QUESTIONS & RESPONSES #03

TITLE	**071664 | Terminal 3 and Terminal 4 Shore Power Project**
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SUBMITTAL DUE DATE	**April 5, 2022 @ 2:00PM (PST)**
Q&A ISSUE DATE	**March 24, 2022 @ 10:00AM (PST)**

QUESTIONS	PORT RESPONSES	REFERENCE
Can you please send me the current plan holders list for the Terminal 3 & 4 Shore Power project?	The holders list is posted to the procurement page (see bottom of files on right side of page).	N/A
"BP" Ductbank shown to be installed on plan E1.2 between SSPV3 intersecting with SSPV4 and then ending at SSPV5 is not provided with a Designation as to what this ductbank is to contain, can the designer please clarify the following. Q1- Is this a new ductbank to be installed as a part of the project or is this an existing ductbank. Q2 – If this is new ductbank please clarify the Conduit Sizes and Number of conduits that are supposed to be within this ductbanks. Q3 – If this is an existing conduit, please clarify what is to be installed within this ductbank as it pertains to conductor size, type and count. Q4 – If there is nothing to be done with this ductbank run please clarify.	Responses are as follows: 1) Per the legend/symbols on Sheet E1.0 (under conduit and raceway heading at top middle of page), heavy dashed lines indicate "new conductors in existing conduit/ductbanks". See also the Conduit and Conductor Schedule on Sheet E4.1 for conduit and conductor information. The "BP" ductbank (ID#'s 2A and 2B) between SSPV3 and SSPV5 are existing ductbanks as indicated by the thin text in conduit and conductor schedule. See also Key Note 1 on Sheet E1.2 which describes that existing vaults SSPV2, SSPV3, SSPV4 and SSPV5 need to be replaced with new larger 7'x5'x4' vaults and that there are existing conduits that are empty/spares. 2) Not a new ductbank as described in answers to Q1 and Q3. 3) See the schedule on Sheet E4.1 for the existing conduit sizes and new conductor requirements. 4) See previous answers.	"BP" Ductbank
"C" Ductbank shown to be installed on plan E1.2 between SDV5 intersecting with SDV6 and then ending at SDV7 is not provided with a Designation as to what this ductbank is to contain, can the designer please clarify the following. Q1- Is this a new ductbank to be installed as a part of the project or is this an existing ductbank. Q2 – If this is new ductbank please clarify the Conduit Sizes and Number of conduits that are supposed to be within this ductbanks. Q3 – If this is an existing conduit, please clarify what is to be installed within this ductbank as it pertains to conductor size, type and count. Q4 – If there is nothing to be done with this ductbank run please clarify.	Responses are as follows: 1) Per the legend/symbols on Sheet E1.0 (under conduit and raceway heading at top middle of page), heavy dashed lines indicate "new conductors in existing conduit/ductbanks". See also the Conduit and Conductor Schedule on Sheet E4.1 for conduit and conductor information. The "C" ductbanks (ID# 12AB) between SDV5 and SDV7 are existing ductbanks as indicated by the thin text in conduit and conductor schedule. 2) Not a new ductbank as described in answers to Q1 and Q3. 3) See the schedule on Sheet E4.1 for the existing conduit sizes and new conductor requirements. 4) See previous answers.	"C" Ductbank
Drawing C4.2 is not a part of the high resolution drawing set so can this be released to bidders?	Yes, refer to Addendum 01 for high-resolution copy of Sheet C4.2.	Drawing C4.2

Spec section 33 77 00 – 2.05A 1 calls out Arc- resistant switchgear. Can you confirm that this requirement is only for the breaker sections in this lineup? Our understanding is that the switches will not be operated under load and an arc-resistant rating would not be necessary. Furthermore, an arc-resistant rating on MV Switches would be unusual. This would apply to both the Pier 3 and Pier 4 Walk-in enclosures.	Confirmed. The arc-resistant rating requirement applies only to the breaker section, not to the switches. Refer to Addendum 01.	Spec Section 33 77 00 2.05A 1
Are covers/lids needed for the SPO Box Vaults governed by 26 90 11 and shown on sheets E2.1 thru E2.6	SPO vaults SSB1, SSB2, SSB3, SSB4, and SSB5 are existing vaults which have existing lids (covers) as indicated in Key Note 10 on Sheets E2.2 through E2.6. Vault SSB0 is a new SPO vault which requires a new lid (cover) as indicated in Key Note 10 on Sheet E2.1. See Sheets S8.1 through S8.3 and Section 05 55 00 for requirements for the new lids (covers) to be provided for vault SSB0.	Spec Section 26 90 11 E2.1 - E2.6
