 will be revised to reflect correct tag numbers for the ESWEMS Pumphouse Class 1E electrical equipment as shown in Enclosure 3 during the next formal revision of the Callaway Plant Unit 2 COLA.

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Enclosure 2

Enclosure 2

Proposed COLA Changes Associated with the Response to Question 03.11-1
RAI No. 12 (eRAI 2447)

3.11 ENVIRONMENTAL QUALIFICATION OF MECHANICAL AND ELECTRICAL EQUIPMENT

This section of the U.S. EPR FSAR is incorporated by reference with the supplements as described in the following sections.

The U.S. EPR FSAR includes the following COL Holder Item in Section 3.11:

A COL applicant that references the U.S EPR design certification will maintain the equipment qualification test results and qualification status file during the equipment selection, procurement phase and throughout the installed life in the plant.

This COL Holder Item is addressed as follows:

{AmerenUE} shall develop and maintain 1) a list of electrical equipment meeting the criteria of 10 CFR 50.49 and 2) a record of qualification for each applicable electrical equipment type. The record shall contain the necessary environmental qualification information to meet the requirements of 10 CFR 50.49. This information will be stored and retained in accordance with the Quality Assurance Program Description or QAPD. This information will remain current and in an auditable form that meets requirements of 10 CFR 50.49(j) and the QAPD. shall maintain the equipment qualification test results and qualification status file during the equipment selection, procurement phase and throughout the installed life in the plant.

3.11.1 EQUIPMENT IDENTIFICATION AND ENVIRONMENTAL CONDITIONS

No departures or supplements.

3.11.1.1 Equipment Identification

No departures or supplements.

3.11.1.1.1 Nuclear Island

No departures or supplements.

3.11.1.1.2 Balance of Plant (BOP) and Turbine Island (TI)

No departures or supplements.

3.11.1.1.3 Equipment Review and Screening

The U.S. EPR FSAR includes the following COL Item in Section 3.11.1.1.3:

A COL applicant that references the U. S. EPR design certification will identify additional site-specific components that need to be added to the environmental qualification list in Table 3.11-1.

This COL Item is addressed as follows:

Table 3.11-1 provides the list of additional site-specific components to add to the equipment list in U.S. EPR FSAR Table 3.11-1. (It includes the safety-related and augmented quality items of the site-specific portion of the Essential Service Water Emergency Makeup System (ESWEMS) and Fire Protection System.) The cable types listed are typical of those which are anticipated to be utilized throughout the plant in safety-related applications, including those which are site-specific. However, the function and location related columns in the attached table entries are for site-specific applications only. The environmental qualification parameters shown in the attached table are based on the criteria described in U.S. EPR FSAR Section 3.11.

LBDCR 09-0117

LBDCR 09-0115

FSAR: Chapter 3.0

COL Items 3.9-9 and 3.9-10 in Section 3.9.1.2

{AmerenUE} shall perform the required pipe stress and support analysis and shall utilize a piping analysis program based on the computer codes described in U.S. EPR FSAR Section 3.9.1 and U.S. EPR FSAR Appendix 3C.

COL Item 3.9-12 in Section 3.9.6.4

{AmerenUE} shall provide a table identifying the safety-related systems and components that use snubbers in their support systems, including the number of snubbers, type (hydraulic or mechanical), applicable standard, and function (shock, vibration, or dual-purpose snubber). For snubbers identified as either a dual-purpose or vibration arrester type, {AmerenUE} shall denote whether the snubber or component was evaluated for fatigue strength. Per ASME Section III, Subsection NF, the fatigue evaluation shall not be required for shock snubbers. This information shall be provided prior to installation of any of the snubbers.

COL Item 3.10-1 in Section 3.10.2

{AmerenUE} shall not use experience data to establish equipment qualification.

COL Item 3.10-2 in Section 3.10.4

{AmerenUE} shall create and maintain the Seismic Qualification Data Package (SQDP) file. This activity shall be initiated during the equipment selection and procurement phase. The SQDP file shall be maintained for the life of the plant.

