

Meeting with PDVSA – Barinas Project

TSD Review

DRAFT COPY

Date: 21 Sept. 2010

Attendees:

PDVSA – William Lamus, Carlos Rotondaro, Jose Valero

Derwick – Edgar Romero Omar Petit, Craig DeWees

General

It was agreed by all parties we will review the TSD, identify those items not included in the original scope of work. We will revise TSD to include those items and revise price accordingly to include those items. PDVSA would prefer a revised price over change orders.

- PDVSA is trying to secure 2 hectares to the north of the proposed FT-4 location.
- PDVSA informed Derwick/ProEnergy we need to include the cost to remove the existing diesel generators(16). We can remove the first set where the proposed FT-4 are going but can not remove the second set until we have a unit on line. This may pose a real space issue in trying to build the plant. May not need to remove the second set if we can secure the area north of the plant.
- Revised Price is to include the removal of the existing foundations required to be removed.
- Revised Price to include the removal of the oil laden soil. PDVSA has a location the remediated soil can be delivered. If we can not get a soil study done quickly, then we need to estimate approximate amount of soil to be removed.
- We need to revise actual schedule required to include the revisions of the TSD. Be as actual of date as possible. Show the expected time to get the units on line and identify those items which can be complete after units are running i.e large fuel tank can come on after units are running
- Need to include price for fencing the 2 hecter perimeter
- Confirm there are 2 – 100% centrifuges. PDVSA wants a 3rd centrifuge for additional back up. Must be new and not refurbished.
- **PDVSA wants to know the manufacture of any major equipment before placing order.**
- **PDVSA wants everything automated with very little operator involvement with normal operations of the plant.**

4 refurbished centrifuges are being provided.

automation consistent with an independent power facility is being provided.

Schedule – PDVSA does not have a set date to achieve. They want us to identify the dates for Unit #1 online, unit 2 online, BOP and plant completion.



Efficiency and consumption – PDVSA would like a GTPro run on the net MW and heat rate. General information only with no guarantees from Derwick / ProEnergy.

Documentation – Wants a copy of all major equipment documentation once procurement is complete.

TSD review

1.0 Introduction

- PDVSA asked about dual fuel – Response: Units are set up for Dual fuel but we only bid as liquid fuel. We were told Fuel Gas was not required. PDVSA agreed with this arrangement

Action: Modify TSD to state FT-4 units are set up for dual fuel or liquid only

- We indicate the plant is combine cycle and in fact it is only simple cycle

2.0 Balance of Plant

- 2.1.1 – Verify the exhaust stack configuration. We call out installing a 30ft stack for each unit. Confirm who is providing the stacks. Part of package sell or owner provided.
- 2.1.2 – Verify the difference where we call out a (2) 100% fuel treatment and (2) fuel treatment centerfuegies.
- 2.1.3 – we make redundant bullet point with the liquid fuel injection skids. It appears there is only one set of skids for each unit
- 2.1.4 – We did not include a water sample in section 12 because we did not have one from the owner. We have requested a water sample from PDVSA. They will provide a sample of the current supply. **PDVSA will request we provide new water well to meet the 14,000 GPD requirements. We need to include well in revised price**

2.1.5 Oily water separator

- The existing system is not operational. We must include a new oily water system. The real problem is finding a location for the new oily water tank. The waste water can go to the existing ditch. Need to address how to handle the oily waste. PDVSA said to leave the existing oily water separator system as is and do not touch it. Current system has numerous problems with rain water entering through pipes ect. **Oily water system is to be sized just for the FT-4 requirements only.**

2.1.6 Fire water system – must include a complete fire water system

2.1.7 – Instrument and Service air system

- No comments, all good and accepted

2.2.1 13.8 Kv system



- Clarify that the cable is included from the generator breaker to the GSU. I explained we did not know if this would be above or below ground until the final site layout is set. PDVSA would prefer underground
- PDVSA questions the Aux transformer of 750Kva size. We need to clarify the correct size. They think it is too big.

2.2.5 Plant area lighting

- PDVSA wants to include additional lighting for all areas we will have equipment. Need to add additional poles and bull horns with lights. Should move to a 4 light bullhorn and add 4 to 6 additional poles. Include in revised price.

2.2.10 Batteries / changers

- Need to change "note" to say P&W instead of GE

2.4.2 115 Kv SF6

- We need clarify between the TSD and one-line drawings. The TSD calls our contractor providing the breakers and air switches and the one lines notes owner provided. I have informed PDVSA we are including the breakers and air switches and will change drawings

2.7 Plant Building – Instead of including a new building they want everything to come back to existing control building. This is where the remote HMIs and BOP operator stations.

Additional items to add

we added a control room to the WTB as a no cost change which PDVSA approved.

- Add cost to remove the existing GTG turbine foundations
- Add black-start generator and all equipment required to start 1 unit. This should be sized to run one centrifuge.
- Add cost to clear and level the new 2 hectars area. This will include fencing the entire area. Fence will have 30cm of concrete at bottom with concrete corner columns and standard chain link with barb wire top.
- Add cost to remove the 16 existing generators and foundations, includes transformers and transmission lines. This includes the transportation to a location in Barinas.
- Add cost to remove existing tank foundation and build larger tank foundation.
- Add cost for larger raw fuel tank 2.5 M liters
- Add 3rd centrifuge for 3-100% instead of 2-100%
- Add cost to recuperate the existing fuel containment walls. ??? Need to discuss this internally. Need to correct the pipes going thru the existing walls. They have an 8" with a 4" running inside. This will allow a spill to escape thru the 8". Need to address a way to run pipe thru containment wall and make sure they are sealed.
- Add for a 2 truck off load station. Increase off-load pump to support 2 trucks at a time with 100% back-up (2-100%). Also increase off-load pipe size. This will be located north of the fuel containment area outside the plant

4 x 60% are being provided.

have provisions for 3 trucks.

- Add cost to refurbish existing tanks, clean, coat and test. Any repairs as required based on test. PDVSA indicated the tanks have been in service for over 25 years and need repaired.
- Add a set of CVT or CT and PT (115Kv) into the existing substation.
- Add a relay to tie into existing substation
- Add fire protection system – truck offload foam deluge, transformers deluge fuel tank area include tank wetting rings and BOP area with water cannons and hydrants
- Review and add lightening protection of the plant. Add towers and static lines to cover the plant????
- All substation controls must have remote operations in the main control room. This can be done via fiber to remote panels. Need to review and add cost as required.
- Add cost for storage fee for all major equipment and BOP equipment. This should be for minimum of 6 months. This will require double transportation of equipment and will need to include cost.
- Add contingency for any underground pipes ect. PDVSA (Carlos) wants to minimize any change orders.

existing

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