Can you provide a 2 week extension. I have heard from multiple Manufactures that they need this extra time to be able to provide pricing for all the MV substation equipment.	Yes, the bid opening date for this project is extended to April 5, 2022. Refer to Addendum 01.	N/A
Please provide the specifications for the NGR	Section 26 12 16 - Medium Voltage Power Substations has been revised to include a new Article 2.10 that addresses neutral grounding resistor (NGR) specifications. Refer to Addendum 01.	NGR
Please provide specifications for the PLC/HMI	Section 33 77 00.01 - Medium Voltage Shore Power Switches PLC-HMI has been added to the project manual. This new section addresses PLC and HMI specifications. Refer to Addendum 01.	PLC/HMI
Please provide specifications for the DC Batteries	Section 33 77 00.01 - Medium Voltage Shore Power Switches PLC-HMI has been added to the project manual. This new section addresses battery specifications. Refer to Addendum 01.	DC Batteries
Just wanted to confirm as I couldn't find any information in the specifications, is there any sort of registration required to attend the Pre-Bid Meeting on 03/02 @ 11:30 AM?	No registration was required to attend the project's pre-bid meeting.	N/A
Conduit 10AB shown within the Pier 3 Conduit and Conductor Schedule indicates the installation of a 7-Conductor Cable, 5-Conductor Cable, and a 3 Pair Fiber Optic Cable. It is not typical to share conduit space of power and fiberoptics conductors. Please confirm this is the intent to share conduit for the fiberoptics and the (2) other cables within the same conduit. There is a lot of risk and potential damage that may arise when pulling these conductors in the same conduit and could serve as a potential issue if anyone of these conductor/cables needs to be replaced in the future.	It is the intent to share the conduit for both the fiber optic cable and the 5/C and 7/C cables utilizing innerduct for the fiber optic cables. Contractor shall provide fabric innerduct through the 2" conduit to install the fiber optic cable specified for conduit 10AB. The 5/C and 7/C cables can run in the 2" conduit outside of the innerduct. Contractor shall provide 3/4" corrugated innerduct for running fiber optic cable through all 4" conduits for conduit runs 11AB and 12AB, with the 5/C and 7/C cables similarly run outside the innerduct. Refer to Addendum 02 for revisions to Sheet E4.1 and Section 27 05 28 – Communications Pathways.	Conduit 10AB
Spec section 261216 2.01-2.03 appears to indicate the desire to have Dry Type, Cast-coil transformers. Sheet E5.1 has a 5.0/6.25MVA unit shown that has the note ONAN/OFAF which means – Oil Natural Air Natural/ Oil Forced Air Forced – which would seem to indicate an oil filled, Substation unit. Can you confirm if this unit is meant to be Dry-Type per the spec?	Medium voltage (MV) substation transformers are dry-type per specifications. Refer to Addendum 02 for revisions to Sheets E5.1 and E5.3.	Spec Section 261216 2.01 - 2.03
We're providing shore power product pricing to bidders. What's the award date for the contract.	The tentative date for contract award is approximately 20 days after bid opening.	N/A

Was the Pre-Bid a Mandatory meeting? If we were not able to attend may we still bid this project?	The pre-bid meeting for this project was not mandatory. Contractors that were unable to attend the pre-bid meeting may still bid on the project.	N/A
Are the MV substation Transformers Liquid Filled or Dry Type? a. The Specifications call for Dry Type but the drawings seem to reference a Liquid Filled. i.If Liquid filled please provide updated specifications.	Medium voltage (MV) substation transformers are dry-type per specifications. Refer to Addendum 02 for revisions to Sheets E5.1 and E5.3.	MV Substation Transformers
We were not able to be at the site meeting, is it possible to schedule a site visit this week?	No, a second site visit will not be scheduled.	N/A