COL Item 3.11-1 in Section 3.11

{AmerenUE} shall develop and maintain 1) a list of electrical equipment meeting the criteria of 10 CFR 50.49 and 2) a record of qualification for each applicable electrical equipment type. The record shall contain the necessary environmental qualification information to meet the requirements of 10 CFR 50.49. This information will be stored and retained in accordance with the Quality Assurance Program Description or QAPD. This information will remain current and in an auditable form that meets requirements of 10 CFR 50.49(j) and the QAPD. ~~shall maintain the equipment qualification test results and qualification status file during the equipment selection, procurement phase and throughout the installed life in the plant.~~

COL Item 3.11-3 in Section 3.11.3

{AmerenUE} shall develop and submit the equipment qualification testing program, including milestones and completion dates, prior to installation of the applicable equipment.

COL Item 3.12-1 in Section 3.12.4.2

{AmerenUE} shall perform a review of the impact of contributing mass of supports on the piping analysis following the final support design to confirm that the mass of the support is no more than ten percent of the mass of the adjacent pipe span.

COL Item 3.12-2 in Section 3.12.4.3

{AmerenUE} shall use piping analysis programs listed in Section 5.1 of the referenced topical report (ANP-10264(NP)).

COL Item 3.13-1 in Section 3.13-2

{AmerenUE} shall submit the inservice inspection plan for ASME Class 1, Class 2, and Class 3 threaded fasteners to the NRC prior to performing the first inspection.

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Enclosure 3

Enclosure 3

Proposed COLA Changes Associated with the Response to Question 03.11-2
RAI No. 12 (eRAI 2447)

Table 8.3-1—{Onsite AC Power System Component Data Nominal Values}

Component	Nominal Ratings
EPSS Distribution Transformers	Dry Type
21BMT05, 31BMT05, 32BMT05 22BMT05	60 Hz, three phase, air cooled
23BMT05, 33BMT05, 34BMT05 24BMT05	6.9 kV to 480 V
	500 kVA

Table 8.3-2—{EPSS Switchgear, Load Center, and Motor Control Center Numbering and Nominal Voltage}

Nominal Voltage Level	Division	Switchgear / Load Center / Motor Control Center
480 V MCC	1	21 31B NG01 ⁽¹⁾
480 V MCC	2	22 32B NG01 ⁽¹⁾
480 V MCC	3	23 33B NG01 ⁽¹⁾
480 V MCC	4	24 34B NG01 ⁽¹⁾

