

# Work Order Details

## SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)

**Asset:** SP5372 Unit 03 Boiler Feedwater Pump Boiler Feed Pump 3B  
**Location:** SP03.WA.FW.S Unit 03 Boiler Feedwater Pump Boiler Feed Pump 3B

**Model:**  
**Product Version:**

<b>Sched Start:</b>	4/17/2024	<b>Business Unit:</b>	SPUR-Spurlock Station	<b>Job Plan:</b>	
<b>Sched Finish:</b>	4/17/2024	<b>Priority:</b>	3 (Low - Routine)	<b>Supervisor:</b>	
<b>Target Start:</b>	3/9/2024	<b>Work Type:</b>	CD-Condition Directed	<b>Lead:</b>	03715
<b>Target Finish:</b>		<b>Status:</b>	WCMP	<b>Vendor:</b>	0000014125
<b>Actual Start:</b>	2/6/2024	<b>Parent:</b>		<b>Reported by:</b>	02289
<b>Actual Finish:</b>	5/13/2024	<b>Failure Class:</b>		<b>Reported by:</b>	Jody McCord
<b>Report Date:</b>	11/28/2023	<b>Problem Code:</b>		<b>Defect Tag:</b>	NO
<b>Craft:</b>	M3M4	<b>PM Number:</b>		<b>Commodity:</b>	
<b>Unit:</b>	3	<b>GL Account:</b>	512000~SP03~400~3000~03200~OVRHL~00~00000~00000	<b>Comdty Grp:</b>	
<b>Outage:</b>	Outage	<b>UNID:</b>		<b>Classification:</b>	

Tasks									
WO Task	Task ID	Craft	Description	Status	Sched Start	Sched Finish	Est Hours	Actual Start	Actual Finish
SP223741	5	M3M4	*PRE - stage tools, work table, parts containers, coupling removal tooling, volute cradle & spare/rebuilt volute	WCMP	4/17/24	4/17/24	0		
<i>Instructions:</i>									
SP223742	10	INSUL	Remove insulation blankets from 3B BFP for volute replacement	WCMP	4/17/24	4/17/24	0		
<i>Instructions:</i>									
SP223743	20	INS	Remove instrumentation equipment from 3B BFP barrel heads & piping for volute replacement	WCMP	3/9/24	3/9/24	0		
<i>Instructions:</i>									
SP223744	30	M3M4	Replace 3B BFP for volute	WCMP	4/17/24	4/19/24	0		

# Work Order Details

## SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)

Tasks										
WO Task	Task ID	Craft	Description	Status	Sched Start	Sched Finish	Est Hours	Actual Start	Actual Finish	

**Instructions:**

SP223745	40	INS	Re-install instrumentation equipment removed from 3B BFP barrel heads & piping for volute replacement	WCMP	3/11/24	3/11/24	0			
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**Instructions:**

SP223746	50	INSUL	Re-install insulation blankets removed from 3B BFP for volute replacement	WCMP	4/17/24	4/17/24	0			
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**Instructions:**

SP223747	60	M3M4	*POST - prepare volute removed for shipment to EPS shop for rebuild	WCMP	4/17/24	4/17/24	0			
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**Instructions:**

Planned Labor										
Task ID	Craft	Skill Level	Labor	Vendor	Contract	Qty	Hours	Rate	Line Cost	
5	M3M4					2	08:00			
10	INSUL					2	03:00			
20	INS					2	04:00			
30	M3M4					3	50:00			
40	INS					2	06:00			
50	INSUL					2	05:00			
60	M3M4					2	05:00			
Total Planned Labor:										

Planned Services										
Task ID	Service Item	Description	Vendor	Qty	Unit Cost	Line Cost				
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3625	1.00	3625.00				
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	26000	1.00	26000.00				
Total Planned Services:						29625.00				

