



ENGINEERED PUMP SERVICES, INC.

624 Perkins Drive · Mukwonago, WI 53149-1454
(262) 363-9002 · (800) 657-0845 · fax (262) 363-9013
www.epspumps.com · email: eps@epspumps.com

CLOSING REPORT

CUSTOMER	: East Kentucky Power Cooperative	REPORT DATE	: 01/08/21
PLANT NAME	: Spurlock Generating Station	REPORT NO.	: 56261-CR1
CITY/STATE	: Maysville, Kentucky	CUST. ORDER	: EKPC- 0000138153
EQUIPMENT	: 17" MQX1H5-6	COPY	: Eddy Meek
SERVICE	: Condensate Water	FILE	: 56261
MANF.	: Byron Jackson	PAGE	: 1 of 2
SERIAL NO.	: Unit # 1		

I. SUMMARY OF REPAIRS AND ASSEMBLY

The subject pump arrived at EPS on 03/06/20 for disassembly, cleaning, and inspection. Inspection report 56261-IR1, repair specification 56261-RS1, and final repair quotation 66623-Q2 were sent to Spurlock on 03/23/20. Approval to proceed with the recommended repairs was immediately received in order to meet the required outage timeline for unit #1.

There was one setback that occurred during the course of the project. The 1st stage casing assembly was clearly damaged beyond repair and needed to be replaced. The casting for this component is somewhat difficult to procure, and our typical vendor for this type of component could not meet the required timeline. As a contingency, we found a rapid prototype vendor who could provide us a casting with a shorter lead time. Overall, the final product was acceptable, but it did add about a week to the overall lead time and ended up being the critical path for the overall repair.

The pump was completely repaired and rebuilt in accordance with EPS specification 56261-RS1; the total indicated runouts of the new shafts were all under .0015", and each impeller turn runout was under .0015". The final float of the completed assembly was .920", and the pump spun freely when lifted. Apart from the delay previously mentioned, there were no issues with the pump repair or assembly. The completed pump assembly was returned to Spurlock on 05/06/20.

Overall, the impellers and casings on this pump seem to be in better condition than many others of the make and model that we have repaired. The base materials (leaded bronze and cast iron) are still a concern, but this pump should be able to go through at least one more duty cycle with only a standard overhaul.

BY: *Aaron Stull*
Aaron Stull

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II. SUMMARY OF FITS AND CLEARANCES							
All Impellers	Fit Bore	2.700	2.701	Impeller Retainers	Fit Bore	2.702	2.703
Shaft	Fit Turn	2.698	2.699	Shaft	Fit Turn	2.698	2.699
Resulting Fit		.001	.003	Resulting Fit		.003	.005
Design Fit		.001	.003	Design Fit		.004	.006
Suction Bell Ring	Clr. Bore	11.264	11.266	Series Case Ring	Clr. Bore	9.250	9.251
1st Stage Impeller	Clr. Turn	11.249	11.250	Series Impeller	Clr. Bore	9.235	9.236
Resulting Clr.		.014	.016	Resulting Clr.		.014	.016
Design Clr.		.014	.016	Design Clr.		.014	.016
Lower Bearings	Clr. Bore	2.707	2.708	Upper Bearings	Clr. Bore	2.444	2.445
Shaft	Clr. Turn	2.698	2.699	Shaft	Clr. Turn	2.436	2.437
Resulting Clr.		.008	.010	Resulting Clr.		.007	.009
Design Clr.		.008	.010	Design Clr.		.007	.009
Element Registers	Fit Bore	14.365	14.366	Lower Column	Fit Bore	14.391	14.392
Element Registers	Fit Turn	14.363	14.364	Upper Casing	Fit Turn	14.389	14.390
Resulting Clr.		.001	.003	Resulting Clr.		.001	.003
Design Clearance		.001	.003	Design Clr.		.001	.003
Upper Registers	Fit Bore	13.016	13.017	Discharge Head	Fit Bore	5.734	5.735
Upper Registers	Fit Turn	13.014	13.015	Stuffing Box	Fit Turn	5.732	5.733
Resulting Fit		.001	.003	Resulting Clr.		.001	.003
Design Fit		.001	.003	Design Clearance		.001	.003



Photo 1: Closeup Of Typical Impeller Stage



Photo 2: Pump Assembly Progress