

The following is to be read and form part of the contract documents for the above project.

## RESPONSES TO QUESTIONS DURING TENDERING

### 1. ATS 26 36 23

- Subsection 1.6.4 calls for service & maintenance software with training class where under Subsection 1.6.4.3 the software mentioned is to have the ability to store data for any function monitored by the generator set controller.
  - ATS would not take in gen set functions to be stored. This would typically be sent directly to the BMS system or overall monitoring system. ATS controller monitors both Utility and Emergency power, providing transfer based on the voltage and frequency programmed. ATS controller does store historical data based on source connected, transfers, alarms, set points. Please clarify intent for ATS software specific to points required for gen set controller.
- **Response: The requirement is to store/display data which is monitored by the gen set control. No storage/display of genset control inputs are required.**
- Subsection 2.2.1.10.G calls for ATS to display information for other transfer switches in the system.
  - Two transfer switches shown in single lines. These are not connected in terms of Master/Slave. Both ATS would act as masters and have independent communication.
  - Please clarify if the intent is for both (all) transfer switches to be accessible from the BMS / Main monitoring system.**Response: Transfer switches are independent and do not require to be accessed from a main monitoring system.**
- Subsection 2.2.2.2.C calls for monitoring phase rotation. Subsection 2.1.2.1 calls for neutral position
  - Transfer proposed will be via Time Delay Neutral to offer Neutral position.
  - No requirement for phase rotation as the load is transferred to an Isolated position (neutral to both sources)
  - Please clarify if In-Phase transfer (only two positions that require an in-phase monitor) is required or if Time delay Neutral (with neutral position) required.**Response:**
  - a. Subsection 2.2.2.2.C is referring to monitoring supply power quality and conditions, not in how load transfer is completed.**
  - a. Transfer switch control is equipped voltage sensor capable of monitoring phase rotation activate alarm when in phase transfer are not met.**
  - b. Refer to Specification Section 26 36 23 2.2.2.6 'Transfer Switch Control' (Shedding purposes)**

### 2. Section 26 09 02

1. Sect 1.3.5.12 indicates that the electrical metering system is to provide control capabilities on "devices including breakers". Please clarify what device control would include as breakers may not be motor operated or have the ability to reset

remotely. If control is added to the electrical metering and monitoring capability, should added security be added considering it is to be accessible from multiple networked computer stations?

**Response: Control should be read as monitor.**

2. Sect 2.1.3 (ref sect 2.3) indicates that meters shall have the ability to monitor and display THD and provide “waveform capture (harmonics)”. As harmonic distortion is not typically a single triggered incident please clarify if the intent is to display harmonic spectrum instead of waveform capture or if THD values are acceptable.

**Response:**

**Provide harmonic spectrum and THD values at meters and waveforms/spectrum at PC.**

3. Sect 2.1.3 calls for harmonic metering and waveform capture. Harmonic metering is not typical of energy metering devices, please confirm if the harmonic function is limited to strategic locations rather than all metering and metered breaker locations .

**Response:**

**Electrical System Metering specification section 2.1.3 specify digital metering unit is capable of measuring and displaying THD. Latest digital metering product offers power quality analysis which is standard on selected Model, it offers individual current and voltage harmonic readings. Harmonic function will be standard for all digital metering and metered breaker.**

4. Distributed metering and breaker-based metering – Several locations on the single line drawings (i.e. panel 6LCNE-N1 NE loadcenter Normal Power) illustrate the use of a main digital meter and (5) metered feeder circuit breakers. Several of the metered breakers are of small capacity, thus are not typically Air Circuit style as stipulated in sect 2.3. In lieu of supplying separate (in the stated example 6) metering devices, please confirm the acceptance of a single multipoint meter device with a single ethernet connection that will capture all metering locations (refer to the attached an example of energy multi-point meter) and standard breakers.

**Response:**

**Using 6LCNE-N1 as an example, these are not air circuit breakers but moulded case, metered circuit breakers shall be used as shown.**

3. For new Panel boards: Can you please send us a pic of each of the panel to clearly understand what is required for us to provide?

➤ Manufacturers and Breakers count need to be replaced on Existing panels?

○ 208V Panels:

▪ What number of breakers required and what is the manufacturer of these panels?

