Commission Meeting

FEBRUARY 13TH, 2024

LUKE PETERSON

Commission Meeting Agenda

February 13th , 2023

Chair J. Hart	__	Commissioner J. Bayliss	__
Commissioner J. Stokes	__	Commissioner J. Babich	__
Commissioner J. Sandstede	__	Legal Counsel A. Borland	__
General Manager L. Peterson	__	Auditors Abdo , LLP	__
Utility Resources S. Dickinson	__	Mgr. Power Supply P. Plombon	__
Safety & Facilities P. Pelosi	__	Admin & Comm E. Dixon	__
City Administrator G. Pruszinske	__	Local 94 President Rich Kampsula	__

WORK SESSION

1. Management Updates
    1. HREC - Paul Plombon
    2. Utility Resources Update– Stefanie Dickinson
    3. Grants & Public Outreach – Eliot Dixon
    4. General Manager Update - Luke Peterson

2. Electric Distribution Substation Projects - Mike West & Iron Range Engineering
    1. Budget & Timeline
    2. Discussion

3. 2024 Water Projects - Bolton & Menk
    1. Project Overview for request for bid
    2. Discussion

4. Budget and 2024 Workplan

Item 1 – HPU Management Updates

HPU HIBBING PUBLIC UTILITIES
1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249
TELEPHONE: 218-262-7700
FAX: 218-262-7702

Item 1 – HPU Management Updates

February 13th, 2024

Jeff Hart, Chairman
Hibbing Public Utilities Commission
1902 E. 6th Avenue
Hibbing, MN 55746

RE: Item 1 – Management Updates

Dear Commissioners;

Please find attached for your reviewal the HPU Managerial Updates for the month of February 2024. Members of the management team will be present at the February 13th, 2024 Commission Working Session to provide updates and answer questions from Commissioners.

Sincerely;

Luke J. Peterson

Hibbing Renewable Energy Center

Operations

HREC is currently operating with one turbine. Turbine 6 is currently running generating up to 6.5 Mw and fully supplying the city's heat line. Boiler 4 is running on mostly biomass with Boiler 2 running on natural gas. With the unseasonably warm weather prices remain low so HREC is focused on optimizing. Turbine 3 will be offline for the next couple of months for a scheduled overhaul.

Monthly Highlights

HREC is continuing the major overhaul of Turbine 3. Condenser cleaning on Turbine 3 took longer than expected due to excessive scale buildup, but has since been completed and pressure tested. The generator for Turbine 3 was tested from January 17-18 by Great Plains Technical Services. Tests concluded that the generator is actually in better condition than in 2016 and has at least 15 more years of life left in it. Turbine 3's relief valve has been fully replaced with two new relief valves installed by Hecimovich Mechanical. Preparations for Turbine 5's SRV replacement are well underway. HREC has once again started to reuse the condensate water from the return lines from residential and commercial services. This should help lower the fuel and chemical costs within the plant.

Upcoming Schedule

February:

- RATA Testing
- TG 3 Major Inspection
- Turbine 505 Upgrade Planning
- Work on TG 5 SRV Replacement
- Piping work for TG 3 Controls
- Boiler 2 Superheat Bid
- Boiler 1&2 Upgrade Planning

March:

- Turbine 3 Overhaul
- TG 5 SRV Prep Work
- Prep work for Turbine 5 SRV replacement
- Boiler Blowdown System Planning
- Boiler 2 ID Fan Replacement Planning
- TG 3 Overhaul Completion

Heat Crew

There has been a major steam leak discovered on the 2400 block of 2nd Avenue East. Within the next couple of weeks the heat crew will be looking to open the steam vault and determine the extent of repairs needed. Condensate piping has shipped and plans are in place to replace the condensate piping in the T-alley behind the library.

Notable Projects

TG 3 SRV

#5 Polisher on Line

Turbine 3 Condenser

Turbine 3 Generator Rotor

TG 3 Hood Flip

MONTHLY UTILITY RESOURCES UPDATE

IT PROJECTS WORKFLOW

HPU staff will continue to work through the development phases of ArcGIS Mapping and Maximo. Ipads are being set up and will be rolled out to operations crews to begin testing data in the GIS system and later this month Bolton and Menk will have staff onsite to start collaborating with HPU staff on further enhancements and the start of electronic workflow opportunities.

FLEET

The surplus fleet auction was put on hold until warmer weather arrived. Information on how to access the auction and start date will be shared when available. The state of MN Fleet Services leased vehicles will be replaced with two Mitsubishi Outlanders as the two on loan currently are due back to the state.

FACILITY PROJECT UPDATES

Staff will begin collaborating with a consultant on updating the facility inventory and creating a needs assessment that will be shared when available. 2024 facilities improvements will be planned to focus on regular repairs and maintenance and any larger capital improvements will be recommended once the needs assessment is completed.

MONTHLY SAFETY HIGHLIGHTS

HPU had two incidents for the month of January 2024. Both incidents were due to environmental conditions and there was no lost time for either incident. Ice grips are stocked in the vending machines at the warehouse for employee use.

The January 2024 Ergonomics & Stretching benefits safety training was cancelled due to unexpected circumstances. The makeup date for the training is scheduled for February 16.

HUMAN RESOURCES UPDATES

There are currently 5 vacant positions at HPU. Interviews have been scheduled for the Biomass Technician Trainee, Customer Service Supervisor and Utility Operations Supervisor positions. A recruitment strategy is in the works due to boost interest in available positions.

LOOKING AHEAD...

HPU staff is in the process of finalizing 2024 professional goals in alignment with the 2024 work plan General Manager Peterson provided last month.

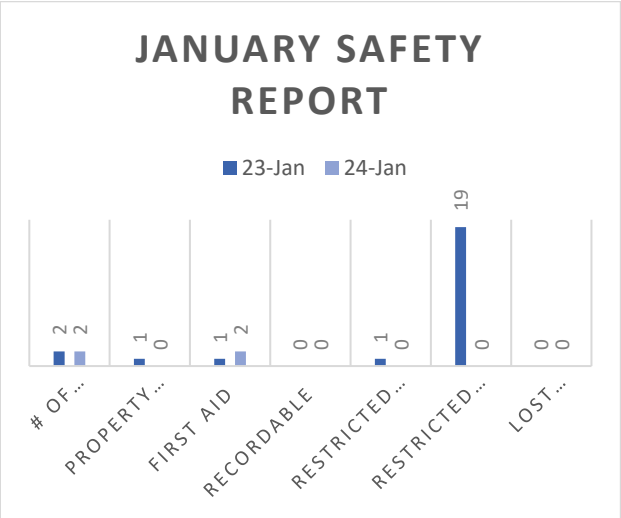
Key objectives the Utility Resources Group will assist with are:

- Employee Development and Retention
- Regulatory Compliance & Safety
- Technology & Infrastructure Advancements
- Cybersecurity
- Risk Management

The safety topic for February is First Aid.

New employees are scheduled for aerial boom & scissor lift training Mid-February. HPU has updated the Respirator Protection Program and is working with Essentia's Occupational Health to begin respirator fit testing in February and be completed by March.

In addition to respirator fit testing, HPU will be working with Essentia moving forward for new employee and random Drug and Alcohol Screening and Physical Fit Testing.


JANUARY SAFETY REPORT
23-Jan
24-Jan
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FIRST AID
RECORDABLE
RESTRICTED ...
RESTRICTED ...
LOST ...

Monthly Highlights

January 7th was HPU's Christmas Tree Collection day. This event originated as an awareness campaign for a Christmas Tree Recycling Program in coordination with the City. The curbside pick-up service was initiated by a grass roots group of community members reaching out to HPU staff at the end of December. HPU staff collaborated with community members put the service together and get the word out. Despite the lack of lead time, several homes were able to sign up for the service. HPU hopes to bring this program back annually in coordination with volunteers from the Hibbing High School Key Club. With more lead time, an established framework for the program, and increased awareness, HPU staff looks forward to offering this service and engaging community members with Biomass for years to come.

HPU Staff travelled to Virginia, MN to present the Hwy 169 Watermain Project in front of the CDBG Advisory Committee on January 11th. HPU collaborated with representatives from B&M and Their & Talle Management to present the need for, and goals of, the project. The Committee recommended $275,000 be awarded to the Hwy 169 project. This is the largest single amount awarded for FY 2024 as well as the largest amount HPU has received from the program to date.

The Midwest GRIP continues to move forward. HPU staff is working with Star Energy to align its application with the program timeline and project qualifiers. HPU will continue to seek funding for $2.5 million of line undergrounding and substations resiliency projects, but will do so for projects planned to begin after January 2025.

The HPU Energy Efficiency Rebate Program was digitalized and made public on January 30th through HPU's website. This program helps HPU fulfill CIP funding requirements and provides homeowners with incentive to complete energy efficiency projects. By centralizing program information and applications in one location, HPU hopes to make the program more accessible and easier for home owners to apply to.

