Request for Proposals (RFP) 2021-003847
Subsea Power Cable Manufacture, Delivery, and Installation: PacWave South

RFP #2021-003847

ADDENDUM NO. 4

ISSUE DATE: November 6, 2020

CONTRACT ADMINISTRATOR:
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This Addendum is hereby issued to inform you of the following revisions and or clarifications to the above-referenced RFP and/or the Contract Documents for the Project, to the extent they have been modified herein. Any conflict or inconsistency between this Addendum and the Solicitation Document or any previous addenda will be resolved in favor of this Addendum. Proposals shall conform to this Addendum. Unless specifically changed by this Addendum, all other requirements, terms and conditions of the Solicitation Document and or Contract Documents, and any previous addenda, remain unchanged and can be modified only in writing by OSU. The following changes are hereby made:

MODIFICATIONS:

Item 1 – RFP Section 1.2 'Schedule of Events' schedule of event dates is replaced with the following.

Schedule of Events:

October 15, 2020	Issue RFP
October 21, 2020	Non-Mandatory Pre-Proposal Conference at 8:00 a.m.
January 5, 2021	Question Deadline by 5:00 p.m.

(Continued on the next page)

January 12, 2021	Final Addendum Issued due 5:00 p.m.
February 5, 2021	Proposals due 2:00 p.m.

These dates are subject to change without notice

February 12, 2021	Notification of finalists
Week of February 22, 2021	Estimated Web-based Interviews with Selection Committee
March 10, 2021	Estimated Notice of Intent to Award
March 24, 2021	Estimated Contract Execution

QUESTIONS:

Item 2:

a. **Q: We are wondering can you please extent the bid due date to February 28th, 2021 for us to complete the proposal. We can guarantee that we will deliver the cable before/on schedule if we are rewarded.**

   A: See revised Schedule of Events included in this Addendum #4.

b. **Q: Will it be possible to have an extension to the Bid closing date of six weeks and an equal extension be granted to the Clarification deadline to make a more comprehensive and attractive offer?**

   A: See revised Schedule of Events included in this Addendum #4.

c. **Q: {Our company} does not foresee being able to meet the proposal due date of December 2nd, 2020. Our current workload has diverted personnel and assets necessary to construct a proposal for this effort in such short time. Nevertheless, we are confident in our ability to provide OSU with a desirable response by March 2nd, 2021. Despite this ninety (90) day extension to the present deadline, we have confirmed delivery dates with our suppliers and will be able to meet your current construction schedule. We request the courtesy of a response by close of business Monday November 2nd.**

   A: See revised Schedule of Events included in this Addendum #4.

d. **Q: Is burial of the BLMs and Driftwood shore site restoration part of the scope? If so, please specify the requirements.**

   A: The shore landing vault burial and Driftwood site restoration are NOT part of the scope. All construction activities associated with the shore landing vaults and shore landing conduits will be completed in 2021 under another contract. Vaults will be installed and closed, and the parking lot will be complete with pavement. On arrival for cable installation, operations will require a mobile crane or large forklift to remove concrete vault lids for cable installation access. The shore landing vault system is presently nearing completion of detailed design. Details will be provided shortly. Concrete lids will be approximately 7 x 12 feet, the vaults are configured to support cable quadrants up to 16-foot radius. Details of the vault system will be posted by addendum shortly. Vaults will include connection points for quadrant hold back rigging. For this scope of work, contractors will be responsible for repairing any damage to the parking lot, underground vaults etc.

e. **Q: Are all comments and proposed edits regarding the draft contract to be included in the maximum twenty-five page count for contractor's proposal, or is this information excluded from the page count**

and can be included as an appendix item?

A: Comments and proposed edits regarding the draft contract do NOT count towards the twenty-five page limit. Addendum 2, Page 4, Item T, Sentence: All comments and proposed edits to the terms of the sample contract must be submitted with the proposal, see Section 7.5 'Contract Award' subsection b for details.

f. Q: Will a Compliance Matrix in the proposal appendix be excluded from the twenty-five-page count?