# Work Order Details

**SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)**

Actual Labor								
Task ID	Craft	Skill Level	Labor	Vendor	Contract Num	Regular Hours	Premium Hours	
20	ALL		SP_TL_RG			00:00	00:00	
20	INS		03255			02:00	00:00	
20	INS		02585			02:00	00:00	
40	ALL		SP_TL_RG			00:00	00:00	
40	INS		03255			04:00	00:00	
	M1M2		03954			08:00	02:00	
	M3M4		02301			08:00	02:30	
	ALL		SP_TL_OT			00:00	00:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			08:00	02:00	
	ALL		SP_TL_RG			00:00	00:00	
	M1M2		03955			00:00	10:00	
	M1M2		03955			08:00	02:00	
	M1M2		03955			08:00	02:00	
	ALL		SP_TL_RG			00:00	00:00	
	ALL		SP_TL_RG			00:00	00:00	
	M1M2		03955			08:00	02:00	
	ALL		SP_TL_OT			00:00	00:00	
	M1M2		03955			05:00	00:00	
	M3M4		03715			08:00	02:00	
	M3M4		03715			08:00	02:00	
	ALL		SP_TL_OT			00:00	00:00	
	ALL		SP_TL_RG			00:00	00:00	
	M3M4		03715			08:00	02:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			08:00	02:00	
	M1M2		03954			08:00	02:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			00:00	10:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			08:00	00:00	
	ALL		SP_TL_OT			00:00	00:00	
	M1M2		03955			08:00	00:00	

# Work Order Details

## SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)

Actual Materials						
Task ID	Item Description	Binum	Qty	Unit Cost	Line Cost	
191301504	Gasket, Spiralwound, 316SS, Flexicarb, 1", 150#	SWHSA-FGC-00A-001	2	3.99	7.98	
191301505	Gasket, Spiralwound, 316SS, Flexicarb, 1", 300-600#	SWHSA-FGC-00A-002	2	1.96	3.91	
191303504	Gasket, Spiralwound, 316SS, Flexicarb, 2-1/2", 150# (W/Flang	SWHSA-FGC-00A-001	4	3.90	15.61	
50690	Volute	SWHS4-W4-LW-02A	1	0.00	0.00	
35775	O-Ring, Volute to Barrel, 1/4"Thk	SWHSA-00D-D04-003	1	190.43	190.43	
191302003	Gasket, Spiralwound, 316SS, Flexicarb, 1-1/4", 2500#	SWHSA-FGC-00C-001	1	9.33	9.33	
50690	Volute	SWHS4-W4-LW-02A	1	0.00	0.00	
35781	O-Ring, Cover to Volute, 1/4"Thk	SWHSA-00D-D03-004	1	25.43	25.43	
Total Actual Materials:					252.69	

Actual Services						
Task ID	Service Item	Description	Vendor	Qty	Unit Cost	Line Cost
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00

# Work Order Details

**SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)**

Actual Services						
Task ID	Service Item	Description	Vendor	Qty	Unit Cost	Line Cost
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
Total Actual Services:						385962.36

Log			
Date	Class	Created By	Description
11/29/2023 04:12:10 PM	WORKORDER	JODYMCCO Jody McCord	INFO

Spare BFP Volute ID# 50690 located in WHS4 W4-LW-02A. Attached to WO are the following documents: U3 BFP Coupling Removal & Installation Directions, U3 BFP Coupling Drawings, U3 BFP drawing & OEM parts listing, U3 BFP Inventory Parts Listing, & Parts used from stock on 4B volute replacement in 2019.

05/13/2024 11:02:16 AM WORKORDER 02301  
Cody Dicken

Volute replaced by EKPC and EPS rep. Report following. Alignment completed.  
Chris, Sizemore, Aaron, George

**Asset:** SP5372 Unit 03 Boiler Feedwater Pump Boiler Feed Pump 3B  
**Location:** SP03.WA.FW.SI Unit 03 Boiler Feedwater Pump Boiler Feed Pump 3B

**Model:**  
**Product Version:**

<b>Sched Start:</b>	4/17/2024
<b>Sched Finish:</b>	4/17/2024
<b>Target Start:</b>	3/9/2024

<b>Business Unit:</b>	SPUR-Spurlock Station
<b>Priority:</b>	3 (Low - Routine)
<b>Work Type:</b>	CD-Condition Directed

