

2.5.3 Station Blackout Alternate AC Source

1.0 Description

Two station blackout diesel generators (SBODG) are provided as the alternate ac (AAC) source to provide power to station loads necessary to bring and maintain the plant in a safe shutdown condition during beyond design basis event station blackout conditions.

2.0 I&C Design Features, Alarms, Displays and Controls

- 2.1 Displays listed in Table 2.5.3-1—Station Blackout Alternate AC Source Electrical Equipment Design, are retrievable in the main control room (MCR) and the remote shutdown station (RSS) as listed in Table 2.5.3-1.
- 2.2 SBODG equipment controls are provided in the MCR and RSS as listed in Table 2.5.3-1.

3.0 Mechanical Design Features

- 3.1 The mechanical portions of the SBODG air start system are independent of the mechanical portions of the emergency diesel generator (EDG) air start system.
- 3.2 Each SBODG has a fuel oil storage tank.
- 3.3 Each SBODG has a fuel oil day tank.
- 3.4 Each fuel oil transfer pump capacity is greater than SBODG fuel oil consumption at the continuous rating.

4.0 Electrical Power Design Features

- 4.1 The SBODGs are connected to the emergency power supply system (EPSS) Class 1E buses through two in series circuit breakers (one Class 1E circuit breaker at the Class 1E EPSS bus and one non-Class 1E circuit breaker at the non-Class 1E normal power supply system (NPSS) bus).
- 4.2 SBODG #1 is capable of connecting to EPSS Divisions 1 and 2.
- 4.3 SBODG #2 is capable of connecting to EPSS Divisions 3 and 4.
- 4.4 Each SBODG output rating is greater than the analyzed loads assigned in the respective EPSS divisions.
- 4.5 The electrical portions of the SBODG air start system are independent of the electrical portions of the EDG air start system.

5.0 Inspection, Tests, Analyses and Acceptance Criteria

Table 2.5.3-2 lists the station blackout AAC source ITAAC.

Table 2.5.3-1—Station Blackout Alternate AC Source Electrical Equipment Design

| Description | Tag Number ⁽¹⁾ | IEEE Class 1E | MCR/RSS Displays | MCR/RSS Controls |
|-------------|---------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SBODG #1 | 30XKA50 | No | Generator voltage, current, frequency, power, reactive power. Engine running, not running / Generator voltage, current, frequency, power, reactive power. Engine running, not running | Generator output voltage raise and lower, output breaker close and trip. Engine start, stop, governor raise and lower / Generator output voltage raise and lower, output breaker close and trip. Engine start, stop, governor raise and lower |
| SBODG #2 | 30XKA80 | No | Generator voltage, current, frequency, power, reactive power. Engine running, not running / Generator voltage, current, frequency, power, reactive power. Engine running, not running | Generator output voltage raise and lower, output breaker close and trip. Engine start, stop, governor raise and lower / Generator output voltage raise and lower, output breaker close and trip. Engine start, stop, governor raise and lower |

1) Equipment tag numbers are provided for information only and are not part of the certified design.

**Table 2.5.3-2—Station Blackout Alternate AC Source ITAAC
(2 Sheets)**

| Commitment Wording | | Inspections, Tests, Analyses | Acceptance Criteria |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1 | Displays listed in Table 2.5.3-1 are retrievable in the MCR and RSS as listed in Table 2.5.3-1. | A test will be performed. | <ul style="list-style-type: none"> a. Displays listed in Table 2.5.3-1 as being retrieved in the MCR can be retrieved in the MCR. b. Displays listed in Table 2.5.3-1 as being retrieved in the RSS can be retrieved in the RSS. |
| 2.2 | SBODG equipment controls are provided in the MCR and RSS as listed in Table 2.5.3-1. | A test will be performed. | <ul style="list-style-type: none"> a. Controls listed in Table 2.5.3-1 as being in the MCR exist in the MCR. b. Controls listed in Table 2.5.3-1 as being in the RSS exist in the RSS. |
| 3.1 | The mechanical portions of the SBODG air start system are independent of the mechanical portions of the EDG air start system. | An inspection will be performed. | The mechanical portion of the SBODG air start system is located in the switchgear building. |
| 3.2 | Each SBODG has a fuel oil storage tank. | An inspection and analysis will be performed. | Each SBODG fuel oil storage tank capacity is greater than the volume of fuel oil consumed by the SBODG operating at the continuous rating for 24 hours. |
| 3.3 | Each SBODG has a fuel oil day tank. | An inspection and analysis will be performed. | Each SBODG day tank capacity is greater than the volume of fuel oil consumed by the SBODG operating at the continuous rating for two hours. |
| 3.4 | Each fuel oil transfer pump capacity is greater than SBODG fuel oil consumption at the continuous rating. | A test will be performed. | The capacity of each fuel oil transfer pump is greater than SBODG fuel oil consumption at the continuous rating. |

**Table 2.5.3-2—Station Blackout Alternate AC Source ITAAC
(2 Sheets)**

| Commitment Wording | | Inspections, Tests, Analyses | Acceptance Criteria |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1 | The SBODGs are connected to the EPSS Class 1E buses through two in series circuit breakers (one Class 1E circuit breaker at the Class 1E EPSS bus and one non-Class 1E circuit breaker at the non-Class 1E NPSS bus). | An inspection will be performed. | The SBODGs are connected to the EPSS Class 1E buses through two in series circuit breakers (one Class 1E circuit breaker at the Class 1E EPSS bus and one non-Class 1E circuit breaker at the non-Class 1E NPSS bus). |
| 4.2 | SBODG #1 is capable of connecting to EPSS Divisions 1 and 2. | A test will be performed. | SBODG #1 is capable of starting and being available to connect to EPSS Divisions 1 and 2 within 10 minutes of a simulated or actual station blackout. |
| 4.3 | SBODG #2 is capable of connecting to EPSS Divisions 3 and 4. | A test will be performed. | SBODG #2 is capable of starting and being available to connect to EPSS Divisions 3 and 4 buses within 10 minutes of a simulated or actual station blackout. |
| 4.4 | Each SBODG output rating is greater than the analyzed loads assigned in the respective EPSS divisions. | a. An analysis will be performed. b. A test will be performed | a. Analysis concludes each specified SBODG output rating is greater than the analyzed loads. b. Each SBODG provides an output power capacity greater than the analyzed loads. |
| 4.5 | The electrical portions of the SBODG air start system are independent of the electrical portions of the EDG air start system. | A test will be performed. | a. The SBODG air start system compressors are powered from the normal power supply system buses and are independent of the EDG air start system. b. The SBODG pilot air start solenoids are powered from the 12 hour uninterruptible power supply system buses and are independent of the EDG air start system. |

Next File