A: RFP, page 24, item 10 Submission, Second Paragraph: Your proposal response must be contained in a digital document not to exceed twenty-five pages including the pricing sheet, pictures, charts, graphs, tables and text the proposer deems appropriate to be part of the review of the proposer's response. Accompanying documentation exempt from the twenty-five page proposal limit, includes: Cost tables, Transmittal letter, table of contents, front and back covers, blank section dividers, CVs or resumes of proposed key individuals, as well as any accompanying technical documentation, financial statements, sales literature, manufacturer brochures, manufacture warranties, or diagrams, will not be counted in the page limit. No supplemental information to the twenty-five-page proposal response or exempted accompanying documentation, will be accepted.

g. Q: Please provide lat/long for cores Arch-20, Arch-17, Arch-24, Arch-01, Arch-07, Site Core F, Arch-08, VC-P1-10. This is information is not present in the lat/long columns in the PacWave's Geotech master list spreadsheet, and the values in the "lat_over_4" and "lon_over4" columns in this spreadsheet (which we assumed to be decimal minutes over latitude 44 degrees and longitude -124 degrees) were off by a factor of 10 (with the exception of the longitude values for the first 8 locations, which were in decimal degrees).

A:

A-01: 44° 31.354', -124° 12.819' or, 44.5226°, -124.2137°
Consistent with master

A-07: 44° 31.609', -124° 12.864' or, 44.5268°, -124.2144°
(5268 incorrectly transcribed as 5628 in master)

A-08: 44° 33.767', -124° 13.695' or, 44.5628°, -124.2283°
Consistent with master

A-17: 44° 30.765, -124 10.961; or, 44.5128°, -124.1826°
Core not included in master; only analyzed for archaeological artifacts.

A-20: 44° 30.541', -124° 10.306' or, 44.5090°, -124.1718°
Core not included in master; only analyzed for archaeological artifacts.

A-24: 44° 31.652', -124° 11.498' or, 44.5275°, -124.1916°
Core not included in master; only analyzed for archaeological artifacts.

VC-P1-10: 44° 32.454, -124° 13.757' or, 44.5409°, -124.2293°
Core not included in master; Bent core-liner made core unextractable.

h. Q: Please provide the descriptions for the Site Core F_1st Attempt and VC-P1-10_2nd Attempt. PacWave's Geotech master list spreadsheet notes these cores were extracted at OSU, but information from core logging is not present.

A: These cores were collected using steel core tubes with acrylic liners. The cores were bent during the

core recovery, most likely during pull-out. We were unable to visually assess the cores through the steel tube, and were unable to non-destructively extract the core from the bent tube.

i. **Q: For core VC-P1-3/Arch-21, please clarify the material that was obtained. For example, did the core have 160 cm of sand and 30cm of cobble at the bottom of the core, for a total of 190cm of material retained?**

A: That is correct. A deep layer of cobble was found at the bottom of the core.

j. **Q: It is noted that all of the cores (12) collected with the Rossfelder P-5 had an unknown depth of penetration and retained between 45 cm and 140 cm of sediment. It is also noted that the cores (18) collected with the Gravity Solutions corer all recorded as having penetrated 300 cm, but only retained between 0 and 250cm of sediment, with an average retention of 110 cm of sediment (i.e. on average 63% or 190 cm of material is not accounted for). Per the field report, cores noted as having penetration monitored did not have a core cutter, but did have a HDPE core retaining system, so it is not clear how the material was not retained. Please provide additional information related to these cores and the material that was not retained and the method and system used to monitor core penetration. Is it thought the material that was not retained was compressed during collection, lost during recovery, and/or that the penetration measurements were not accurate? If the material was lost during recovery is it thought to have been lost from the bottom, top, or from both ends of the cores?**

A: The Rossfelder system did not have an independent means for assessing core penetration, while the Gravity Solutions system had a core-head pressure sensor that allowed estimation of penetration depth. In the deeper waters further offshore, neither core system was able to reliably penetrate through the clay layer underneath the overlying sand, and, when apparently able to do so, the core tube was often lost on pull-out. In the shallower waters where the sediments appeared to be less aggregated, the Gravity Solutions system usually indicated full penetration, and the Rossfelder system usually showed signs of this as well (sand on core head, material in check-valve at core-top, etc).