<b>Job Plan:</b>	
<b>Supervisor:</b>	
<b>Lead:</b>	03715

# Work Order Details

## SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)

<b>Target Finish:</b>		<b>Status:</b>	WCMP	<b>Vendor:</b>	
<b>Actual Start:</b>	2/6/2024	<b>Parent:</b>		<b>Reported by:</b>	02289
<b>Actual Finish:</b>	5/13/2024	<b>Failure Class:</b>		<b>Reported by:</b>	Jody McCord
<b>Report Date:</b>	11/28/2023	<b>Problem Code:</b>		<b>Defect Tag:</b>	NO
<b>Craft:</b>	M3M4	<b>PM Number:</b>		<b>Commodity:</b>	
<b>Unit:</b>	3	<b>GL Account:</b>	512000~SP03~400~3000~03200~OVRHL~00~00000~00000	<b>Comdty Grp:</b>	
<b>Outage:</b>	Outage	<b>UNID:</b>		<b>Classification:</b>	

### Tasks

WO Task	Task ID	Craft	Description	Status	Sched Start	Sched Finish	Est Hours	Actual Start	Actual Finish
SP223741	5	M3M4	*PRE - stage tools, work table, parts containers, coupling removal tooling, volute cradle & spare/rebuilt volute	WCMP	4/17/24	4/17/24	0		

**Instructions:**

SP223742	10	INSUL	Remove insulation blankets from 3B BFP for volute replacement	WCMP	4/17/24	4/17/24	0		
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**Instructions:**

SP223743	20	INS	Remove instrumentation equipment from 3B BFP barrel heads & piping for volute replacement	WCMP	3/9/24	3/9/24	0		
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**Instructions:**

SP223744	30	M3M4	Replace 3B BFP for volute	WCMP	4/17/24	4/19/24	0		
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**Instructions:**

SP223745	40	INS	Re-install instrumentation equipment removed from 3B BFP barrel heads & piping for volute replacement	WCMP	3/11/24	3/11/24	0		
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**Instructions:**

# Work Order Details

**SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)**

Tasks										
WO Task	Task ID	Craft	Description	Status	Sched Start	Sched Finish	Est Hours	Actual Start	Actual Finish	
SP223746	50	INSUL	Re-install insulation blankets removed from 3B BFP for volute replacement	WCMP	4/17/24	4/17/24	0			

**Instructions:**

SP223747	60	M3M4	*POST - prepare volute removed for shipment to EPS shop for rebuild	WCMP	4/17/24	4/17/24	0			
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**Instructions:**

Planned Labor										
Task ID	Craft	Skill Level	Labor	Vendor	Contract	Qty	Hours	Rate	Line Cost	
5	M3M4					2	08:00			
10	INSUL					2	03:00			
20	INS					2	04:00			
30	M3M4					3	50:00			
40	INS					2	06:00			
50	INSUL					2	05:00			
60	M3M4					2	05:00			
Total Planned Labor:										

Planned Services										
Task ID	Service Item	Description	Vendor	Qty	Unit Cost	Line Cost				
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3625	1.00	3625.00				
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	26000	1.00	26000.00				
Total Planned Services:						29625.00				

Actual Labor										
Task ID	Craft	Skill Level	Labor	Vendor	Contract Num	Regular Hours	Premium Hours			
20	INS		02585			02:00	00:00			
20	ALL		SP_TL_RG			00:00	00:00			
20	INS		03255			02:00	00:00			
40	ALL		SP_TL_RG			00:00	00:00			
40	INS		03255			04:00	00:00			

# Work Order Details

**SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)**

Actual Labor								
Task ID	Craft	Skill Level	Labor	Vendor	Contract Num	Regular Hours	Premium Hours	
	M1M2		03954			08:00	02:00	
	M3M4		02301			08:00	02:30	
	ALL		SP_TL_OT			00:00	00:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			08:00	02:00	
	ALL		SP_TL_RG			00:00	00:00	
	M1M2		03955			08:00	02:00	
	M1M2		03955			00:00	10:00	
	ALL		SP_TL_RG			00:00	00:00	
	ALL		SP_TL_RG			00:00	00:00	
	M1M2		03955			08:00	02:00	
	ALL		SP_TL_OT			00:00	00:00	
	M1M2		03955			05:00	00:00	
	M3M4		03715			08:00	02:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			08:00	02:00	
	ALL		SP_TL_OT			00:00	00:00	
	ALL		SP_TL_RG			00:00	00:00	
	M3M4		03715			08:00	02:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			08:00	02:00	
	M1M2		03954			08:00	02:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			00:00	10:00	
	M1M2		03955			08:00	02:00	
	M3M4		03715			08:00	00:00	
	ALL		SP_TL_OT			00:00	00:00	
	M1M2		03955			08:00	00:00	