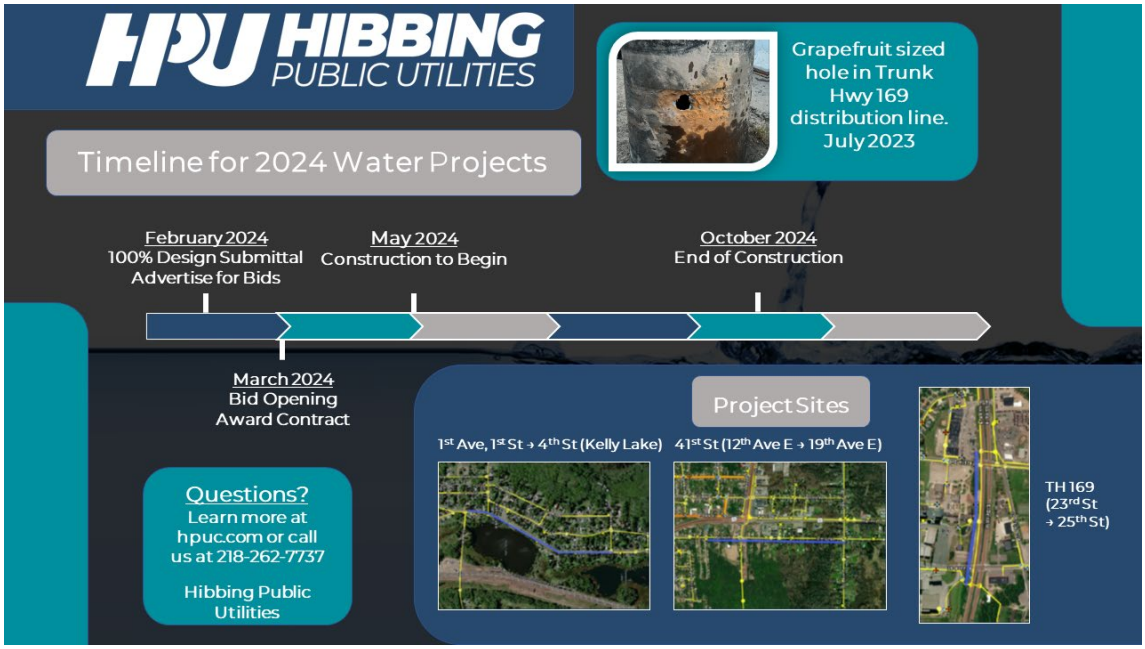
Looking Forward

HPU Staff will be releasing a Spring edition of HPU's "Utility Updater". This edition will go out in March. The primary intent of this edition will be to engage and educate community members about HPU's WTP projects and the related $11.8 million bonding ask. Importantly, customers get the opportunity to understand the reasons for this project before it is set to affect their rates. Additional topics could include:

- Rate Changes
- Info on digitalization of Energy Efficiency rebate program
- Additional topics open to Commission recommendation

In coordination with this engagement effort HPU is planning to host a Water Projects Open House in late April. HPU Staff and engineering contractors will review Water Project Planning with interested community members. Through these open channels of communication and decision making HPU staff would like to earn the support and trust of community members

Selection of HPU Social Media Posts



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February 9, 2024

Jeff Hart, Chairman
Hibbing Public Utilities Commission
1902 E. 6th Avenue
Hibbing, MN 55746

RE: Item 1.D General Manager Update

Dear Commissioners;

During this section of the meeting we will discuss the following items.

1. *State Minnesota Legislative Session Begins this week!*

   Working with the legislature to approve $12 million appropriation for HPU Water treatment plant is a top priority as well as advancing recognition of the use of biomass in the state's renewable energy goals. During this meeting I hope to be joined by HPU's Representative Spencer Igo over zoom to discuss his plans to introduce HPU's bills in the house and his views on legislative priorities.

   In Re: to Carbon Free legislation, an HPU special priority, Representative Igo plans to introduce HPU's Biomass amendment to certify biomass fueled electricity as carbon neutral.

2. *Strategic Planning*

   HPU has been discussing its strategic planning and 2024 Work Plan. At the meeting I will update the commission with key items on the technology and infrastructure renewal front.

3. *Work Progresses at the Water Treatment Plan*

   Rice Lake Construction, HPU's Construction Manager at Risk (CMAR) on the project has received electric bids in and is happy to report bids were ~ $450K under the estimate. At the meeting, Rice Lake Construction representatives will be in attendance to discuss the project and recent award of the electrical contract.

Luke J. Peterson

Luke J. Peterson

RICE LAKE
A WRG COMPANY

22360 County Road 12
PO Box 517
Deerwood, MN 56444
218-546-5519
ricelake.org

DEERWOOD | MONTICELLO

2/9/2024

Mr. Luke Peterson, General Manager
Hibbing Public Utilities Commission
1902 6th Ave. East
Hibbing, MN 55746

RE: Hibbing South WTP
GMP Update

Mr. Peterson,

In accordance with the approved two-step process, competitive bids for the Hibbing South Water Treatment Plant Improvements Project for the following bid packages were received Thursday 2/7/24:

Bid Package 7 – Electrical
Bid Package 8 – Concrete Paving & Curb

The Guaranteed Maximum Price (GMP) remains $8,674,000. Rice Lake will enter into applicable subcontract agreements. The bid packages above resulted in generating additional project contingency, which has been moved and allocated on the enclosed updated GMP. The sheet includes pricing received. This concludes solicitation and bidding of the entire project scope, and the submittals and construction phase can commence.

Please let me know if you have any questions.

Thank you,

Matt Perpich
Rice Lake Construction Group

RICE LAKE
A WEC COMPANY

HIBBING, MN - SOUTH WATER TREATMENT PLANT

Cost Model - GMP Updates

ITEM	DESCRIPTION	Date:	Initial GMP 05/13/22	GMP - Update #1 12/22/23	GMP - Update #2 2/7/24	Notes
DIV 00	GENERAL CONDITIONS		$ -	$ 506,557.00	$ 571,328.00	
DIV 00	BONDS & INSURANCE		$ -	$ 78,000.00	$ 78,000.00	
DIV 00	BUILDING PERMIT		$ -	$ -	$ 28,848.00	City
BID PACKAGE 1 - WELL & WELL HOUSE CONSTRUCTION			$ -	$ 631,875.00	$ 631,875.00	Traut/RLCG
BID PACKAGE 2 - SITE WORK & SITE UTILITY PACKAGE			$ -	$ 796,200.00	$ 796,200.00	Bougalis
BID PACKAGE 3 - CONCRETE (WTP)			$ -	$ 328,600.00	$ 328,600.00	RLCG
BID PACKAGE 4 - GENERAL CONSTRUCTION			$ -	$ 421,900.00	$ 421,900.00	RLCG
BID PACKAGE 5 - PLUMBING			$ -	$ 168,900.00	$ 168,900.00	Hecimovich Mech
BID PACKAGE 6 - HVAC			$ -	$ -	$ -	Hecimovich Mech
BID PACKAGE 7 - ELECTRICAL			$ -	$ 2,200,000.00	$ 1,775,167.00	Amptek/Novaspect
	Allowance for coordination with Novaspect		$ -	$ -	$ 100,000.00	Allowance
BID PACKAGE 8 - CONCRETE PAVING & CURB			$ -	$ 200,000.00	$ 155,000.00	TNT
BID PACKAGE 9 - PROCESS PIPING & EQUIPMENT			$ -	$ 1,697,883.00	$ 1,697,883.00	RLCG
BID PACKAGE 10 - ROOFING			$ -	$ 188,747.00	$ 188,747.00	Range Cornice
	Subtotal		$ 7,486,000	$ 7,218,662	$ 6,942,448	
	Contingency		$ 545,000	$ 545,000	$ 545,000	
	Project Generated Contingency		$ -	$ 267,338	$ 543,552	
	CMAR Fee		$ 643,000	$ 643,000	$ 643,000	
	Total		**$ 8,674,000**	**$ 8,674,000**	**$ 8,674,000**	

Item 2 - Electrical Distribution Substation Projects

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Item 2 - Electrical Distribution Substation Projects

February 13th, 2024

Jeff Hart, Chairman
Hibbing Public Utilities Commission
1902 E. 6th Avenue
Hibbing, MN 55746