The corers all had either HDPE or stainless-steel core-retaining baffles (inverted 'finger cones') at the core leading edge, AND check valves at the core-head to limit fluidic washout. When we could observe core loss upon recovery, it was typically of material washing out the bottom of the core tube, although there were instances of material fouling the check valve at the upper end. The check valves were problematic with both systems, with evidence of suction intrusion of air as the core surfaced. Capturing coarse, loosely-aggregated sediments is challenging and this washout/core loss drove most of our collection failures.

k. **Q: The following corings positioned on side scan charts and others are not listed in the cores matrix , do they exist? : CP3-1,CP2-1,CP2-3,CP1-4,CP2-4,CP3-5,CP1-6,CP2-7,CP2-10**

A: No. Following Geophysical surveys and sediment-type classification, core targets were identified by 3U and our partner archaeologist. These were further prioritized during field operations. The 53 core attempts in the 'Final_CoringFieldReport' spreadsheet includes all the sites we attempted to sample, which includes 30 collected cores, two of which were not extractable, and a few of which were logged and described but used only for archaeological analysis.

l. **Q: Since this project is bidding in 2020 and the start of the project is not scheduled until 2022, will the contractor's employees be paid under the 2020 prevailing wage in 2022? What prevailing wage will the contractor use if it becomes a multi-year project?**

A: See Section 6 'Prevailing Wage' in the RFP for the applicable prevailing wage rates in use on this PacWave Project. These rates were put into effect when the Construction phase of this PacWave Project began and will continue to apply for term of the contract awarded from this RFP and for the duration of

this Project.

m. Q: Is the HDD contractor going to use the drill string as the conduit, "drill and leave" or will there be a separate steel pipe conduit left in the borehole?

A: The shore landing conduit will be new API 5 CT, 7-3/4" OD, 0.595" Wall, Grade P110. Casing joints will feature a matching ID such that there are no ID variations throughout the length. Minimum clear ID will be 6.435". The bores will be drilled using drill string. Drill string will be removed and the permanent shore landing conduit installed (pushed in) using the shore side drilling rig. Total length of conduit will vary between 5,200 and 5,500 feet. Shore landing conduit will be Epoxy painted to prevent corrosion and provide a smooth surface for cable installation. Conduits will be filled with dry air and vapor corrosion inhibitor on completion of installation. On arrival for cable installation, installers will find the offshore ends of the shore landing conduits buried approximately 3 feet below local seabed and sealed at the offshore end with a check valve. Conduits will be marked with a submerged, near bottom buoy and will initially be located by applying air pressure at the shore landing vault location. Installers are expected to dredge the immediate area around conduit exit, remove the end termination check valve, attach a flange fitting (via API Casing thread) to the end of conduit. Installers shall then attach a split bellmouth or roller assembly to accept cable. On completion of cable installation, installers shall attach cast iron split pipe to the conduit flange. Split pipe length shall be sufficient to protect pipe on exit from conduit, a minimum of 100 feet. Split pipe, and cable will then be jetted or dredged to a minimum depth of 3 feet (1 meter) following exit from shore landing conduit.

n. Q: Can you give us the specification for the HDD conduit (drill string or steel pipe)?

A: Please refer to question 'm' above.

o. Q: If the conduit is the drill string, will it have a variable ID (narrow at the connection joints and wider in the pipe body)?

A: ID is consistent, please refer to question 'm' above.

p. Q: The HDD drilling operations will take place in 2021 so how is the HDD conduit going to be left on the sea floor for operations starting one year later in 2022?
1. Blind Flange on end of conduit?
2. Marker buoy on end of conduit?
3.Will the offshore end of the HDD conduit be buried or exposed?
4. How many LF of conduit will be outside the exit hole?
5. Will a bellmouth be attached to the end of the HDD conduit?
6. Will the end of the HDD conduit have to be buried and/or stabilzed after the cable has been pulled in to the BMH?

A: Please refer to question 'm' above.

q. Q: Preliminary voltage drop calculations completed for 50mm2 conductors, 100A @ 30KVAC indicate that for cable lengths above 18km, the voltage drop will exceed 5%. Is a higher voltage drop acceptable? If not, can OSU accept a larger size conductor/larger size cable?

A: Understood. Proposers shall specify 50 mm^2 or 1/0 size conductors and provide performance analysis.

r. Q: Please provide the power factor for the electrical loads of 5MW at 30KV and 1 MW at 12.47KV.