Actual Materials					
Task ID	Item Description	Binum	Qty	Unit Cost	Line Cost
191301504	Gasket, Spiralwound, 316SS, Flexicarb, 1", 150#	SWHSA-FGC-00A-001	2	3.99	7.98
191301505	Gasket, Spiralwound, 316SS, Flexicarb, 1", 300-600#	SWHSA-FGC-00A-002	2	1.96	3.91
191303504	Gasket, Spiralwound, 316SS, Flexicarb, 2-1/2", 150# (W/Flang	SWHSA-FGC-00A-001	4	3.90	15.61
50690	Volute	SWHS4-W4-LW-02A	1	0.00	0.00



# Work Order Details

## SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)

Actual Materials						
Task ID	Item Description	Binum	Qty	Unit Cost	Line Cost	
35775	O-Ring, Volute to Barrel, 1/4"Thk	SWHSA-00D-D04-003	1	190.43	190.43	
191302003	Gasket, Spiralwound, 316SS, Flexicarb, 1-1/4", 2500#	SWHSA-FGC-00C-001	1	9.33	9.33	
50690	Volute	SWHS4-W4-LW-02A	1	0.00	0.00	
35781	O-Ring, Cover to Volute, 1/4"Thk	SWHSA-00D-D03-004	1	25.43	25.43	
Total Actual Materials:					252.69	

Actual Services						
Task ID	Service Item	Description	Vendor	Qty	Unit Cost	Line Cost
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Dismantle, clean, inspect & re	0000014125	3,625	0.11	391.56
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed pump volute replacement starting on 3/13/24	0000014125	12,241.02	1.00	12241.02
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Field service rep for 3B feed	0000014125	0	0.00	-244.82
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		Dismantle, clean, inspect & report on 3B feed pump volute at EPS shop	0000014125	3,625	1.00	3625.00
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00
		ECO for rebuild of 3B Boiler Feed Pump Volute	0000014125	77,354	1.00	77354.00
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30

## Work Order Details

**SP223740: U3 BFP 3B volute replacement (EPS rep onsite 3/13/24)**

Actual Services						
Task ID	Service Item	Description	Vendor	Qty	Unit Cost	Line Cost
		ECO for rebuild of 3B Boiler F	0000014125	0	0.00	301.30
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Dismantle, clean, inspect & re	0000014125	0	0.00	14.12
		Field service rep for 3B feed	0000014125	26,000	0.11	2808.41
Total Actual Services:						385962.36

Log			
Date	Class	Created By	Description
11/29/2023 04:12:10 PM	WORKORDER	JODYMCCO Jody McCord	INFO

Spare BFP Volute ID# 50690 located in WHS4 W4-LW-02A. Attached to WO are the following documents: U3 BFP Coupling Removal & Installation Directions, U3 BFP Coupling Drawings, U3 BFP drawing & OEM parts listing, U3 BFP Inventory Parts Listing, & Parts used from stock on 4B volute replacement in 2019.

05/13/2024 11:02:16 AM WORKORDER 02301  
Cody Dicken

Volute replaced by EKPC and EPS rep. Report following. Alignment completed.  
Chris, Sizemore, Aaron, George

Report EK\_woprint.rptdesign



## **ENGINEERED PUMP SERVICES, INC.**

624 Perkins Drive ! Mukwonago, WI 53149-1454  
(262)363-9002 ! (800)657-0845 ! fax (262)363-9013  
[www.epspumps.com](http://www.epspumps.com) ! email: [eps@epspumps.com](mailto:eps@epspumps.com)