RE: Item 2 - Electrical Distribution Substation Projects

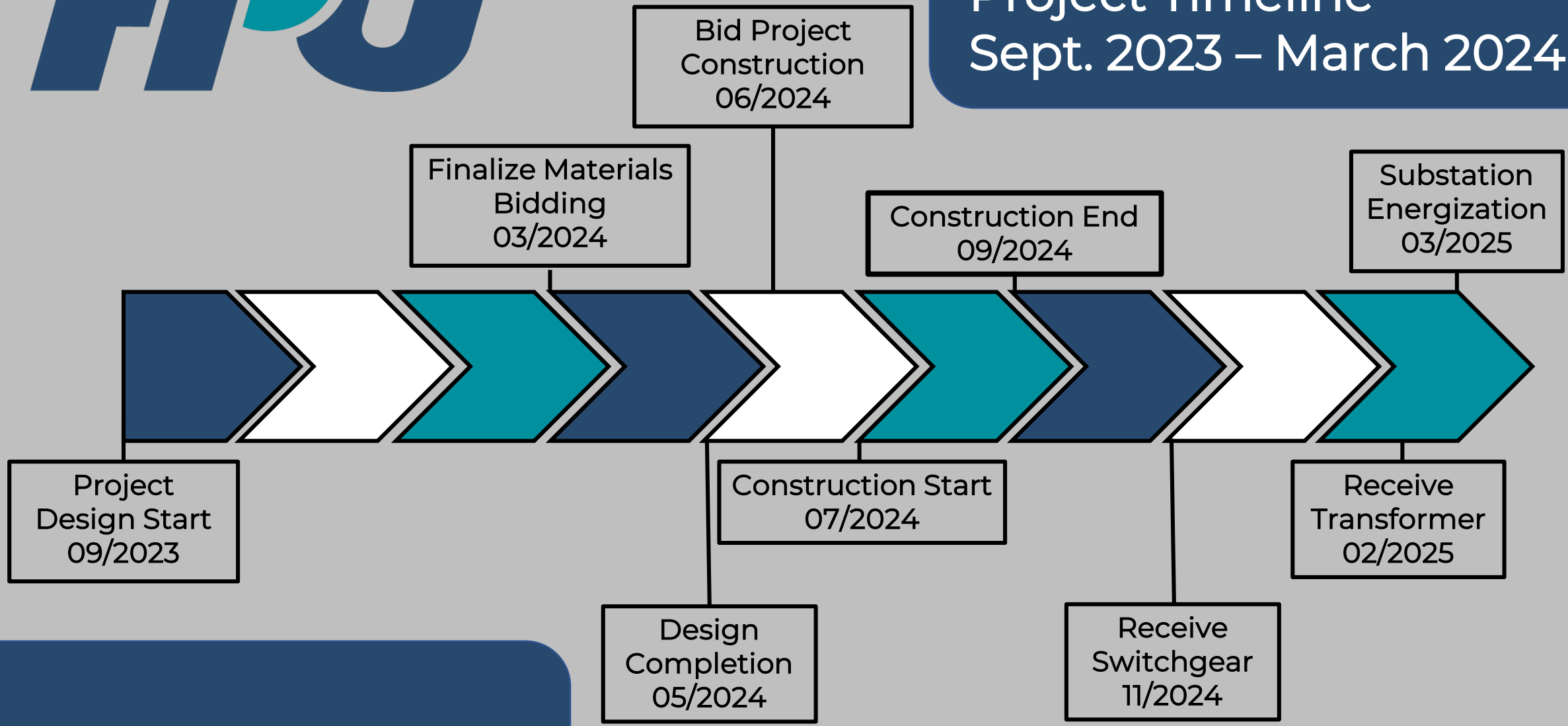
Dear Commissioners;

Following approval of the transformer and switchgear purchases at the January Commission meeting, the Project Team lead by HPU's Mike West will present on overall project planning Items for these upgrades including project budget and schedule.

Sincerely;

Luke J. Peterson

HPU Substation Upgrades: Project Timeline Sept. 2023 – March 2024



HPU Substation Modernization

Project Schedule - 1st Avenue and Belt Line Substations — Week

Iron Range Engineering and Consulting Services, PLLC — 4

Project Start — 1/15/2024

TASK	TASK OWNER	PROGRESS	START	END
Create Initial Schedule	Engineering	85%	1/15/24	2/16/24
Identify/Detail Deliverables	HPU/Engineering	65%	1/18/24	2/16/24
Place Orders - Transformers/Switchgea	HPU	90%	1/18/24	2/9/24
Bid Regulators	Engineering	20%	1/26/24	3/8/24
Award Regulators	HPU	0%	3/12/24	3/21/24
Determine Contracted Needs	Engineering	30%	1/18/24	3/15/24
Planning Contractors	Engineering	0%	2/10/24	3/15/24
Acquire Equipment Manufacturer Drawi	Engineering	10%	1/18/24	4/7/24
Request Utility Locates for Design	Engineering	0%	2/6/24	3/4/24
Drawing - One- Line	Engineering	30%	2/7/24	3/6/24
Drawing - Three Line	Engineering	30%	2/7/24	3/6/24
Drawing - Layout Detail Drawing	Engineering	10%	2/9/24	4/5/24
Drawing - Site Arrangement	Engineering	10%	2/6/24	4/2/24
Approve Details in Drawing Set	HPU	0%	3/5/24	4/2/24
Drawings - Control	Engineering	0%	3/11/24	4/15/24
Drawings - SCADA/Communications	Engineering	0%	3/11/24	4/22/24
Drawings - Detail	Engineering	0%	3/25/24	5/13/24
Feeder Exit Design/Detailing	Engineering	0%	3/25/24	5/29/24
Develop Settings - Relays, Regulators,	Engineering	0%	4/1/24	5/13/24
Obtain City/Other Approvals	HPU	0%	1/27/24	3/27/24
Permits - If Required	HPU	0%	1/27/24	3/27/24
Develop Material List/BOM	Engineering	40%	2/12/24	3/11/24
Acquire Quotes for Materials	Engineering	0%	2/26/24	3/18/24
Place Orders - Balance of Materials	HPU	0%	3/4/24	3/25/24
Soil Samples	Contract Engineering	0%	4/15/24	4/25/24
Transformer/Switchgear Foundations D	Contract Engineering	0%	4/15/24	5/13/24
Spill Containment Design	Contract Engineering	0%	4/15/24	5/13/24
Ground Grid Design	Engineering	0%	4/15/24	5/13/24
Substation Construction Specifications	Engineering	0%	5/1/24	5/27/24
Substation Construction/Bid Drawings	Engineering	0%	5/1/24	5/27/24
Substation Site Staking	Engineering	0%	5/17/24	5/24/24
Substation Construction Bidding	HPU/Engineering	0%	6/1/24	7/9/24
Feeder Site Staking	Engineering	0%	6/1/24	6/8/24
Feeder Construction Bidding	HPU/Engineering	0%	6/8/24	6/22/24
Construction (all)	Contractors	0%	7/8/24	9/20/24
Site Construction Inspection	Engineering	0%	7/8/24	9/20/24
Receive, Program, Install Comm/SCAD	Contractors	0%	8/1/24	9/20/24
Switchgear Leadtime	Vendor	0%	1/28/24	10/27/24
Receive and Set Switchgear	Contractors	0%	10/25/24	11/4/24
Program/Commission Switchgear	Contractors	0%	10/25/24	11/4/24
Regulator Lead Time	Vendor	0%	3/19/24	2/17/26
Receive and Set Regulators	Contractors	0%	2/17/26	2/27/26
Program/Commission Regulators	Contractors	0%	2/17/26	2/27/26
Transformer Lead Time - VT (Early Deli	Vendor	0%	1/26/24	10/18/24
Transformer Lead Time - VT (Quoted)	Vendor	0%	1/26/24	2/14/25
Receive and Set Transformer	Contractors	0%	2/14/25	2/17/25
Commission Transformer	Contractors	0%	2/14/25	2/17/25
Substation Energization	All	0%	2/17/25	3/3/25

HPU Substation Modernization

Project Schedule - 1st Avenue and Belt Line Substations — **Week**

Iron Range Engineering and Consulting Services, PLLC — **4**

Project Start — **1/15/2024**

TASK	TASK OWNER	PROGRESS	START	END
Create Initial Schedule	Engineering	85%	1/15/24	2/16/24
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Award Regulators	HPU	0%	3/12/24	3/21/24
Determine Contracted Needs	Engineering	30%	1/18/24	3/15/24
Planning Contractors	Engineering	0%	2/10/24	3/15/24
Acquire Equipment Manufacturer Drawi	Engineering	10%	1/18/24	4/7/24
Request Utility Locates for Design	Engineering	0%	2/6/24	3/4/24
Drawing - One- Line	Engineering	30%	2/7/24	3/6/24
Drawing - Three Line	Engineering	30%	2/7/24	3/6/24
Drawing - Layout Detail Drawing	Engineering	10%	2/9/24	4/5/24
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Drawings - SCADA/Communications	Engineering	0%	3/11/24	4/22/24
Drawings - Detail	Engineering	0%	3/25/24	5/13/24
Feeder Exit Design/Detailing	Engineering	0%	3/25/24	5/29/24
Develop Settings - Relays, Regulators, (	Engineering	0%	4/1/24	5/13/24
Obtain City/Other Approvals	HPU	0%	1/27/24	3/27/24
Permits - If Required	HPU	0%	1/27/24	3/27/24
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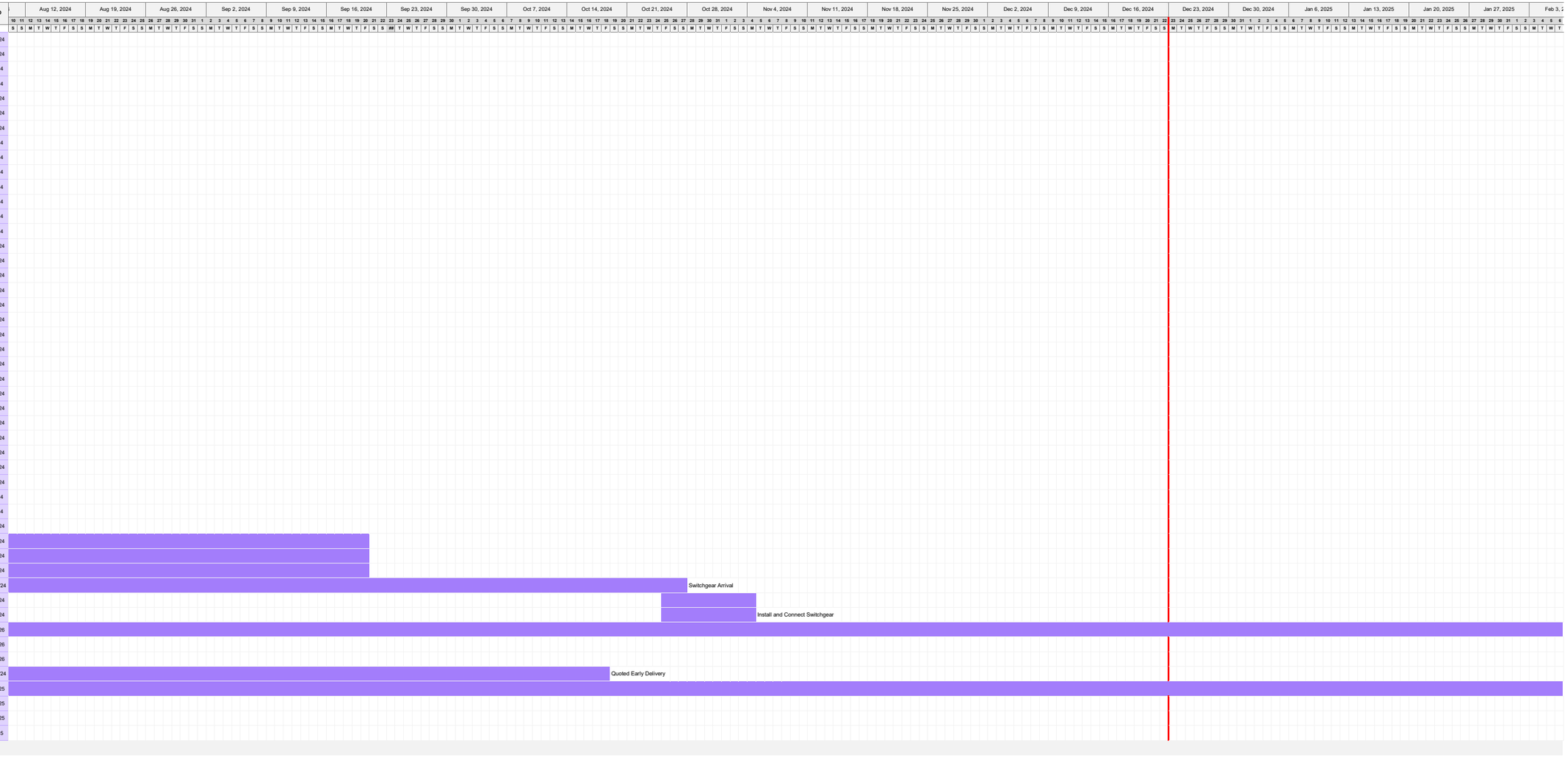