A: Power factor of the system will vary. 85% worst case generation power factor should be assumed. It is

noted that this defines a maximum operating current of 114 amps vs. the 100 amp value originally specified.

s. Q: Is the Repair Procedure for the cable required as a deliverable to the RFP?

A: The first paragraph of 3.7.3 reads as follows: In order to support long term operation at the site, cable design shall include repair contingencies.
Responding vendors shall propose (and price separately) field repair kits and procedures recommended for each cable type specified. The actual repair procedure does not need to be included in the RFP. However, the proposal and associated pricing shall include allowance for development and delivery of an approved repair procedure and field repair materials as part of the scope of supply.

t. Q: Is the Type Test for the cable required as a deliverable to the RFP?

A: Type testing of proposed cable is not required prior to submission of the RFP. Proposals shall address type testing as part of the scope of supply and proposer pricing shall include this testing.

u. Q: Please provide the mentioned sections 3.8.3, 3.8.4 and 3.8.5. These sections are referenced but not included in the specification.

A: Question refers to Section 3.1, but the question appears to refer to section 3.3, specifically the following bullet items. The section references are incorrect and are shown corrected below:

* Tensile load and bending capacity suitable to meet all the following:

- Installation loads and conditions defined in section 3.7.2
- Cable construction suitable for a minimum of 10 recovery cycles of Offshore end as defined in section 3.7.4
- Tensile working load rating (no bending) > weight of 1,100 meters of cable in sea water. Reference pull in load requirements in section 3.7.5

v. Q: Is a public or private water source available near the BMHs that could be used during the pigging process?

A: Yes, fire hydrants are available on the west side of Highway 101, approximately 700 feet to the north and south of the entrance to Driftwood Park. There is also a water spigot located in the park with a flow rate of ~10-15 gpm.

w. Q: The pull-in sequence of events lists dredging (if required). Was dredging addressed in the permit application?

A: "Dredging" might be an incorrect term in this instance. Please reference Question 'm' for details of the conduit plan. Dredging is intended to reference diver operated tools required to expose the end of the conduit, expected to be buried up to 3 feet (1 meter) below the local seabed, consisting of loose sand. Diving operations shall expose the end of conduit for completion of cable pull in operations. It should also be noted that 4.8.1 mentions conduit exposure at the 10 meter contour. Design of the HDD project to install the conduits has progressed such that bore lengths have been extended in order to daylight the bores in 45 feet (14 meters) MLLW water depth to provide a more workable environment.

x. Q: What is the design distance between HDD bores at the offshore breakout?

A: The design bore plan is exit of all five bores at 300 +/- 40 feet apart. Details of the bore plan and exit

points have been modified relative to the coordinates published in the referenced installation specification. Details of the revised bore plan and exit coordinates are provided as an attachment to this addendum. These coordinates are preliminary and subject to change pending final design completion in November.

y. Q: Is the I.D. 6.5 inches consistently throughout the pipe?

A: Please refer to question 'm' above.

z. Q: Is this drill pipe to be drilled and left? If so, what is the type of drill pipe and the internal design of the collar joints (connections)?

A: Please refer to question 'm' above. A design drawing for the HDD installed pipe conduit and joints is forthcoming. ID will be consistent throughout the length.

aa. Q: How much of The Driftwood BMH lot Will be available for pull in operations?

A: The full parking lot at Driftwood will be available for pull in operation. The Park can be closed to vehicular traffic. Limited pedestrian access will need to be maintained at all times.

bb. Q: 0.34 ohm/km Maximum DC resistance at 20° C for 50sqmm condcutor is required. According to IEC 60228 class 2, the max value should be 0.387 ohm/km for 50sqmm. Please confirm that 0.34 ohm/km maximum DC resistance is required.

A: This value (0.34 Ohm/km) is in error. 0.387 Ohm/km per IEC 60288, Class 2 / Table 2 is the correct value for DC resistance at 20 deg. C vs. the value specified in sections 3.3 and 3.4.

cc. Q: Insulation shield shall consist of copper braid or helix applied copper wires and two layers of tinned copper tape, 0.13 mm or greater thickness; counter helix applied (50% overlap minimum).' Please clarify whether above clause means helix applied copper wires should be applied together with two layers of tinned copper tape which are overlapped each other. Generally, when copper wires applied, the upper copper tape is just one layer with gap to fix the wires. Only copper tape is applied alone, the tapes shall be overlapped. At the same time, please also clarify whether copper tape alone as shield can be acceptable.