### **CLOSING REPORT**

<b>CUSTOMER</b>	: East Kentucky Power Cooperative	<b>REPORT DATE</b>	: 12/23/24
<b>PLANT NAME</b>	: Spurlock Station	<b>REPORT NO.</b>	: 57566-CR1
<b>CITY / STATE</b>	: Maysville, Kentucky	<b>CUST. ORDER</b>	: SP13068
<b>EQUIPMENT</b>	: 8 X 10 X 14 HDB 11-Stage	<b>COPY</b>	: Jody McCord
<b>SERVICE</b>	: Boiler Feed	<b>FILE</b>	: 57566
<b>MANF.</b>	: Byron Jackson	<b>PAGE</b>	: 1 of 5 total pages
<b>SERIAL NO.</b>	: Unit 3		

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The pump was repaired per the EPS Repair Specification 57566-RS1, which was dated 07/26/24. A copy of that report is attached at the back of this closing report.

The pump was assembled, prepped for shipment and shipped back to Spurlock Station in the first week of October, 2024.

The rotating element was dynamically balanced as an assembly. The results of that operation are located on pages 2 and 3 of this report.

The assembly data of the spare element was recorded and is as follows:

Total Axial Float, both halves assembled: .304"

Final lift and swing records:

TE Lift: .017"  
TE Swing: .012" (suspended at .010" "up")  
CE Lift: .015"  
CE Swing: .012" (suspended at .008" "up")

Eye side case rings set for .014 to .016" clearance with Impeller eye turns.

Hub side and 1-2 stage pieces set for .014-.016" clearance to impeller hub turns and 1-2 sleeve.

Center stage piece set for .014 to .016" clearance to the 6<sup>TH</sup> and 11<sup>TH</sup> stage hub turns.

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BY:

**Richard P. Laux (for Aaron Stull)**

# CLOSING REPORT

CUSTOMER : EKPC-Spurlock Station  
REPORT NO. : 57566-CR1

REPORT DATE : 12/23/24  
PAGE NO. : 2 of 5



## CEMB



Costruzioni Eletto Meccaniche ing. Buzzi & C. S.p.a.

## Balancing Certificate

Customer : XYZ S.p.A		Date : 09/28/2024 05:50:49
Prog. N° 1	57566 Rotor Balance	
ISO G: 1.00	Total Weight: 1025.00 lb	Service Speed: 3600 rpm

	Tol (g)	r (inch)	Dim (inch)	
P1	3.735	6.50	a	30.50
ST	7.470	6.50	b	34.00
P2	3.735	6.50	c	33.50

### Initial Unbalances:

P1 (g)	ST (g)	P2 (g)
<b>22.61</b>	<b>44.17</b>	<b>22.02</b>
<b>24.7°</b>	<b>32.9°</b>	<b>41.2°</b>

### Residual Unbalances:

P1 (g)	ST (g)	P2 (g)
<b>1.24</b>	<b>1.89</b>	<b>2.89</b>
<b>262.9°</b>	<b>36.8°</b>	<b>54.9°</b>

Measuring speed = 582 rpm

erator:

Sign : Rotor Balance  
10-1

TES:

# CLOSING REPORT

CUSTOMER : EKPC-Spurlock Station  
REPORT NO. : 57566-CR1

REPORT DATE : 12/23/24  
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*Rotor Balance  
10-1*

**ENGINEERED PUMP SERVICES, INC.**

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

**RECOMMENDED REPAIR SPECIFICATION**

Ref. EPS order : 57566  
Customer order: SP13068  
Page : 1 of 2 pages

Quotation no. : 68458-Q1  
Quotation date : 07/26/24  
Ref. EPS report : 57566-IR1

**East Kentucky Power Cooperative – Spurlock Generating Station**  
Boiler Feed Pump Repair  
Byron Jackson 8X10X14 HDB -11