HPU Substation Modernization

Project Schedule - 1st Avenue and Belt Line Substations — **Week**

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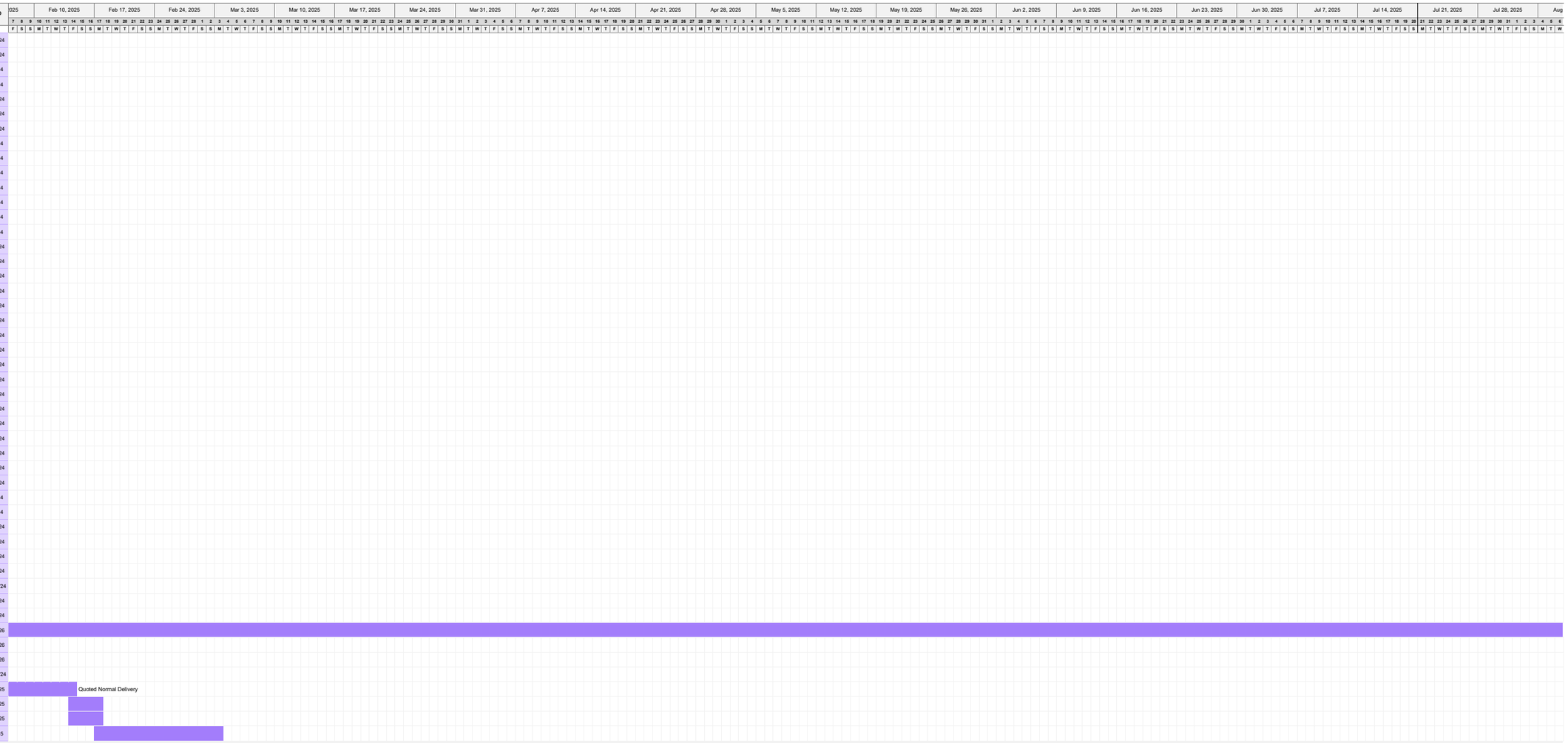
Switchgear Leadtime	Vendor	0%	1/28/24	10/27/24
Receive and Set Switchgear	Contractors	0%	10/25/24	11/4/24
Program/Commission Switchgear	Contractors	0%	10/25/24	11/4/24
Regulator Lead Time	Vendor	0%	3/19/24	2/17/26
Receive and Set Regulators	Contractors	0%	2/17/26	2/27/26
Program/Commission Regulators	Contractors	0%	2/17/26	2/27/26
Transformer Lead Time - VT (Early Deli	Vendor	0%	1/26/24	10/18/24
Transformer Lead Time - VT (Quoted)	Vendor	0%	1/26/24	2/14/25
Receive and Set Transformer	Contractors	0%	2/14/25	2/17/25
Commission Transformer	Contractors	0%	2/14/25	2/17/25
Substation Energization	All	0%	2/17/25	3/3/25



