David Sellers

From: David Sellers
Sent: Saturday, June 19, 2021 11:33 AM
To: 'Michael Long'; Santiago Marin; Marie Panossian
Cc: Ryan Stroupe (R2S2@pge.com)
Subject: RE: EBCx Support Session
Attachments: Replace an Evaporator Pump v1.xlsx; Adding A VFD - Low Bid v1.xlsx; Adding A VFD v1.xlsx; Adding an Evaporator Pump v5.xlsx; Impeller Trim v1.xlsx

Your welcome,

As for your bid results, here is a summary table.

Bid Results - San Franciso, CA			
	Bidder 1	Bidder 2	Bidder 3
Impeller Trim	$2,941	$4,253	$4,466
Variable Speed Drive	$9,017	$17,657	$17,215
Redundant Right Sized Pump	$87,140	$95,854	$85,397
Replace Pump with Right Sized Pump	$16,242	$17,054	$30,280

I was thinking you were going to look at the cost to replace an existing pump with a more efficient one as well as the cost to add the more efficient pump as a totally separate, additional pump, so I gave you the bids for both options.

I have also included the line item breakdown on the bids (the attached files). Sometimes, if you ask for this, the contractor is reluctant to give them to you. That, right there, is a bad sign.

In any case, you will note that there is some significant bid spread between prices for the various options you wanted to explore, which is part of the lesson. This can happen because of a lack of specifics regarding what the contractor is supposed to price, but there are also other reasons it can happen.

- The bidders don't read the specifics and just toss a number out.
- The bidder unintentionally underbids the job because they do not fully appreciate what it will take to do the work.
- The bidder has a good relationship with the customer and has done work with them before, thus knows what they really want and includes the necessary work; for instance, in a color coded plant, painting the insulation. Unfortunately, if the necessary work is not detailed in the scope, other bidders who are less familiar and/or simply bid exactly what is asked for come in lower. So, a bidder can be high because they "know too much".

- The bidder wants the work and "buys" the job by underbidding it and hoping it leads to future work with the customer.

- The bidder intentionally underbids the work, planning to go after change-orders that exploit perceived loop-holes in the way the scope of work has been defined.

To my way of thinking, you would like to see the bids all be with-in 8-10% or so of each other. Usually (but not always) that is a reasonable indication that the contractors all saw the job the same way and are bidding the same scope. Subtle nuance; just because they saw the scope the same way does not mean the scope is the correct scope; more on that in the next exercise we will do.

Anyway, if there is a big spread, it is best to try to understand what it exists before you just go with the low bid and asking for line item breakdowns is a good way to accomplish that.

It could turn out that the low bid is exactly what you asked for and there are reasons the others are high. But it also could be that the low bid is the wrong number and things will "unwind" if you give the job to the low bidder. I have seen this manifest itself several ways.

- You actually get a good job because the contractor, while realizing they messed up, wants to build the relationship and do the right thing in terms of meeting the specified requirements, even though they missed something or misinterpreted something. In other words they "eat" the loss. Sometimes, you can meet them half way to help out. For instance, if your scope of work had them handing all of the draining, filling and venting of piping that needed to be done for a modification, you could offer to handle that if your crew had time.

- You get an inferior installation where corners are cut when the contractor realizes they missed something and is trying to cut their losses. I have seen contractors walk away from significant retentions that are being held to ensure that they complete the work because they can make more money moving on to the next job and abandoning the retention. For instance, your requests for them for a time they can come on site to support the commissioning process after the installation is done may go unanswered or may be answered with vague responses like "we will have to get back to you" and then they never do.

- You are bombarded with change orders and delays and the job ends up costing more; sometimes more than the high bid.

- The contractor goes bankrupt in the middle of the job because of how wrong they were; pretty severe but it happens, including to me on a project in the early 1980's. We were really worried that they had underbid the job and discussed our concerns with them and offered them an opportunity to withdraw their bid. But they insisted they could do the work for the value bid and meet all of our scope items because they were just smarter about it and harder working than the other bidders. But they were not it turned out.

In any case, I am providing the attached files to provide the additional information. Ultimately, I want to have actual "fake" letters and take-off sheets for the different bidders. But given all of the possible options and the four locations, it takes 92 similar but slightly different documents to do that

and I am not at that point in the development. So I am providing the spreadsheets behind the numbers, which should give you what you need to know to make your decisions.