**A1) REQUIRED NEW PARTS (FOR ELEMENT REPAIR):**

Qty.	Part Description	Material
1	1 <sup>st</sup> Stage Shaft Sleeve	ASTM A743-CA40 (420 Stn Stl)
1	Case Wear Ring – 1 <sup>st</sup> Stage Large	ASTM A743-CA40 (420 Stn Stl) (Hard)
1	Case Wear Ring – 1 <sup>st</sup> Stage Small	ASTM A743-CA40 (420 Stn Stl) (Hard)
10	Case Wear Ring – Series	ASTM A743-CA40 (420 Stn Stl) (Hard)
1	Sleeve - Balance	ASTM A743-CA40 (420 Stn Stl)
8	Stage Piece – Series	ASTM A743-CA40 (420 Stn Stl) (Hard)
1	Stage Piece – Center-Split	ASTM A743-CA40 (420 Stn Stl) (Hard)
1	Stage Piece – 1 <sup>st</sup> Stage Sleeve	ASTM A743-CA40 (420 Stn Stl) (Hard)
12	Split Ring	ASTM A743-CA15 (410 Stn Stl)
Lot	Studs, Nuts & Washers – Volute	B6 Stainless Steel (Replace as Required)

**A2) REQUIRED NEW PARTS (FOR INSTALLATION):**

Qty.	Part Description	Material
1	Suction Fit O-Ring	EPR (70 Durometer)
1	Suction Fit Backup Ring	Teflon
1	Suction Gasket	304 Stainless Steel with Graphite Filler
1	Volute Locating Ring	ASTM A743-CA40 (420 Stn Stl)
1	Sealing Sleeve	ASTM A743-CA40 (420 Stn Stl) (Hard)
1	Sealing Sleeve Retainer (Upgrade)	ASTM A743-CA40 (420 Stn Stl) (Hard)
1	Sealing Sleeve Nut (Upgrade)	Nitronic 60
3	Takeoff Assembly O-rings	EPR (70 Durometer)
8	Takeoff Tube Springs	304 Stainless Steel
2	Stuffing Box Bushings	ASTM A743-CA40 (420 Stn Stl) (Hard)
4	Stuffing Box O-rings	EPR (70 Durometer)
1	Shaft Locating Ring	4140 Alloy Steel



## RECOMMENDED REPAIR SPECIFICATION

Ref. EPS order : 57566  
Customer order: SP13068  
Page : 2 of 2 pages

Quotation no. : 68458-Q1  
Quotation date : 07/26/24  
Ref. EPS report : 57566-IR1

### B) REQUIRED REPAIRS:

- 1) Pump shaft
  - a) Prep grind, chrome plate, and finish grind both bearing journals and center impeller fit to restore proper design size and surface finish.
  - b) Prep machine, chrome plate, and finish grind all impeller and sleeve fits to address galls and restore design fit interference with existing impeller fit bores.
  - c) Prep grind, chrome plate, and finish grind both grooved breakdown turns to address material damage and restore design diameter.
  - d) Minimum skim cut all axial mounting faces in split ring grooves to ensure perpendicularity.
  - e) Machine chase all external threads.
  - f) Burnish the vibration probe pick up areas on each end of the shaft and demagnetize.
- 2) Impellers (11 Total)
  - a) Excavate, weld repair, and hand grind to contour all NDT indications.
  - b) Machine the eye side and hub side wear turns to restore concentricity and establish proper running clearance to the new case rings and stage pieces.
  - c) Minimum machine the impeller seat faces to ensure perpendicularity to the shaft centerline.
  - d) Dynamic balance each impeller to ISO G-1.0 for a speed of 3600 RPM.
- 3) Volute Casing
  - a) Scan both halves of volute casing then create virtual model to double check measured fit bores and centerline.
  - b) Thoroughly stone main joint on both casing halves then realign and redowel.
  - c) Setup volute casing on lathe and indicate each fit bore for concentricity. The bores will be minimum machined to true up to centerline only if required.
  - d) Thoroughly clean volute and re-install splitters.
- 4) Assembly
  - a) Assemble the rotating element complete, and dynamically balance the rotor to ISO G-1.0.
  - b) Re-assemble the element with case rings and stage pieces properly installed. Indicate the rotor components for runout, and record.
  - c) Verify the proper fit and alignment to the volute. Assemble the volute, bushings, and gaskets. Check and record final axial float and shaft lifts.
  - d) Prep for shipment and long term storage.
  - e) Provide a "Closing Report" with all as assembled and final dimensions.