HPU Substation Modernization

Project Schedule - 1st Avenue and Belt Line Substations — **Week**

Iron Range Engineering and Consulting Services, PLLC — **4**

Project Start — **1/15/2024**

TASK	TASK OWNER	PROGRESS	START	END
Create Initial Schedule	Engineering	85%	1/15/24	2/16/24
Identify/Detail Deliverables	HPU/Engineering	65%	1/18/24	2/16/24
Place Orders - Transformers/Switchgea	HPU	90%	1/18/24	2/9/24
Bid Regulators	Engineering	20%	1/26/24	3/8/24
Award Regulators	HPU	0%	3/12/24	3/21/24
Determine Contracted Needs	Engineering	30%	1/18/24	3/15/24
Planning Contractors	Engineering	0%	2/10/24	3/15/24
Acquire Equipment Manufacturer Drawi	Engineering	10%	1/18/24	4/7/24
Request Utility Locates for Design	Engineering	0%	2/6/24	3/4/24
Drawing - One- Line	Engineering	30%	2/7/24	3/6/24
Drawing - Three Line	Engineering	30%	2/7/24	3/6/24
Drawing - Layout Detail Drawing	Engineering	10%	2/9/24	4/5/24
Drawing - Site Arrangement	Engineering	10%	2/6/24	4/2/24
Approve Details in Drawing Set	HPU	0%	3/5/24	4/2/24
Drawings - Control	Engineering	0%	3/11/24	4/15/24
Drawings - SCADA/Communications	Engineering	0%	3/11/24	4/22/24
Drawings - Detail	Engineering	0%	3/25/24	5/13/24
Feeder Exit Design/Detailing	Engineering	0%	3/25/24	5/29/24
Develop Settings - Relays, Regulators, (	Engineering	0%	4/1/24	5/13/24
Obtain City/Other Approvals	HPU	0%	1/27/24	3/27/24
Permits - If Required	HPU	0%	1/27/24	3/27/24
Develop Material List/BOM	Engineering	40%	2/12/24	3/11/24
Acquire Quotes for Materials	Engineering	0%	2/26/24	3/18/24
Place Orders - Balance of Materials	HPU	0%	3/4/24	3/25/24
Soil Samples	Contract Engineering	0%	4/15/24	4/25/24
Transformer/Switchgear Foundations De	Contract Engineering	0%	4/15/24	5/13/24
Spill Containment Design	Contract Engineering	0%	4/15/24	5/13/24
Ground Grid Design	Engineering	0%	4/15/24	5/13/24
Substation Construction Specifications	Engineering	0%	5/1/24	5/27/24
Substation Construction/Bid Drawings	Engineering	0%	5/1/24	5/27/24
Substation Site Staking	Engineering	0%	5/17/24	5/24/24
Substation Construction Bidding	HPU/Engineering	0%	6/1/24	7/9/24
Feeder Site Staking	Engineering	0%	6/1/24	6/8/24
Feeder Construction Bidding	HPU/Engineering	0%	6/8/24	6/22/24
Construction (all)	Contractors	0%	7/8/24	9/20/24
Site Construction Inspection	Engineering	0%	7/8/24	9/20/24
Receive, Program, Install Comm/SCAD	Contractors	0%	8/1/24	9/20/24
Switchgear Leadtime	Vendor	0%	1/28/24	10/27/24
Receive and Set Switchgear	Contractors	0%	10/25/24	11/4/24
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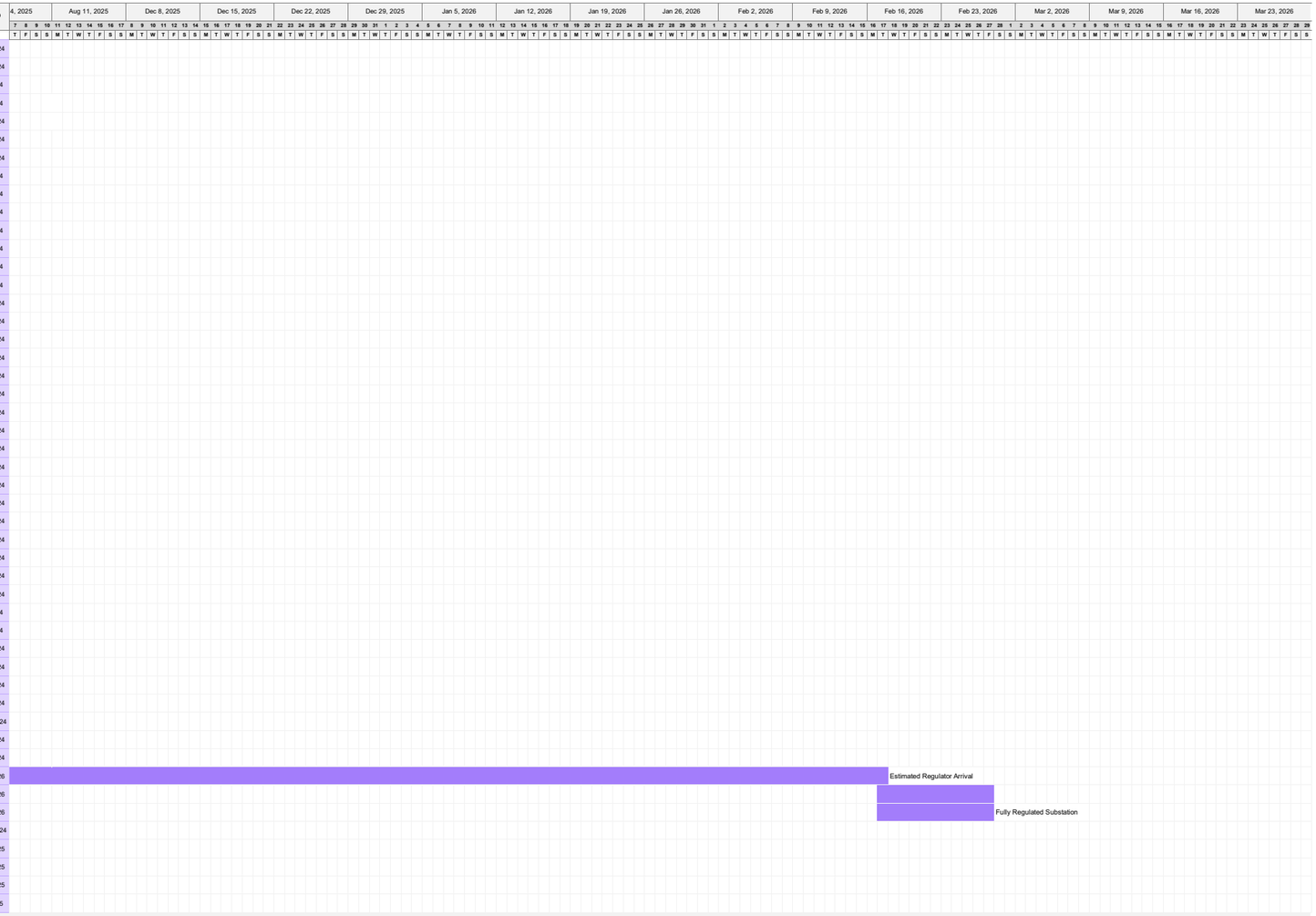

Summary	Budgeted	Actual	Difference $	Difference %	Notes
Overall Project Budget	$4,523,348	$2,311,598	-$2,211,750	-49%	
1st Ave Substation	$1,543,116	$685,866	-$857,250	-56%	
Beltline Substation	$1,331,866	$685,866	-$646,000	-49%	
Gas Plant Substation	$1,460,866	$939,866	-$521,000	-36%	Determining location will drive budget and costs
Feeder Exits	$187,500	$0	-$187,500	-100%	
	Budgeted	Actual	Difference $	Difference %	Notes
1st Ave Substation	$1,543,116	$685,866	-$857,250	-56%	
Engineering	$41,000	$0	-$41,000	-100%	
Materials	$1,281,116	$685,866	-$595,250	-46%	
Construction Subcontractors	$221,000	$0	-$221,000	-100%	
Misc. Fees	$0	$0	$0	0%	
	Budgeted	Actual	Difference $	Difference %	Notes
Beltline Substation	$1,331,866	$685,866	-$646,000	-49%	
Engineering	$45,000	$0	-$45,000	-100%	
Materials	$1,089,866	$685,866	-$404,000	-37%	
Construction Subcontractors	$197,000	$0	-$197,000	-100%	
Misc. Fees	$0	$0	$0	0%	
	Budgeted	Actual	Difference $	Difference %	Notes
Gas Plant Substation	$1,460,866	$939,866	-$521,000	-36%	
Engineering	$50,000	$0	-$50,000	-100%	
Materials	$1,198,866	$939,866	-$259,000	-22%	
Construction Subcontractors	$212,000	$0	-$212,000	-100%	
Misc. Fees	$0	$0	$0	0%	

Item 3 - 2024 Water Projects

HPU HIBBING PUBLIC UTILITIES
1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249
TELEPHONE: 218-262-7700
FAX: 218-262-7702

Item 3 - 2024 Water Projects

February 13th, 2024

Jeff Hart, Chairman
Hibbing Public Utilities Commission
1902 E. 6th Avenue
Hibbing, MN 55746

RE: Item 3 - 2024 Water Projects

Dear Commissioners;

HPU is nearing completion of the project design and engineering phase of the 2024 water main reconstruction projects. A plan set will be distributed and available for your review and consideration.

Bolton & Menk will be presenting on the projects at this work session. Following the discussion and any updates from that discussion, I would be recommending authorizing public bidding at the with the goal of going out for bid at the February 27th Commission Meeting.

I am pleased with the level of coordination and cooperation with the City and other stakeholders during this construction planning season and I look forward to increased collaboration in the future.

Sincerely;

Luke J. Peterson

BOLTON & MENK
Real People. Real Solutions.

4960 Miller Trunk Highway
Suite 550
Duluth, MN 55811

Ph: (218) 729-5939
Bolton-Menk.com

Via Email

February 07, 2024

Mr. Luke Peterson, General Manager
Hibbing Public Utilities Commission
1902 E. 6th Ave.
Hibbing, MN 55746

RE: 2024 Capital Watermain Improvements
Request Authorization to Advertise for Bids

Dear Mr. Peterson,

The Hibbing Public Utilities Commission authorized final design of the 2024 Capital Watermain Improvements in December of 2023. Pending approval from the commission, it is anticipated that three water distribution replacement projects will occur in 2024; 1st Avenue in Kelly Lake, 41st Street, and TH 169 (25th → 23rd Street). We are seeking authorization from the Commission to advertise and receive bids for the 2024 Capital Watermain Improvement Projects. These will be let as three separate contracts in Spring of 2024. A summary of project development to date is as follows;

1st Avenue (Kelly Lake), South Lake Drive → 5th Street

Purpose & Need

- Existing 6" Cast Iron Pipe (CIP), brittle material and undersized for flow needs
- Unknown installation date
- 10 breaks within project area

The project consists of

- Installation of 770 feet of 8" watermain, open cut
- Installation of 2,930 feet of 8" watermain, directional drill
- Installation of 20 Gate Valves and 8 Hydrants
- 39 Water Service Replacement

During the project development, directional drilling was added to reduce overall pavement restoration costs by approximately $400,000. Open cut replacement is specified for approximately 500 ft. near the public beach on Kelly Lake due to high bedrock and boulders noted during the soil investigation. Project limits were extended on the north end from 4th Street to 5th Street to replace all of the residential watermain on 1st Avenue in the north area of Kelly Lake. This will replace an additional 600 ft of 6" cast iron pipe and 12 residential service connections. Since most of the pipe replacement will be done by directional drilling, pavement restoration will consist mostly of patches at trenchless pit and service trench pit locations; no additional full width paving is included with the overall project.