Is there a specification for Metering / Power Monitoring and Control? The substation one-lines make reference to Siemens WINPM with note 8 on E5.1; note 4 on E5.2, etc – however, details on the meter and systems requirements are needed. To accurately quote this important part of the system, more information is needed.	The intent is to provide Siemens WinPM hardware and software in the walk-in enclosure to communicate with existing Siemens WinPM system in the existing Terminal 3 and Terminal 4 substations. Refer to Addendum 02 for new Section 26 09 13 – Electrical Power Monitoring and Control.	Siemens WINPM E5.1 - E5.2
Conduit 10AB shown within the Pier 3 Site Electrical plan is shown as a "Dashed" Line which according to the Electrical Symbols and Abbreviations plan indicates this conduit is already installed. However when referencing the Conduit and Conductors Schedule for Pier 3, conduit 10AB is considered as a newly installed 2" Conduit. Please clarify whether this conduit is existing and only requires additional conductors or whether this is a new conduit for the contractor to install.	The pathway for conduit 10AB consists mostly of an existing conduit pathway, but does include some sections of new conduit at each end. Conduit 10AB is an existing 4" conduit that runs from SDV1 to SDV2 to SDV3 (see "dashed" lines on Sheets E1.2 and E3.2) and an existing 2" conduit between SDV3 and WPV1 (see "dashed" lines on Sheet E2.1). Conduit 10AB is a new 2" conduit from the walk-in enclosure to SDV1 (as indicated by "solid" line on Sheet E3.2) and from existing WPV1 to new vault SSB0 at the bullrail (see "solid" line on Sheet E2.1). Refer to Addendum 02 for Sheet E4.1 revisions to clarify conduit run 10AB.	Conduit 10AB
Q1 - Cannot have arc-resistant metalclad switchgear bussed to metal enclosed switchgear. Please advise. Q2 - It is assumed that the metal enclosed switches are manually operated as they are indicated to have kirk key interlocks. Please confirm. Q3 - Please advise what type of differential relay is desired by the "87C" symbol. Q4 - Drawing shows PLC/HMI/meter included in switchgear lineup but specification 261216 2.03A calls for remote. Please advise. Q5 - Please provide meter specification and communication protocol of digital meters for tie into Siemens WinPM system. How do the relays tie into the meters? Q6 - Additional details are required on the function of the PLC and HMI for an accurate quote. 337700 1.02B.6 references tie into crane system but more details will be required for accurate quote.	Responses are as follows: 1) The switchgear in the walk-in enclosure is metal enclosed switchgear (not metal clad). Refer to Addendum 02 for relevant revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures. 2) Confirmed. Metal enclosed switches are manually operated. Refer to Addendum 02 for relevant revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures. 3) Differential relays 87C are cable differential relays to pick up difference in currents in parallel cable runs feeding the vessels. 4) Sheets E5.2 and E5.4 call for local switch and pushbutton controls (trip and close) and not remote. 5) Output of SEL relays provide input to WinPM system. Refer to Addendum 02 for new Section 26 09 13 – Electrical Power Monitoring and Control. 6) Refer to Addendum 01 for new Section 33 77 00.01 - Medium Voltage Shore Power Switches PLC-HMI.	Sheet 2 E5.2 & 5.4
Spec section 00 01 15 lists drawing sheets included for the project, drawings C4.2, S2.6, S2.7 seem to be missing from original bid docs. Please provide those drawings as indicated in the spec section.	Refer to Addendum 01 for Sheet C4.2. Sheets S2.6 and S2.7 are not included in the bid set. Refer to Addendum 02 for revisions to Section 00 01 15.	Spec Section 00 01 15
Spec section 33 77 00 (1.02) B (1) states that the switchgear lineup needs to be Arc Resistance per IEEE C37.20.7. Can you confirm if the switchgear needs to be type 2B?	Confirmed. The switchgear needs to be Type 2B. Refer to Addendum 02 for revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures.	Spec Section 33 77 00 1.02

