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6/28/2022

Charley Toppino & Sons, Inc.
P.O. Box 787
Key West, Florida 33041

Aeration System and Electrical Switchgear
B&V Project 199322
B&V File 60.3200

Attention: Carli Bernard

RFI: **016**

Reviewed by: David Garcia

Request: Question from the contractor (taken from the file provided).

1) Some of the existing loads are not included in the New Layout of SWBD6 (on E-07 or Eaton's Submittal).
Loads/buckets missed on one-line drawings and submittal: 8CB1B, 8CB1B, 6MTS1, FRONT GATE. After speaking with Dan (Plant Operator) and Ian (City of Key West) these loads are crucial to operation the plant and need to be incorporated into the New Layout of SWBD6.

2) Some of the existing loads have smaller frames/breaker/plugs than what is shown for fabrication of the new Switchgear.
Please advise if the new one-line is all that is needed and is properly sized or if changes need to be incorporated into the fabrication of the new SWBD6 Switchgear.

EOR's Responses:

1) **Include 8CB1A, 8CB1B, 6MTS1, and FRONT GATE to the lineup of the new switchboard using the breakers size and locations as shown in RFI 16.**

2) **Breakers in the new switchgear should match the size of the existing breakers as shown in RFI 16.**

   Breaker for 6MCC5 does not need to be fabricated. Per Key West comments, this breaker should become a spare breaker.

   Load study created for 6MCC8 shows a total connected load of 506A and running load approximately 80% of connected load. Please provide 600A breakers for 6MCC8A and 6MCC8B.

Copy Load Study

BLUE HIGHLIGHTED AREA FOR INPUT DATA

EQUIPMENT NAME	LOAD TYPE	LOAD	PF	DEM FACT	CONNECTED KW-C	CONNECTED KVAR-C	CONNECTED KVA-C	CONNECTED AMPS-C	RUNNING KW-R	RUNNING KVAR-R	RUNNING KVA-R	RUNNING AMPS	FE CE
NEW EQUIPMENT						0.0	0.0	0.00	0.0	0.0	0.0	0.00	
HIGH PRESSURE WATER PUMP	MOTOR	40.00	0.86	1.0	31.74	18.8	36.9	52.00	31.7	18.8	36.9	52.00	
FILTER INFLUENT PUMP	AFD	60.00	0.95	1.0	60.28	19.8	63.5	79.64	60.3	19.8	63.5	79.64	
BACKWASH SLUDGE PUMP	MOTOR	10.00	0.84	1.0	8.29	5.4	9.9	14.00	8.3	5.4	9.9	14.00	
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BACKWASH SLUDGE PUMP	MOTOR	10.00	0.84	0.0	8.29	5.4	9.9	14.00	0.0	0.0	0.0	0.00	
DRAIN PUMP	MOTOR	15.00	0.83	1.0	12.16	8.2	14.7	21.00	12.2	8.2	14.7	21.00	
EFFLUENT FILTER MECHANISM	MOTOR	0.75	0.65	1.0	0.73	0.8	1.1	1.60	0.7	0.8	1.1	1.60	
EFFLUENT FILTER MECHANISM	MOTOR	0.75	0.65	1.0	0.73	0.8	1.1	1.60	0.7	0.8	1.1	1.60	
FILTER INFLUENT PUMP	AFD	60.00	0.95	1.0	60.28	19.8	63.5	79.64	60.3	19.8	63.5	79.64	
HIGH PRESSURE WATER PUMP	MOTOR	40.00	0.86	1.0	31.74	18.8	36.9	52.00	31.7	18.8	36.9	52.00	
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DRAIN PUMP	MOTOR	15.00	0.83	1.0	12.16	8.2	14.7	21.00	12.2	8.2	14.7	21.00	
EFFLUENT FILTER MECHANISM	MOTOR	0.75	0.65	1.0	0.73	0.8	1.1	1.60	0.7	0.8	1.1	1.60	
EFFLUENT FILTER MECHANISM	MOTOR	0.75	0.65	1.0	0.73	0.8	1.1	1.60	0.7	0.8	1.1	1.60	
6TX8	KVA	30.00	0.80	1.0	24.00	18.0	30.0	37.65	24.0	18.0	30.0	37.65	
						0.0	0.0	0.00	0.0	0.0	0.0	0.00	
						0.0	0.0	0.00	0.0	0.0	0.0	0.00	
						0.0	0.0	0.00	0.0	0.0	0.0	0.00	
TOTAL BUS LOADS					361.9	177.7	403.1		345.3	167.0	383.6		

CONNECTED FLA		506.0	**P.F** 0.898
RUNNING FLA		481.4	**P.F.** 0.900
MAX CB	600		
MAIN SERVICE CABLE	6-500KCMIL,2#2/0N,(2)3"		
MAIN FEEDER CABLE	6-500KCMIL,2#1/0G,(2)3"		

NOTES
1. Calculations are based on 460 volts, 3 phase.
2. Lookup data valid through 500 hp. Manual inputs are required above 500 hp.
3. Motor FLA based on NEC, not calculated values.

... | COVER SHEET | 6SWBD1 | 6MCC6 | 6MCC7 | 10MCC1-2 | **6MCC8** | 2MCC1A-1B | 6MCC4A-4B | 10SWBD | LOOKUP DATA | ⊕

Sincerely,

BLACK & VEATCH CORPORATION

Pablo Gala Serra P.E.
Engineering Manager