A few things you need to know to assess the information in the attached spreadsheets.

1. To come up with the prices in various locations, I did the cost projections based on labor and materials in the San Francisco markets. In other words, there is not a take-off for adding a VFD in San Francisco and different ones for Sacramento, Honolulu, and St. Louis. Rather there is one take-off that I then "tweak" to provide (what I believe are) reasonable numbers for the other locations. Not a real issue for you folks since Ryan assigned San Francisco for your project location.

2. To create costs for other locations, ,I looked at things like the cost of living index, the purchasing power index and the RS Means City Index to adjust the San Francisco based values to the other locations.

3. Bid spreads are created in two different ways.

    a. One way is by doing a take-off that misses something that should have been included, so basically, the "wrong answer".

    b. The other is to take the result of the "correct" take-off and apply a multiplier to it in the range of +/-8 to 10%; in other words, create a spread on the "right answer" that would likely exist because of how different contractors "see" things. For instance, one contractor may use a low profit margin and contingency because they would like the work. Another might use a high profit margin and contingency because they want to be responsive, but if they actually got the job, it might cost them more to do it because of having to pay overtime or bring in additional help.

Here are what the files represent (Note that some of these spreadsheets have multiple tabs).

- Adding A VFD - Low Bid v1.xlsx and Adding A VFD v1.xlsx are the files behind the different VFD prices.

- Impeller Trim v1.xlsx is the file behind the impeller trim numbers.

- Replace an Evaporator Pump v1.xlsx is the file behind replacing an existing pump with the new, right sized pump.

- Adding an Evaporator Pump v5.xlsx is the price to install a new, more efficient pump in parallel with the existing evaporator pumps.

I think the attached will give you what you need to make your decisions, but let me know if you have more questions.

Meanwhile, I hope you get to enjoy the weekend a bit; we are off to a family birthday event down in Salem.

David
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A Field Guide for Engineers at http://av8rdas.wordpress.com/
View *The Other Side of Life* at https://av8rdaslife.wordpress.com/

From: Michael Long <gori_zoolander@hotmail.com>
Sent: Friday, June 18, 2021 2:39 PM
To: David Sellers <dsellers@facilitydynamics.com>; Santiago Marin <smarin@cimgroup.com>; Marie Panossian <mpanossian@exploratorium.edu>
Cc: Ryan Stroupe (R2S2@pge.com) <R2S2@pge.com>
Subject: Re: EBCx Support Session

Thank you!

From: David Sellers <dsellers@facilitydynamics.com>
Sent: Friday, June 18, 2021 12:57 PM
To: Santiago Marin <smarin@cimgroup.com>; Marie Panossian <mpanossian@exploratorium.edu>; Michael Long <gori_zoolander@hotmail.com>
Cc: Ryan Stroupe (R2S2@pge.com) <R2S2@pge.com>
Subject: RE: EBCx Support Session

Hi all,

I have been tied up with a class all day and probably will not get the pricing info to you until after it is over or tomorrow morning. The video processed thought and I will try to shoot that link out before we start again. It will be a OneDrive link.

David

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A Field Guide for Engineers at http://av8rdas.wordpress.com/
View *The Other Side of Life* at https://av8rdaslife.wordpress.com/

From: Santiago Marin <smarin@cimgroup.com>
Sent: Friday, June 18, 2021 11:04 AM
To: David Sellers <dsellers@facilitydynamics.com>; Marie Panossian <mpanossian@exploratorium.edu>; Michael Long <gori_zoolander@hotmail.com>
Cc: Ryan Stroupe (R2S2@pge.com) <R2S2@pge.com>
Subject: RE: EBCx Support Session

Can you guys share the link for yesterday meeting?

Thank you

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-----Original Appointment-----
From: David Sellers <dsellers@facilitydynamics.com>
Sent: Thursday, June 17, 2021 8:16 AM
To: Marie Panossian; Santiago Marin; Michael Long
Cc: Ryan Stroupe (R2S2@pge.com)
Subject: EBCx Support Session
When: Thursday, June 17, 2021 7:00 PM-8:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Just keeping you in the loop Ryan.

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