Spec 33 77 00 sates that complete lineup to be inside a walk-in enclosure of 316 SS. Q1 - The specific style of this lineup does not fit the offerings of manufacturers of walk-in aisle switchgear. Manufacturers of medium voltage gear do not manufacture switchgear cell kits in stainless steel, and it is uncommon to have metal clad and metal enclosed equipment in the same lineup and in a walk-in aisle. Many designs utilize the switchgear structure to support the NEMA 3R components, so mixing structures does not fit into the approved tested designs. The custom nature of the lineup (arc res, stainless, metal enclosed and metal clad) will create challenges that are manageable in an e-house configuration, but not a NEMA 3R walk-in switchgear enclosure. Since the lineup is fusion of MV Load Interrupter Switches and MV Vacuum Circuit Breakers, an offering of Arc Resistant construction in outdoor walk-in switchgear. Confirm if the contractor is to provide a NEMA 3R design or E-house option. Q2 - If E-house option is not acceptable, we would need to offer all the Load Interrupter Switches as Vacuum Circuit Breakers to form single lineup of metal-clad vacuum circuit breaker switchgear in a shelter-clad enclosure. But again, the individual sections/ enclosures are not 316 SS type. Q3 - As the drawings shows the MV VCB coupling with transformer, the arc resistant gear cannot be offered in such a case. Is this lineup in Sheet-1, also required to be in walk-in enclosure? This will certainly need separate E-house as transformer rating is 5/6.25 MVA, which is large.	Responses are as follows: 1) Only the walk-in enclosure is stainless steel 316SS. All breakers and switches inside are not stainless steel nor NEMA 3R. Walk-in switchgear is metal enclosed, not metal clad. Refer to Addendum 02 for revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures. 2) The individual sections/enclosures are not 316SS, only the enclosure. 3) The substation's MV switch, primary breaker, transformer, and secondary breaker are not in a walk-in enclosure.	Spec 33 77 00 316 SS
Spec Section 26 28 00, Para. 1.04.B. Confirm if only the product line for the product supplied for this project to be ISO 9001 certified or if it must be the entire facility.	Confirmed. Only the product line supplied for this project is required to be ISO 9001 certified.	Spec Section 26 28 00 Para 1.04.B
Spec Section 26 28 00, Para. 2.08 (and Para 3.01.B) - What is the desired tuning point for the capacitors?	The specified capacitors are fixed size, not variable, and do not need a tuning point. Refer to Note 1 on Sheets E5.2 and E5.4.	Spec Section 26 28 00 Para 2.08 (and Para 3.01 B)
Spec Section 26 28 00, 2.05.I.4 state the continuous current and voltage rating of the capacitor bank shall be based upon the harmonic current spectrum specified. No harmonic current spectrum was specified, please provide further direction	These capacitor bank is for power factor correction, not for harmonic filtering. Refer to Addendum 02 for revisions to Section 26 28 00 - MV Automatic Power Factor Correction Capacitors.	Spec Section 26 28 00 2.05.I.4
Dwg. E5.2 is confusing. On the LH side of the drawing showing the capacitor/filter bank, doesn't match the specified ratings on the drawing, provide further clarification.	The automatic power factor correction capacitor bank is 900kVAR (in steps of 150 kVAR to 200kVAR each), as described in Key Note 1 on Sheet E5.2.	Dwg E5.2
Due to the complexity of the gear please consider extending the bid due date to provide a detailed and comprehensive bid.	The bid opening date for this project has been extended to April 5, 2022. Refer to Addendum 01.	N/A
Spec section 33 77 00 calls for an arc-resistant breaker section, confirm if the switchgear breakers to be direct vented into the walk-in enclosure (which requires >10ft ceilings)? Or do they want a Plenum (which requires an area designated for the blast zone and also my affect the environmental rating for the enclosure)?	No, both switchgear breakers should be vented outside the walk-in enclosure via plenum. Refer to Addendum 03 for relevant revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures.	Section 33 77 00
337700 2.05 in addenda-1. A remote metering cab w/ HMI is required. Please provide a schematic/ wiring diagram as to allow the manufacturers to build it correctly.	Contractor to provide schematic diagram for approval during equipment submittals, for communications and controls connection for shore power HMI interface from shore power transformer substation to walk-in enclosure using conduit pathways shown on Sheets E3.2, E3.5, E3.6, E4.1 and E4.2. Contractor also to provide schematic diagram for approval during equipment submittals, for communications connection between shore power and Port of Tacoma's existing EPMS server and WinPM software.	Section 33 77 00