**Response:**

**Refer to attached folder pictures**

a. Existing Panel

○ 120/240V 1 Ph. Panels:

▪ What number of breakers required and what is the manufacturer of these panels?

**Response:**

Refer to attached folder pictures  
b. Existing Panel

➤ What is NDMU on DWG E7-0-01 of package 1?

Response:

Refer to Dwg. No. E0-00-01 under legend lists

➤ How do you identify the Panel boards that require GF/ AF breakers?

- Can you please provide panel boards identification?

Response: See question 9 of Addendum 5.

➤ Can you please provide CDP and SPD Specs?

Response:

See specification 26 24 16 01 for details for CDPs and SPDs.

#### 4. Question 1:

Metering Specifications 26 09 02 1.3.3 says to provide electronic trip units for the items listed. It also talks about electronic trip units under 2.3

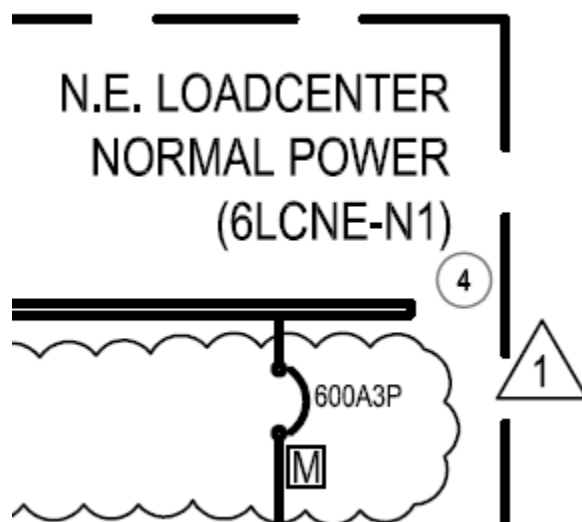
Molded Case Circuit Breaker specs 26 28 21 2.1.6 says that breakers rated at more than 400A should have electronic trip units.

- Please clear up requirements of where you want/which breakers require electronic trip units

Response:

Refer to specification 26 09 02 General 1.3.3 as well as any breakers over 400A.

- Since you have mentioned electronic trip units in the metering section of the specifications, please confirm which breakers/feeders you are wanting metered. (I noticed there is a box with an "M" in it next to some of the breakers, please clarify what this means). Example:



Response:

All drawings that were issued under addendum 2 and has a tag M enclosed in square as per example shown indicates that Circuit Breaker is metered capable.

#### Questions 2:

Please provide CDP specifications – 208V and 600V – Addendum 3 question 2 does direct us as per KA ratings but we need more info to quote them.

Response: See specification 26 24 16 01 for details for CDPs and SPDs.

#### Question 3:

Addendum 4 question 9 refers to AF/GF breakers – panel schedules have not been provided and are assumed as per addendum 2 question 13. If you want AF/GF breakers provided in panels please either indicate a general number in each panel provided and do a change order once confirmed on site, or submit detailed panel schedules of sizes and quantities required. We need more info than the response provided in question 9.

Response: For estimating purposes provide 12 AF/GF breakers per panel feeding inmate rooms. Quantities to be verified on site.

#### Question 4:

We need more information on existing equipment.

Package 2 – SGR-N1-2, SGR-E1-2, SGR-E2-2, 6DPB1-E1 – need to know make/models/KA requirement so we know what to include for new breakers. We are assuming there is enough room currently in these CDP's/Panels for new breakers to be installed and if new breakers cannot be installed or if there is not enough room existing in CDP's/Panels a change order will be given. Please provide pictures.

Response: Breakers are Square D Master Pact NW - 80kA, Square D LX# - 65kA, Square D PowerPact 25kA, etc.

6DPB1-E1 shall be new 600V Distribution Panel.

Package 3: 6LCC13-N1, 6LCC13-E1 – need to know make/models/KA requirement so we know what to include for new breakers. We are assuming there is enough room currently in these CDP's/Panels for new breakers to be installed and if new breakers cannot be installed or if there is not enough room existing in CDP's/Panels a change order will be given. Please provide pictures

Response: Breakers are Square D #powerpact – 25kA @ 600V. Main breakers are Square D Powerpact RJ800.

Package 4: make/model of Panel N1A? – you covered most everything else in addendum 4 question 3.