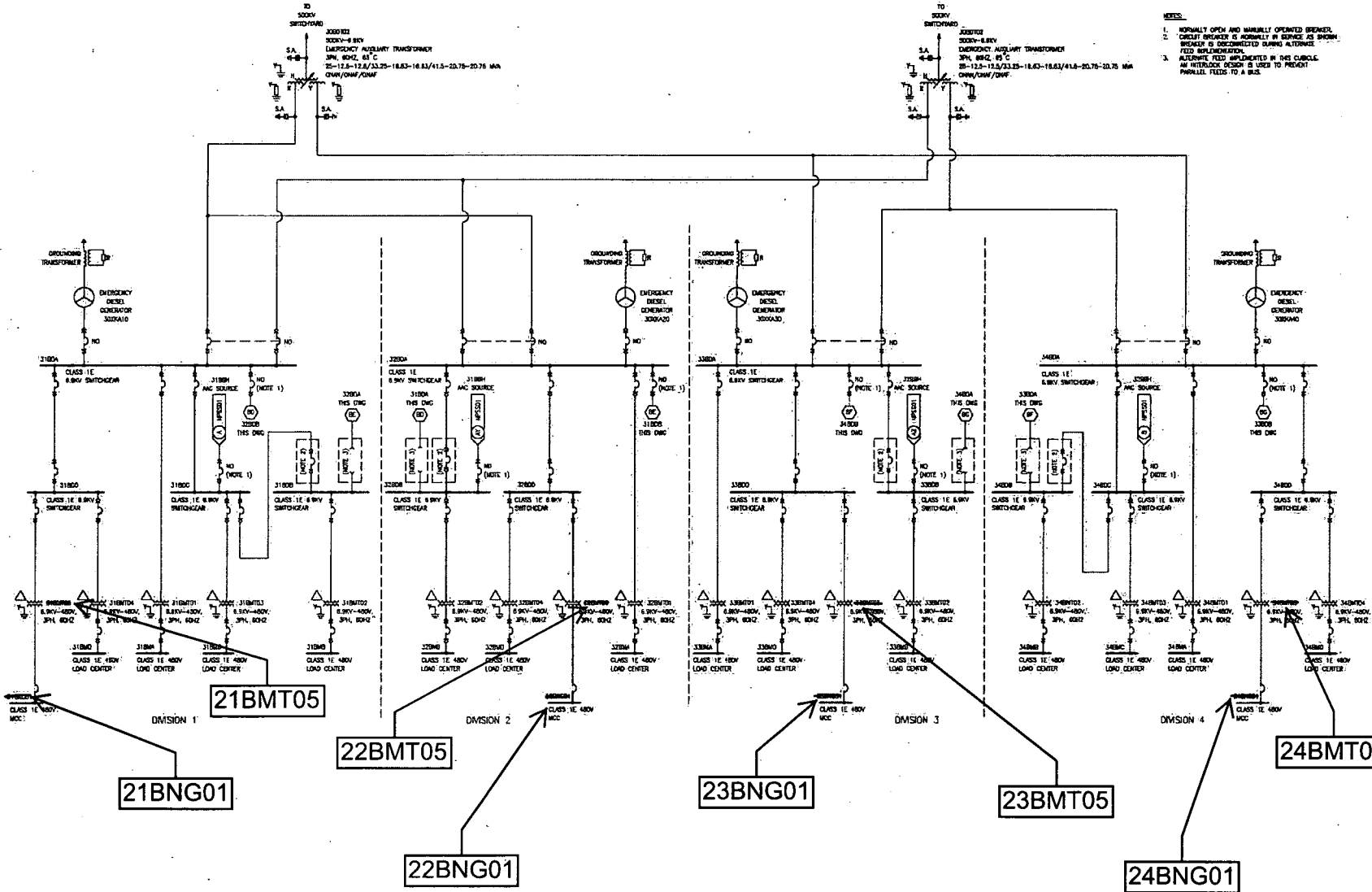
Note

⁽¹⁾ Equipment located in the respective division in the ESWEMS Electrical Building.

FSAR: Chapter 8.0

Figure 8.3-1—(Emergency Power Supply System Single Line Drawing - Sheet 1 of 3)