Is there a specification for Metering / Power Monitoring and Control? I have attached the electrical specification listings and I do not see anything. The substation one-lines make reference to Siemens WINPM with note 8 on E5.1; note 4 on E5.2, etc – however, details on the meter and systems requirements are needed. To accurately quote this important part of the system, more information is needed. On previous Port jobs I have seen a 26 09 13 spec that addresses these requirements.	Refer to previous Addendum 02 for new Section 26 09 13 – Electrical Power Monitoring and Control.	Metering / Power Monitoring and Control

Specifications call for incoming meter to interface with existing Siemens WinPM power monitoring system. Is there a particular Siemens product that the Port of Tacoma requires?	Provide Siemens WinPM power monitoring system per Section 33 77 00 Article 1.02B.6. Also, refer to previous Addendum 02 for new Section 26 09 13 - Electrical Power Monitoring and Control.	Section 33 77 00 1.02.B.6
Is the the UL label required for the completed prefabricated enclosure / PDC in addition to the "Gold Label" from the State of Washington? (UL equipment will be utilized in the building of the equipment but typically the PDC does not have a UL label.)	Yes, walk-in enclosure to be UL labeled (by UL Rep) hired by and paid by Contractor, or a third party agency (UL approved agency) hired and paid by the Contractor, per Section 33 77 00, Article 1.02B.6, that states "The entire 15KV switchgear line up shall be provided within a UL labeled, walk-in, ANSI type 316 stainless steel, weather-tight enclosure ...".	Section 33 77 00 1.02.B.6
Specs indicate ¼" steel plate for the enclosure floor. Does the floor need to be 316SS similar to the base?	No. It is acceptable for the steel floor plate to be ASTM A36 steel plate with non-skid coating. Refer to Addendum 03 for relevant revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures.	Section 33 77 00 2.04.E
Does the 316SS exterior metal need to be painted?	No. Finishes are not required on stainless steel elements, as described in Article 2.04V of Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures.	Section 33 77 00 2.04.V
Specs indicate "15KV metal/clad, shore power switches". Typically, metal-clad does not apply to load break switches. Is the Port of Tacoma looking for a design where switches are installed in a metal-clad switchgear construction, basically like a draw out vacuum breaker in lieu of metal-enclosed construction? Can the contractor provide draw-out vacuum breakers in lieu of load break switches for shore power disconnects?	Shore power switches are to be metal enclosed, not metal clad. Refer to previous Addendum 02 for relevant revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures. Drawout vacuum breakers are not allowed. Contractor shall use load break switches per drawings and specs.	Section 33 77 00 2.05.A.4
What is the short circuit rating of vacuum breakers required? 15kV – 500MVA corresponds to a 15kV – 25kA RMS short circuit rated breaker. 25kA RMS short circuit breaker corresponds to a 65kA momentary breaker rating. The one like drawings E5.2 seem to indicate an available short circuit current of 4,760A but there is a leader note that has 43,000 AIC @ 6.6kV.	The switchgear is to be 500MVA short circuit rated per drawings and Section 33 77 00 Article 2.06A.1.	Section 33 77 00 2.06.A.1
Vacuum Circuit breakers shall each include a tripping power source without batteries? The one-line drawing indicates a 48VDC battery system in the PDC. The breakers could be provided with capacitive trip units, but they would not work with batteries. Please confirm battery control power source will be the 48VDC battery system.	Yes, battery control power source will be the 48VDC battery system. Refer to Addendum 03 for relevant revisions to Section 33 77 00 - Medium Voltage Shore Power Switches in Walk-In Enclosures.	Section 33 77 00 2.10.B
Harmonic filtering is mentioned but they do not give a tuning point or a harmonic current spectrum. For the amount of kVAR they need this will cost a fortune if it is indeed a harmonic filter bank. Do they have a tuning point or harmonic current spectrum?	This is a power factor correction bank. They do not need a tuning point or harmonic filtering. Refer to previous Addendum 01 for relevant revisions to Section 26 28 00 - MV Automatic Power Factor Correction Capacitors.	Harmonic Filtering