

David Sellers

From: David Sellers
Sent: Saturday, June 19, 2021 11:15 AM
To: Javier Navar Payan
Cc: Ali Shirazi; Winardi, Andreas; Stroupe, Ryan
Subject: RE: EBCx 16 pump optimization bids
Attachments: Adding A VFD v1.xlsx; Adding A VFD - Low Bid v1.xlsx; Impeller Trim v1.xlsx; Motor Replacement 10 hp.xlsx; Replace an Evaporator Pump v1.xlsx; Adding an Evaporator Pump v5.xlsx

Well Duh, I forgot the attachments.

Also, I forgot to mention one file. Specifically, Adding an Evaporator Pump v5.xlsx is the pricing for installing a completely separate pump in addition to the pumps that are already there.

Now you should have the information you need.

David

Senior Engineer
Facility Dynamics Engineering
Northwest Satellite Office
8560 North Buchanan Avenue
Portland, Oregon 97203
Office - 503-286-1494
Cell - 503-320-2630

DSellers@FacilityDynamics.com

<http://www.facilitydynamics.com/>

Visit my Commissioning Resources website at www.Av8rDAS.com

View *A Field Perspective On Engineering* and past posts from

A Field Guide for Engineers at <http://av8rdas.wordpress.com/>

View *The Other Side of Life* at <https://av8rdaslife.wordpress.com/>

From: David Sellers
Sent: Saturday, June 19, 2021 11:02 AM
To: Javier Navar Payan <jnavar@efficiencycx.com>
Cc: Ali Shirazi <alishirazi_ez@yahoo.com>; Winardi, Andreas <andreas.winardi@siemens.com>; Stroupe, Ryan <R2S2@pge.com>
Subject: RE: EBCx 16 pump optimization bids

Hi Javier,

I enjoyed working with you folks on the exercise. Here is the bid result summary for the items you asked for.

<i>Bid Results - St. Louis, MO</i>			
Item	Bidder 1	Bidder 2	Bidder 3
Impeller Trim	\$2,185	\$3,159	\$3,317
Variable Speed Drive	\$6,698	\$13,114	\$12,787
Redundant Right Sized Pump	\$64,723	\$71,196	\$63,429
Replace Pump with Right Sized Pump	\$12,064	\$12,667	\$22,490
Motor Change - 10 hp	\$1,717	\$2,413	\$2,204

I was not sure if you were asking for a pump that is installed in place of one of the existing pumps or a pump that was added in addition to the existing pumps, so I gave you the bids for both options.

Good "next move" to ask for breakdowns on the bids. Sometimes, if you do this, the contractor is reluctant to give them to you. That, right there, is a bad sign.

As you can see there is some significant bid spread between prices for the various options you wanted to explore. This is often there because of the lack of specifics. But in my experience, there are other reasons it can happen.

- The bidders don't read the specifics; basically they just toss a number out there.
- The bidder unintentionally underbids the job because they read the scope but 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. 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. In other words, 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. (Note that 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).

So, 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 in a bunch of ways.

- You actually get a good job because the contractor, while realizing the 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.
- 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.
- 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.

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.
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.
- Motor Replacement 10 hp.xlsx is the file behind providing a 10 hp VFD rated motor.

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.

David

Senior Engineer

Facility Dynamics Engineering

Northwest Satellite Office

8560 North Buchanan Avenue

Portland, Oregon 97203

Office - 503-286-1494

Cell - 503-320-2630

DSellers@FacilityDynamics.com

<http://www.facilitydynamics.com/>

Visit my Commissioning Resources website at www.Av8rDAS.com

View *A Field Perspective On Engineering* and past posts from

A Field Guide for Engineers at <http://av8rdas.wordpress.com/>

View *The Other Side of Life* at <https://av8rdaslife.wordpress.com/>

From: Javier Navar Payan <jnavar@efficiencycx.com>

Sent: Thursday, June 17, 2021 8:47 PM

To: David Sellers <dsellers@facilitydynamics.com>




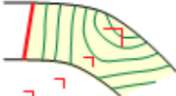
Cc: Ali Shirazi <alishirazi_ez@yahoo.com>; Winardi, Andreas <andreas.winardi@siemens.com>; Stroupe, Ryan <R2S2@pge.com>

Subject: EBCx 16 pump optimization bids

Hi David,

Thanks again for meeting with us last week. Could we please get 4 bids for the following:

- 1) Impeller trim from a 10-3/4in impeller to a 10 in impeller and installation cost (separate line item pricing)
- 2) ABB VFD 15HP 460V , AEGIS Shaft Grounding Ring (model #SGR-1.875-UKIT-1A4) and installation cost (separate line item pricing)
- 3) B&G pump and installation cost (separate line item pricing) .See below for model and specs

Curve	Pump Series ▾	Pump Size ▾	Pump PLEV _v (%) ▾ 	Pump Duty Point EFF (%) ▾ 	Duty Point (BHP) ▾ 	Pump Speed (RPM) ▾	Impeller ▾	NPSH _r (ft) ▾	M
	e-1510	6BD	79.9	85.9	9.03	1126	9.375 in	7.98	

4) 10HP motor 460V, 1200 RPM NEMA premium efficiency with shaft grounding ring.

Thank you,
Javier

Javier Navar Payan, MSME, PE, CEM, BECxP, CxA+BE
CEO/Principal Engineer
jnavar@efficiencycx.com
 651-706-5329
www.efficiencycx.com
Efficiency Commissioning LLC



Confidentiality Statement: This email, including attachments, may include confidential and/or proprietary information and may be used only by the person or entity to which it is addressed. If the reader of this email is not the intended recipient or his or her agent, the reader is hereby notified that any dissemination, distribution or copying of this email is prohibited. If you have received this email in error, please notify the sender by replying to this message and deleting this email immediately.