Estimated Construction Cost = $2,298,000.00

41st Street, 8th Ave → 19th Ave E

Purpose & Need

- Existing 8" Cast Iron Pipe, brittle material
- Unknown installation date
- 7 breaks within project area

The project consists of

- Installation of 330 feet of 8" watermain, open cut
- Installation of 4730 feet of 8" watermain, CIPP Lined
- Installation of 23 Gate Valves and 10 Hydrants

The existing 8-inch pipe along 41st Street is of adequate size and depth to meet current and future water demands. Initially open cut excavation replacement was considered but alternative methods were explored due to the challenges associated with open cut replacement. The existing pipe is located on the north side of the roadway, generally in an open ditch. This ditch system is a primary stormwater conveyance and would require substantial water management during construction. Also, soil testing revealed a substantial amount of muck (peat) soils that would create added challenges and costs during construction. Pipe rehabilitation via Cured in Place Pipe (CIPP) was selected in lieu of open cut replacement due to the existing pipe properties (size & depth) which will allow an adequately sized liner to be placed inside of the existing pipe. Water services are robotically reinstated following the liner installation. Larger fittings, such as the connection to the 30-inch distribution line near 12th avenue, require open cut excavation to re-establish the connection. Overall the CIPP approach will significantly reduce overall ground disturbance during construction while ultimately reducing project restoration costs ($700,000).

Estimated Project Cost = $2,100,000.00

TH 169 Distribution Line, 23rd → 25th Street

Purpose & Need

- Existing 24" Cast Iron Pipe, brittle material
- Major outage in July 2023 (72+ hours) that impacted Southview Terrace Apartments
- Replace waterlines through intersections ahead of MnDOT intersection improvements

The project consists of

- Installation of 1,650 feet of 18" watermain, slip line (insert PVC pipe inside existing pipe)
- Installation of 9 Gate Valves and 2 Hydrants

The existing 24-inch line was originally sized to extend the water supply to the City of Chisholm. Discussions with staff have concluded that the need to preserve this additional capacity is likely unnecessary. Bolton & Menk has completed a comprehensive analysis on the Hibbing Public Utility water system using a computer model of the overall network. This modeling determined to meet the maximum daily demand pressure and fire flow peak demand, the existing 30-inch & 24-inch from the water treatment facility to 23rd Street could be reduced to an 16-inch inner diameter. This analysis also considered an event where the 18-inch main along 1st Avenue was shut down, overall water demands would still be met. To ensure adequate capacity, an 18-inch watermain is proposed which provides a pipe inner diameter (ID) of 17.2-inches. The installation method will generally be slip lining, where in a

pvc watermain pipe will be inserted into the existing pipe. This 6-inch size difference provides a loose fit for the new pipe to be installed. The void space around the pipe will be filled with a flowable fill material following installation of the new pipe and proper pressure testing. The specified pipe material will be fusible C900, which is similar to the material specified in an open cut installation. There is a proposed open cut excavation through the 25th Street intersection to make the connection to the crossing watermain on 25th Street.

Estimated Project Cost = $1,490,000.00

The overall project construction costs are anticipated to be approximately $5.88 million. The project team took a value engineering approach throughout the project development phase to reduce anticipated costs by almost $1 million. Overall, the projects are feasible and cost effective from an engineering perspective. At the discretion of the Commission, I would recommend moving forward with seeking public bids for the replacement/rehabilitation of the water system as specified in the 2024 Capital Watermain Improvement project documents.

Sincerely,

Bolton & Menk, Inc.

Joshua G. Stier, PE
Principal Engineer

Enclosures

HIBBING PUBLIC UTILITIES

CONSTRUCTION PLANS FOR

2024 CAPITAL WATERMAIN IMPROVEMENTS
KELLY LAKE - 1ST AVE

WATERMAIN - OPEN CUT INSTALLATION
STREET RECONSTRUCTION AND TURF ESTABLISHMENT

MARCH 2024

RESOURCE LIST

HIBBING PUBLIC UTILITIES

HPU OFFICE
1902 E 6TH AVE
HIBBING, MN 55746

Commision Members:
James Bayliss
Jeffrey Hart
Jeffrey Stokes
Jesse Babich
Julie Sandstede

General Manager:
Luke Peterson

Utility Operations Manager:
Stefanie Dickinson

Electric Line Crew Foreman:
Esko Savela

Heat Crew Foreman:
Paul Boswell

Water Crew Foreman:
Gary Jarmer

CITY OF HIBBING

City of Hibbing Administrator:
Greg Pruszinke

Public Works Director / Engineer:
Jesse Story

UTILITIES

Arvig:
John Vonruden
john.vonruden@arvig.com

Century Link / Lumen:
Bill Byers
bill.byer@lumen.com

Consolidated Telephone:
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eddiel@goctc.com

Mediacom:
Scott Sandquist
ssandquist@mediacomcc.com

MNDOT:
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shane.gries@state.mn.us
(218)725-2779

Minnesota Power:
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jkanipes@mnpower.com
(218) 260-6064

Northeast Service Cooperative:
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Paul Bunyan Rural Telephone Cooperative:
Ron Vold Jr.
jrvold@paulbunyan.net

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CONTACT THE SERVICE DESK AT:
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operations@hpuc.com

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PARTIAL MAP OF THE
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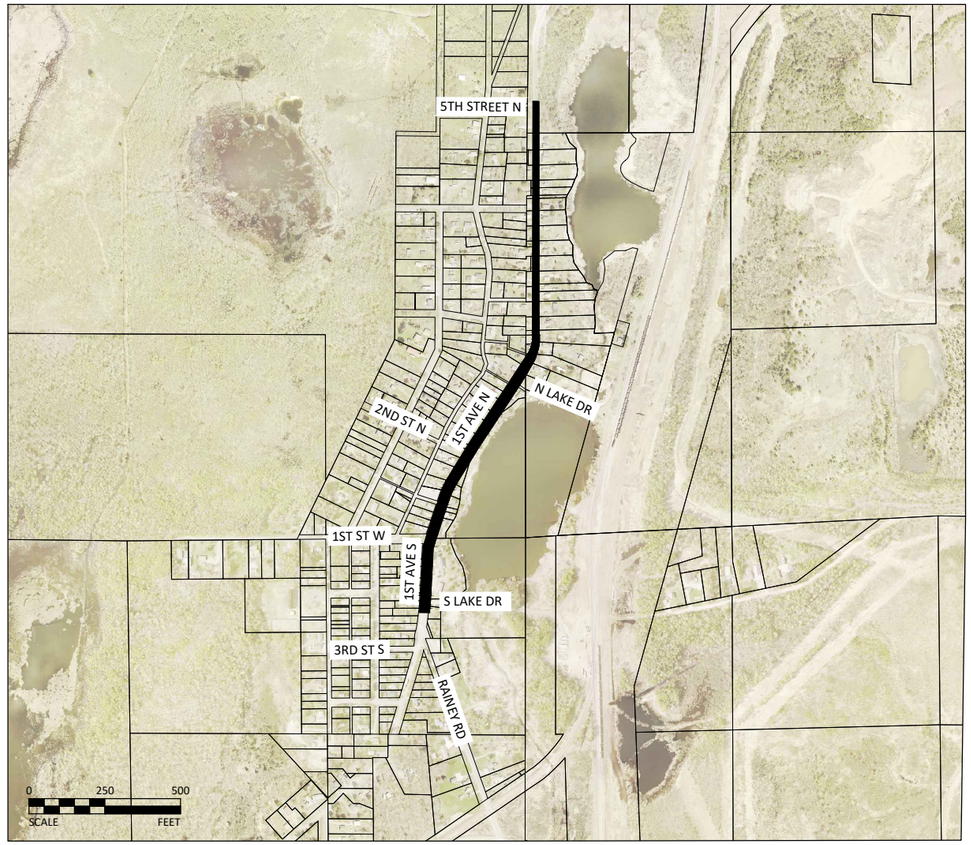
ST.LOUIS COUNTY, MN



MAP LEGEND

PROJECT LIMITS

SHEET NUMBER	SHEET TITLE
G0.01 - G0.03	TITLE SHEET, LEGEND, GENERAL NOTES
G1.01 - G1.02	STATEMENT OF ESTIMATED QUANTITIES & TABULATIONS
C0.01 - C0.04	EXISTING CONDITIONS & REMOVALS PLAN
C1.01 - C1.10	TABLES, DETAILS, TYPICAL SECTIONS & TEMPORARY WATER PLAN
C2.01 - C2.03	EROSION CONTROL PLAN & SWPPP
C3.01 - C3.XX	GRADING PLAN
C4.01 - C4.04	SANITARY SEWER & WATER PLAN & PROFILE
C5.01 - C5.XX	STORM SEWER PLAN & PROFILE
C6.01 - C6.02	CONSTRUCTION DETAILS
C7.01 - C7.XX	TRAFFIC CONTROL, SIGNING & STRIPING, SIGNALS

THIS PLAN SET CONTAINS 28 SHEETS.