Response: Panel N1A is Federal Pioneer, model unknown but uses Horizon breakers such as 'CE3015E'

5. The instruction states to refeed all the existing equipment but there are no reference drawings(E2-03-02) for the listed items. Where is the electrical gear located? The disconnects that feed the electrical gear are to be removed, is it intended that junction boxes replace the disconnects and splices are made in the wiring?

EXISTING PANEL NAME	NEW PANEL NAME	DESCRIPTION	VOLTAGE	BUS	PH	WIRES	LOCATION	FEEDERS	FED FROM	NOTES
WELDER SERVICE		WELDER SERVICE LOAD	600V		3Ø		C-5	EXISTING	6DPC5-N1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 6DPC5-N1
P-2C5		P-2C5 LOAD	600V		3Ø		C-5	EXISTING	6DPC5-N1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 6DPC5-N1
P-1C5		P-1C5 LOAD	600V		3Ø		C-5	EXISTING	6DPC5-N1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 6DPC5-N1
		TO BUILDING C-7	120/208V		3Ø		C-5	EXISTING	2DPC5-N1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-N1
		TO BUILDING C-6	120/208V		3Ø		C-5	EXISTING	2DPC5-N1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-N1
		TO BUILDING C-6 DORM	120/208V		3Ø		C-5	EXISTING	2DPC5-N1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-N1
		EXISTING PANEL	120/208V		3Ø			EXISTING	2DPC5-E1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-E1 CONTRACTOR TO VERIFY LOCATION ON SITE
		EXISTING PANEL	120/208V		3Ø			EXISTING	2DPC5-E1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-E1 CONTRACTOR TO VERIFY LOCATION ON SITE
		C-6 LOWER	120/208V		3Ø			EXISTING	2DPC5-E1	RE-FED FROM EXISTING SPLITTER IN BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-E1
		PANEL METAL SHOP	120/208V		3Ø			EXISTING	2DPC5-E1	RE-FED FROM EXISTING FUSED DISCONNECT IN BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-E1 CONTRACTOR TO VERIFY LOCATION ON SITE
		PANEL DORM C-7	120/208V		3Ø		C-5	EXISTING	2DPC5-E1	RE-FED FROM EXISTING FUSED DISCONNECT IN BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-E1
		EXISTING CIRCUIT	120/208V		3Ø			EXISTING	2DPC5-E1	RE-FED FROM EXISTING SPLITTER BLDG C-5 BASEMENT TO NEW DISTRIBUTION 2DPC5-E1 CONTRACTOR TO VERIFY LOCATION ON SITE

Response:

Refer to Dwg. No. E7-03-02 for existing Building C-5 Emergency and Normal Load and Dwg. No. E7-03-03 where Bldg. C-5 existing load will be reconnected. Intercept existing feeds and route to new panel distribution source. Dwg. No. E2-03-02 detail 2 shows where the new 600V and 208V shall be located.

6.Duct Bank Spec 33 65 73 3.2.8 indicates that all changes in direction, offsets & transpositions are to be made with 5 degree bend sections. Will DB2 factory built 90,45, & 30 degree fittings be considered as an alternate to sectional bends?

Response:

Specification Section 33 65 73 3.2.8 indicates max of 20 degree off set. Factory built fittings are acceptable alternates but are to be in 5 degree increments.

7.If DB2 factory built fittings are allowed, what are the desired radius bends to be used?

Response:

Refer to answer #6

8.Where duct bank conduits are 90'd up to be installed exposed above grade or into eHouse floors, will GRC 90 degree elbows and riser conduits required?

Response:

Where Teck cables are used, risers will not be required. If non-teck cables are used risers will be required.

#### **AMENDMENTS TO PROJECT – GENERAL**

1. Allow for the following 600V, 42kA CDP breakers to be used as spares and/or replacements on site:
  1. 15 to 60 amps: quantity 10
  2. 30 to 100 amps: quantity 10
  3. 50 to 150 amps: quantity 8
  4. 70 to 250 amps: quantity 5
2. Breakers to be complete with long time adjustable settings.
3. Clarification to Addendum 1 Question 11:
  1. Delete clause 1.7 from section 01 52 00. Security requirements to follow section 01 35 13.

#### **AMENDMENTS TO THE SPECIFICATIONS**

**Reference:**

#### **AMENDMENTS TO THE DRAWINGS**

**Reference:**

Attachments:

END OF ADDENDUM NO. 6