Supplemental EPSS Single Line Drawing

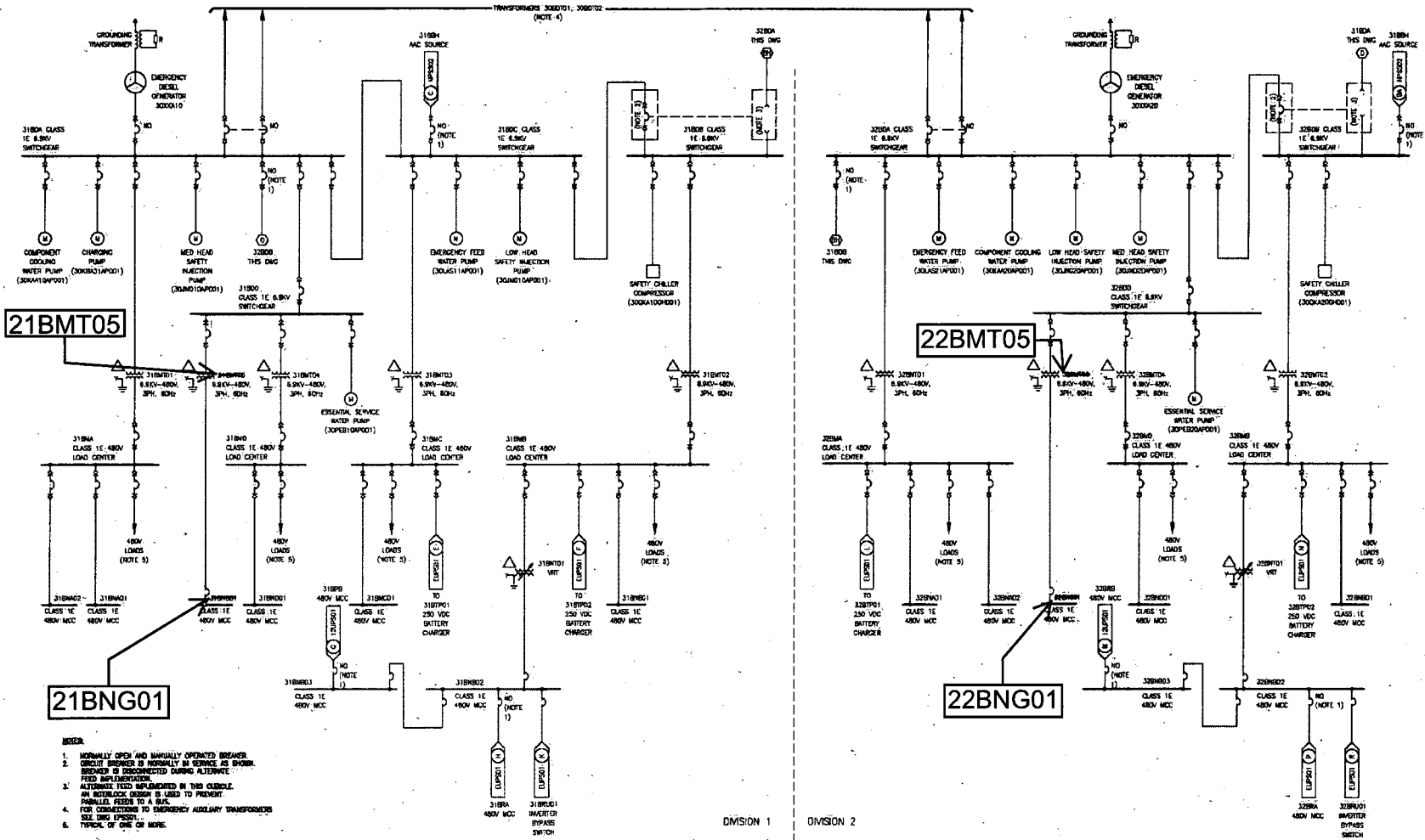


- NOTES:
1. NORMALLY OPEN AND MANUALLY OPERATED BREAKER.
 2. CIRCUIT BREAKER IS NORMALLY IN SERVICE AS SHOWN. BREAKER IS DISCONNECTED DURING ALTERNATE FEED RECONFIGURATION.
 3. ALTERNATE FEED IMPLEMENTED BY THIS SYMBOL IN ALTERNATE DESIGN IS USED TO PREVENT PARALLEL FEEDS TO A BUS.

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 AmerenUE specific COA material, namely all text in brackets.
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Figure 8.3-2—(Emergency Power Supply System Single Line Drawing - Sheet 2 of 3)