REVIEWED & APPROVED _____ DATE: _____
CITY ENGINEER

PROJECT DATUM: ST. LOUIS COUNTY TRANSVERSE MERCATOR 96
HORIZONTAL: NAD83 (1996)
VERTICAL: NAVD 88

RECORD DRAWING INFORMATION
OBSERVER:
CONTRACTOR:
DATE:

Hibbing Public Utilities Commission

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DRAFT

JOSHUA G. STIER
LIC. NO. 54171 DATE 2/6/2024

BOLTON & MENK
4960 MILLER TRUNK HIGHWAY, SUITE 550
DULUTH, MN 55811
Phone: (218) 729-5939
Email: Duluth@bolton-menk.com
www.bolton-menk.com

February 13, 2024

DESIGNED	MFM
DRAWN	MFM
CHECKED	JGS
CLIENT PROJ. NO.	24-001

NO.	ISSUED FOR	DATE

HIBBING PUBLIC UTILITIES
2024 CAPITAL WATERMAIN IMPROVEMENTS - KELLY LAKE
TITLE SHEET

SHEET G0.01

HIBBING PUBLIC UTILITIES

CONSTRUCTION PLANS FOR

2024 CAPITAL WATERMAIN IMPROVEMENTS

41ST STREET

WATERMAIN CIPP LINING

MARCH 2024

RESOURCE LIST

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HPU OFFICE
1902 E 6TH AVE
HIBBING, MN 55746

Commision Members:
James Bayliss
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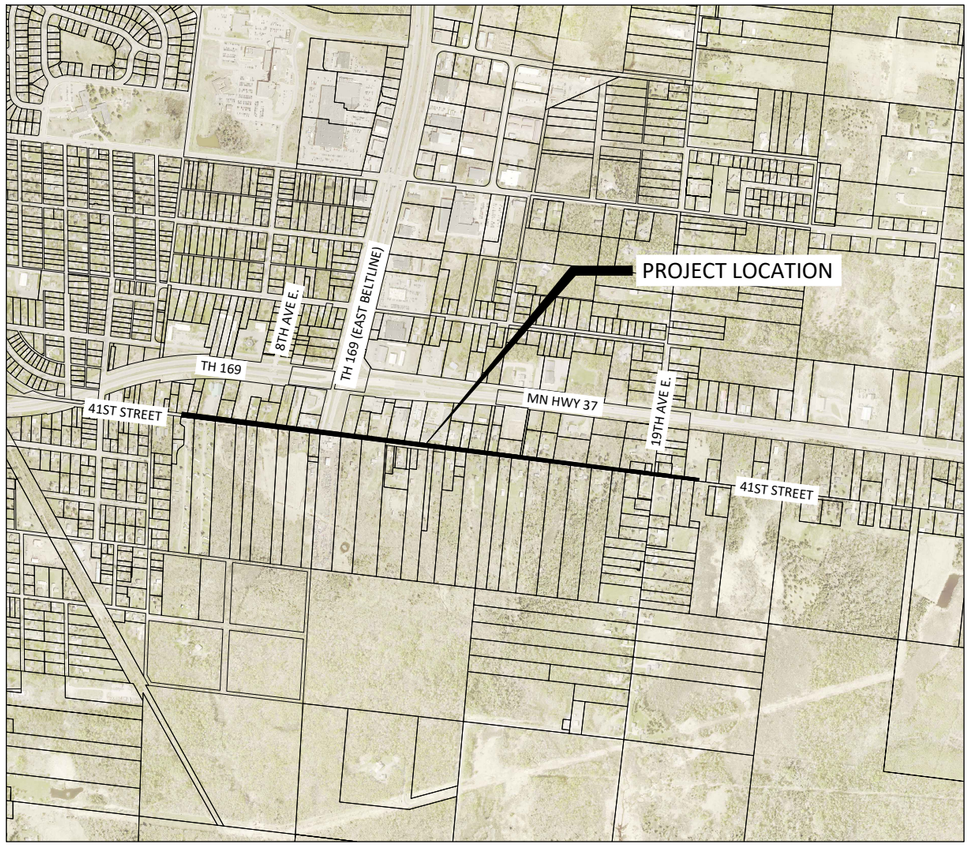

0 375 750
SCALE FEET

MAP LEGEND

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C5.01 - C5.XX	STORM SEWER PLAN & PROFILE
C6.01 - C6.XX	STREET PLAN & PROFILE, INTERSECTION DETAILS
C7.01 - C7.XX	TRAFFIC CONTROL, SIGNING & STRIPING, SIGNALS
C8.01 - C8.XX	STANDARD DETAIL PLATES, STANDARD PLANS
C9.01 - C9.XX	CROSS SECTIONS

THIS PLAN SET CONTAINS 18 SHEETS.

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CITY ENGINEER

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JOSHUA G. STIER
LIC. NO. 54171 DATE 2/6/2024

February 7, 2024

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Phone: (218) 729-5939
Email: Duluth@bolton-menk.com
www.bolton-menk.com

DESIGNED	NO.	ISSUED FOR	DATE
DRAWN			
CHECKED			
CLIENT PROJ. NO. 24-002			

HIBBING PUBLIC UTILITIES
2024 WATERMAIN CAPITAL IMPROVEMENTS - 41ST STREET
TITLE SHEET

SHEET G0.01

HIBBING PUBLIC UTILITIES

CONSTRUCTION PLANS FOR

2024 CAPITAL WATERMAIN IMPROVEMENTS

TH 169

WATERMAIN SLIP LINING

MARCH 2024

RESOURCE LIST

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1902 E 6TH AVE
HIBBING, MN 55746

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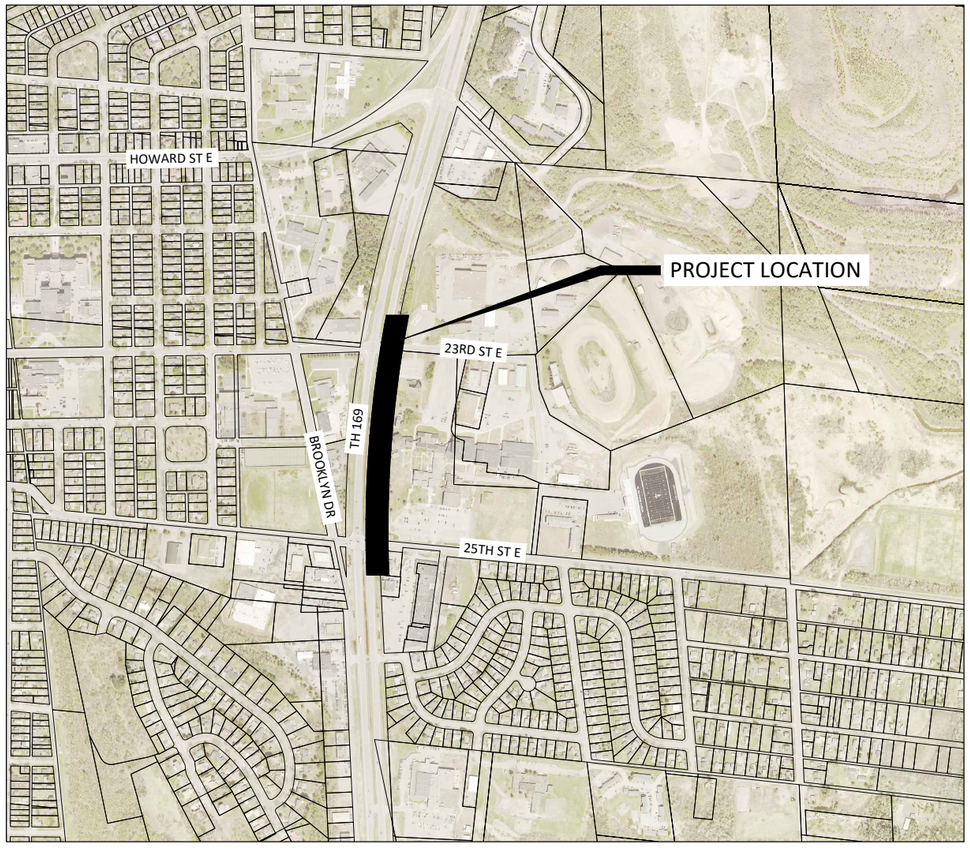
CITY OF HIBBING
ST.LOUIS COUNTY, MN



0 250 500
SCALE FEET

MAP LEGEND

PROJECT LIMITS

SHEET NUMBER	SHEET TITLE
G0.01 - G0.02	TITLE SHEET, LEGEND, GENERAL NOTES
G1.01 - G1.XX	STATEMENT OF ESTIMATED QUANTITIES
C0.01 - C0.03	EXISTING CONDITIONS, REMOVALS PLAN
C1.01 - C1.XX	TABLES, DETAILS, TYPICAL SECTIONS, PHASING PLAN
C2.01 - C2.03	EROSION CONTROL PLAN, SWPPP
C4.01 - C4.03	SANITARY SEWER & WATER PLAN & PROFILE
C5.01 - C5.XX	STORM SEWER PLAN & PROFILE
C6.01 - C6.XX	STREET PLAN & PROFILE, INTERSECTION DETAILS
C7.01 - C7.XX	TRAFFIC CONTROL, SIGNING & STRIPING, SIGNALS

THIS PLAN SET CONTAINS 11 SHEETS.

REVIEWED & APPROVED _____ DATE: _____
CITY ENGINEER

PROJECT DATUM: ST. LOUIS COUNTY TRANSVERSE MERCATOR 96

HORIZONTAL: NAD83 (1996)

VERTICAL: NAVD 88

RECORD DRAWING INFORMATION
OBSERVER:
CONTRACTOR:
DATE:

Hibbing Public Utilities Commission

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DRAFT

JOSHUA G. STIER
LIC. NO. 54171 DATE 2/6/2024

BOLTON & MENK
4960 MILLER TRUNK HIGHWAY, SUITE 550
DULUTH, MN 55811
Phone: (218) 729-5939
Email: Duluth@bolton-menk.com
Professional Engineers, Land Surveyors

February 13, 2024

DESIGNED	MFM
DRAWN	MFM
CHECKED	JGS
CLIENT PROJ. NO.	24-003

NO.	ISSUED FOR	DATE

HIBBING PUBLIC UTILITES
2024 CAPITAL WATERMAIN IMPROVEMENTS - TH 169
TITLE SHEET

SHEET G0.01

Item 4 - Turbine 3 Overhaul Update

HPU HIBBING PUBLIC UTILITIES
1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249
TELEPHONE: 218-262-7700
FAX: 218-262-7702

Item Turbine 3 Overhaul Update

February 13th, 2024

Jeff Hart, Chairman
Hibbing Public Utilities Commission
1902 E. 6th Avenue
Hibbing, MN 55746

RE: Item 3 - Turbine 3 Overhaul Update

Dear Commissioners;

As mentioned in my email on February 2nd, HPU Is at the stage of recommending repair / rebuild decisions following inspection of TG3 rotor and shaft. Attached Is recommendation to repair 8 of the 12 areas at a total cost of $596K that will be reflected as a Change Order on the initial bid for base scope for $557K awarded at the November 2023 Commission meeting.