A: Clause should read as follows: Each power conductor shall feature a metallic shield system external to the conductor insulation and semiconductive screen. Insulation shield shall consist of copper braid or helix applied copper wires and over two layers of tinned copper tape, 0.13 mm or greater thickness; counter helix applied (50% overlap minimum). The specification is intended to result in a robust metallic shield system suitable for the repeated handling operations associated with the final 3 km of cable at the offshore, dry mate connector end of the cable as described in section 3.7.4. Tape only solutions that otherwise meet the other specifications defined within would be acceptable over the remaining length of cable starting at 3 km from the dry mate connector to the termination at the Driftwood termination vaults.

dd. Q: 'Copper shield of each conductor shall be short circuit rated to a minimum of 3,000 amps (3.0 KA) for a minimum of 1 second duration, starting from a conductor operating temperature of 90 °C.' According to section 3.3 in page 10, Short circuit rating of 3.0 KA minimum for 1 second or higher is for conductor. However, single line to ground short circuit rating of 1.0 kA for 1 second minimum is required there. Please clarify the final requirement of short circuit current for conductor and metallic screen respectively.

A: Conductor shields shall be rated 3 KA for 1 second minimum with respect to sizing of shield copper

content and thermal rise. This could include fault scenarios internal to the cable within the shore landing vault. The 1 kA for 1 second rating in the bullet that follows is specifically intended to reflect maximum fault currents which would occur at the offshore end of the cable (over full cable length), which is the scenario that results in maximum shield voltage that might be experienced and specified to provide guidance for developing/specifying shield voltage control measures as discussed in detail in section 3.4.7.

ee. Q: The specification for the type test states "Testing shall demonstrate that water penetration is limited to 1 km or less over a 2-year period in water depths to 100 meters."
This requirement conflicts with Cigre 490. Cigre 490 requires that the longitudinal water penetration test shall be carried out for 10 days under specific water pressure to reflect installation water depth. Please advise if type test per Cigre 490 is acceptable.

A: The language in question shall remain "Testing shall demonstrate that water penetration is limited to 1 km or less over a 2-year period in water depths to 100 meters.". However, to clarify, the test plan shall "demonstrate" this through testing in accordance with Cigre 490. Please note that a water penetration rate of 1 km per 2 years is equivalent to 1.37 meters per day or 13.7 meters over a 10-day test. Relative to Cigre 490, section 8.7, both d1 and d2 shall be 13.7 meters unless it can be demonstrated that water penetration rate is non-linear.

ff. Q: For the offshore end of the cable at the dry mate connector, is it acceptable to provide a double armored design in order to meet the required 10 recovery cycles?

A: Yes, vendors are welcome to offer cable systems featuring different construction characteristics for each critical section (shore landing through conduit, primary static section and semi-dynamic offshore end) as a means to optimize system cost.

gg. Q: Can the cable marking tape inside the outer jacket be eliminated if marked on the external Jacket?

A: This would be acceptable pending proof that cable markings are legible after installation and during termination operations.

ii. Q: Could you provide the HDD drill profiles so we can perform pull calculation on our own?

A: Yes, a draft bore profile is provided as an attachment to this addendum. Significant variations are not expected, but a final bore plan will be published by the end of November.

hh. Q: After familiarizing our team with the details of this endeavor, and soliciting subcontractor input, we've determined that we will be unable to provide an accurate and complete bid by the December 16th, 2020 due date. Though your intent is to execute a contract by January 2021, it is our understanding that the performance of the work will not occur until 2022.

This letter is being written to request that the bid be postponed, or due date extended until the 2nd quarter of 2021. This extension would allow {Company Name} and all other potential contractors to solicit pricing from a larger pool of subcontractors, better forecast equipment availability, and detail methodology while still allowing ample time to perform the work prior to your forecast September 2022 completion milestone.

A: See revised Schedule of Events included in this Addendum #4.

REFERENCE/SUPPLEMENTAL MATERIALS:

Item 3:

(Continued on the next page)

Add draft bore plan as separate PDF attachment.

END OF ADDENDUM NO. 4