Supplemental EPSS Single Line Drawing

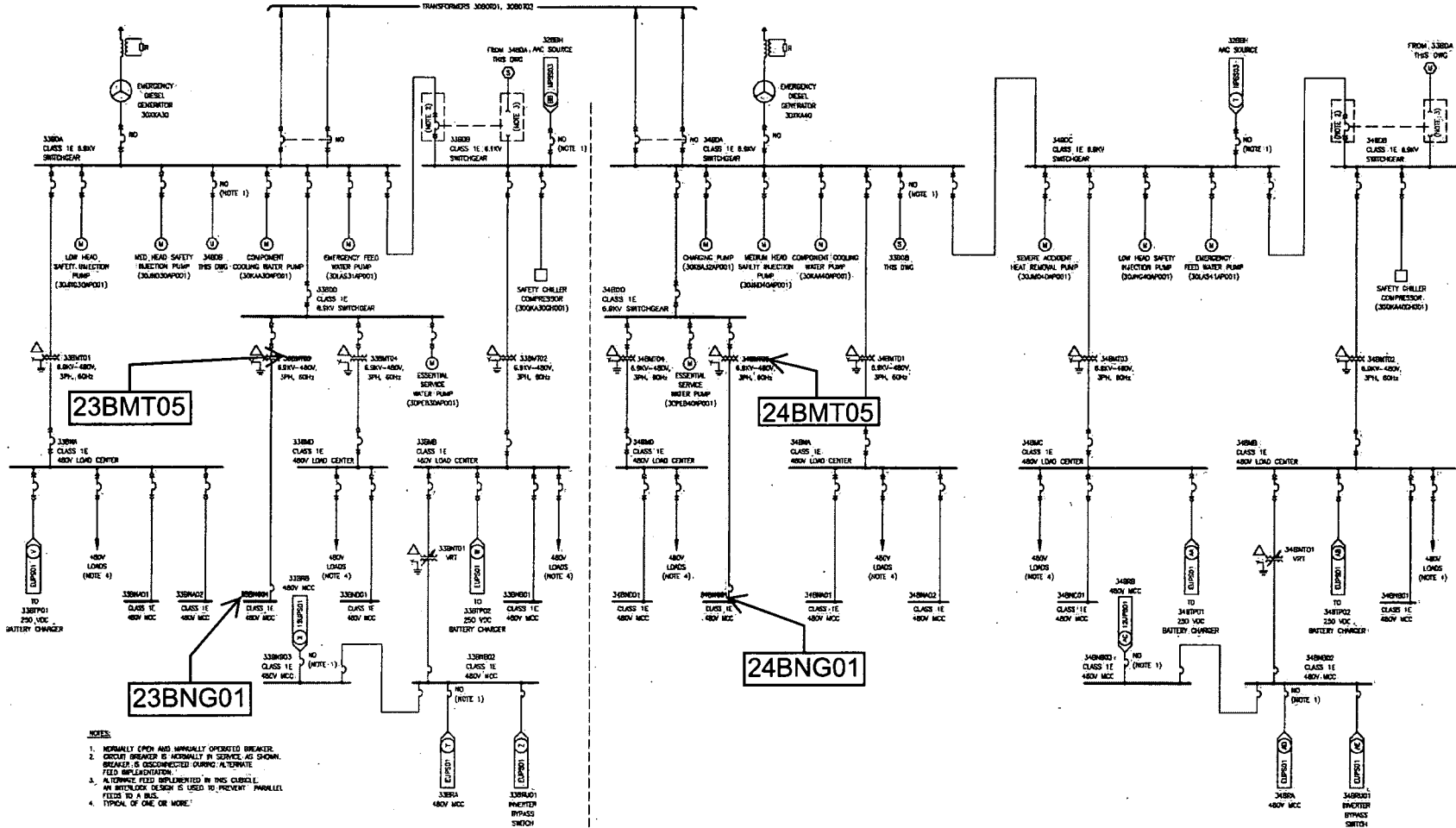


- NOTES:
1. NORMALLY OPEN AND MANUALLY OPERATED BREAKER.
 2. CLOSURE BREAKER IS NORMALLY IN SERVICE AS SHOWN. BREAKER IS DISCONNECTED DURING ALTERNATE FEED IMPLEMENTATION.
 3. ALTERNATE FEED IMPLEMENTED IN THIS CIRCULAR. AN INTERLOCK DESIGN IS USED TO PREVENT PARALLEL FEEDS TO A BUS.
 4. FOR CONNECTIONS TO EMERGENCY AUXILIARY TRANSFORMERS SEE DRAW EPSS01.
 5. TYPICAL OF ONE OR MORE.

DIVISION 1 DIVISION 2

Figure 8.3-3—{Emergency Power Supply System Single Line Drawing - Sheet 3 of 3}

Supplemental EPSS Single Line Drawing



- NOTES:
1. NORMALLY OPEN AND MANUALLY OPERATED BREAKER.
 2. CIRCUIT BREAKER IS NORMALLY IN SERVICE, AS SHOWN. BREAKER IS DISCONNECTED DURING ALTERNATE FIELD IMPLEMENTATION.
 3. ALTERNATE FEED IMPLEMENTED IN THIS CIRCULAR. AN INTERLOCK DESIGN IS USED TO PREVENT PARALLEL FEEDS TO A BUS.
 4. TYPICAL OF ONE OR MORE.