During the meeting, staff will present on the decision to repair 8 of the 12 areas that need attention.

Sincerely;

Luke J. Peterson

From:	Luke Peterson
To:	Luke Peterson
Cc:	Paul Plombon; Andy Borland; Kurt L. Sobczynski
Bcc:	James Bayliss; Jesse Babich; Jesse Babich; Julie Sandstede; Jeff Hart; Jeff Stokes
Subject:	TG3 Update - Preview of Item for Action at Feb 13th meeting
Date:	Friday, February 2, 2024 3:11:00 PM
Attachments:	STC-0084 Hibbing Public Utilities U#3 Repair Rec. Letter- Steam Path Repairs Rev 1.pdf STC-0084 HPU TG3 Change Order 3 - Repair Letter Rev 1.pdf image001.png

Dear Commissioners,

I wanted to write this note as a preview of an item that I would like to take action on at the February 13th Meeting as it relates to HPU's in progress overall of TG3, of HPU's three electric generation turbines.

As is customary in this type of project, the original job was bid for the base inspection and change orders are issued for the necessary work once the inspection is complete. Due to the nature of electric generation, these projects can be costly and we wanted to share advance information so you could have time to review.

If you recall from the photos sent earlier, TG3's rotor had quite a bit of damage, rust, pitting and slight cracking.

Attached is the initial inspection report of the various rows of blading. ST Cotter's original recommendation was to make repairs to 12 of the rows that would be ~ $800K of extra cost. The HPU team led by Paul supported by Kurt from Barr settled on a recommendation to repair 8 of the 12 areas at a total cost of $596K of extra cost. Remember, HPU awarded the base scope for $557K at the November meeting and we will be bring the suggested recommendation to repair 8 of the 12 rows to the February meeting for your review.

Also please, to ensure the lack of a demobilization and losing our place on the high speed balance test cell, I plan to authorized ST Cotter to begin the diaphragm repairs (~ $90K portion of the $596K amount).

Please see attached report.

Feel free to reach out with any questions.

Best Regards and Thanks,

Luke

HPU HIBBING PUBLIC UTILITIES

LUKE PETERSON
General Manager
Hibbing Public Utilities
1902 E 6th Avenue
Hibbing, MN 55746
Tel: +1 (218) 262-7759
Mobile: +1 (218) 421-3926

STC-0084 – dated 01.20.24
Revision 1 – dated 1.26.24

REPAIR RECOMMENDATIONS LETTER

Hibbing Public Utilities

1902 6th Ave E
Hibbing, MN 55746

Unit #3 Worthington Steam Turbine
Steam Path Repairs – Rotor, Diaphragms, and Misc.

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1.1 General Summary

After cleaning and visual inspection, AIRS /STCTS found significant erosion, pitting, and FOD (Foreign Object Damage) to various Rows of Rotor blades, covers and tenons. AIRS & STCTS is recommending that (12) Rows of Rotor Blades be replaced in full. We are also recommending a minor repair to all other rows. A full scope of repair recommendations is in section *2.1.1 Rotor Assembly.*

After cleaning and inspections, AIRS / STCTS identified erosion, pitting, and FOD (Foreign Object Damage) on stages 2-10, 12-15. AIRS / STCTS will be recommending a form of repairs and/or mechanical inspections to all stages of the Diaphragms.

These recommendations are specific to the components that were shipped offsite for inspection. This does not include any onsite additional repairs or findings.

Revision 1 – 1.26.24

A conference call took place on 1/23/24. Participants included management from ST Cotter Turbine Services, Hibbing Public Utilities, and Axis Industrial Repair Services, where options were discussed regarding the number of Major Rotor Repairs/Blade Replacements that could be removed from the current recommended scope of work, and not performed during this outage period. Throughout the revised recommendation report, AIR /STCTS has highlighted alternative options, per component, that are to represent the proposed final steam path repair scope of services and schedule.

ST Cotter strongly recommends based on known national and industry standards for steam turbines that rows 1B, 3, 4, 5, 10, Aux Oil Pump, and Curtis Ring be complete blade replacement. These rows show significant material degradation which affects equipment reliability and turbine efficiency. ST Cotter cannot warrant continued use of these components and possible failure based on current degradation. Could result in catastrophic failure of the blades resulting in damage down or upstream or as whole of the machine. By agreeing to these alternative repairs, or not repairing the recommended items, the owner (Hibbing Public Utilities) by way of its representative accepts and understands that failure is possible due to the above reasons and more, and releases ST Cotter of any and all damages to the plant, personnel, other equipment, loss of generation and production. This does not release ST Cotter of normal workmanship warranty or warranty of provided parts under this contract.

2.1 Recommendations – By Component

2.1.1 Rotor Assembly

Rotor Shaft:

Blast cleaning was performed, and evidence of minor erosion throughout but no recommendations are being made. No runouts have been completed at this time.

Repair recommendation: None at this time

Rotor Wheel Faces:

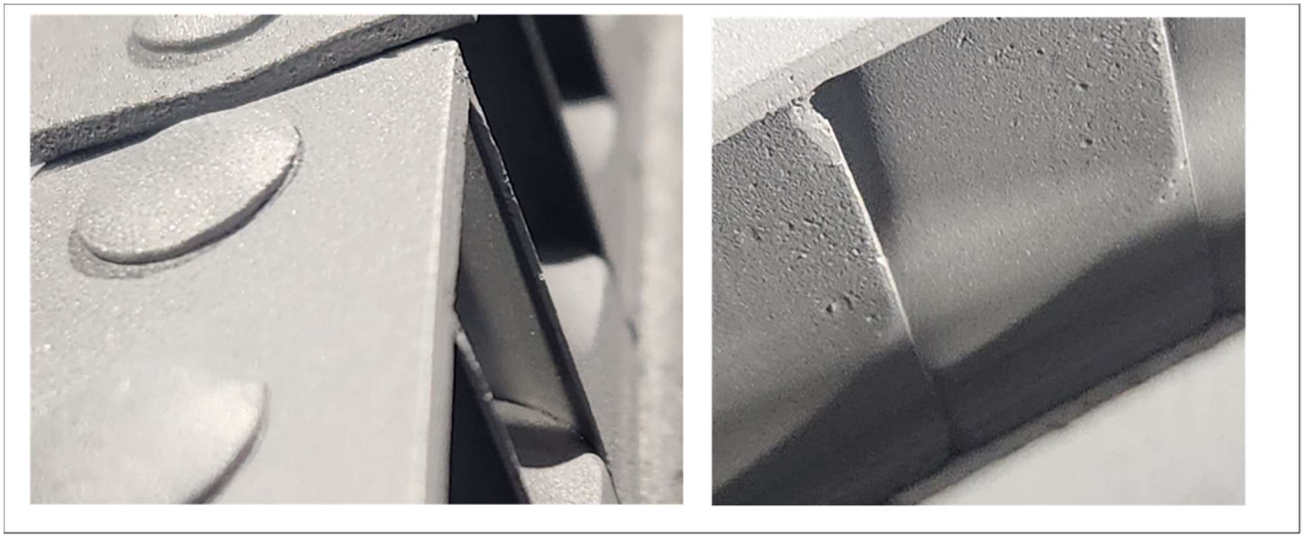
After blast cleaning, it was found that the wheels do have minor or light erosion, but overall showing in good condition. No runouts have been completed at this time. runouts to be taken to the wheels which blades are to be replaced.

Repair recommendation: None at this time.

NOTE: After deblading has been performed, AIRS will complete a secondary review and if needed, report any as found recommendations based on the condition of the wheel grooves.

Row #1A:
Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.

Additionally, there is (1) cover in Group 22 that is found to have cracked on the trailing edge.



Repair Recommendations:

Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$41,814.00
*Machining and balance not included in the firm price.

Row #1B:
Many of the blades were identified with severe impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.


Repair Recommendations:

Option 1:

Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$43,942.00
*Machining and balance not included in the firm price.

Option 2:

Recommend straightening of admission side trailing edges, to any found blades that have received FOD damage. AIRS is noting that we may not be able to remove all existing damage, but it is believed that we will be able to reestablish the edges at least 80-90% of original integrity.
Bench back and polish all blades on admission and exhaust side to a maximum of .020. This will not repair the damage in full. This repair will also not remove the defects on the admission side of the blades, affecting the overall efficiency of this row.

Estimated Duration-(12hrs)
Firm Price-$6,555.00

If not elected as a replacement, it is recommended that this Row be replaced during the next scheduled inspection.

Row #2:

Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.

Additionally, the covers on the exhaust side of groups 4, 5, 6, 7, and 8, are no longer flush to the airfoils (lifted approx. .100") and separating from many of the tenons.



Repair Recommendations:

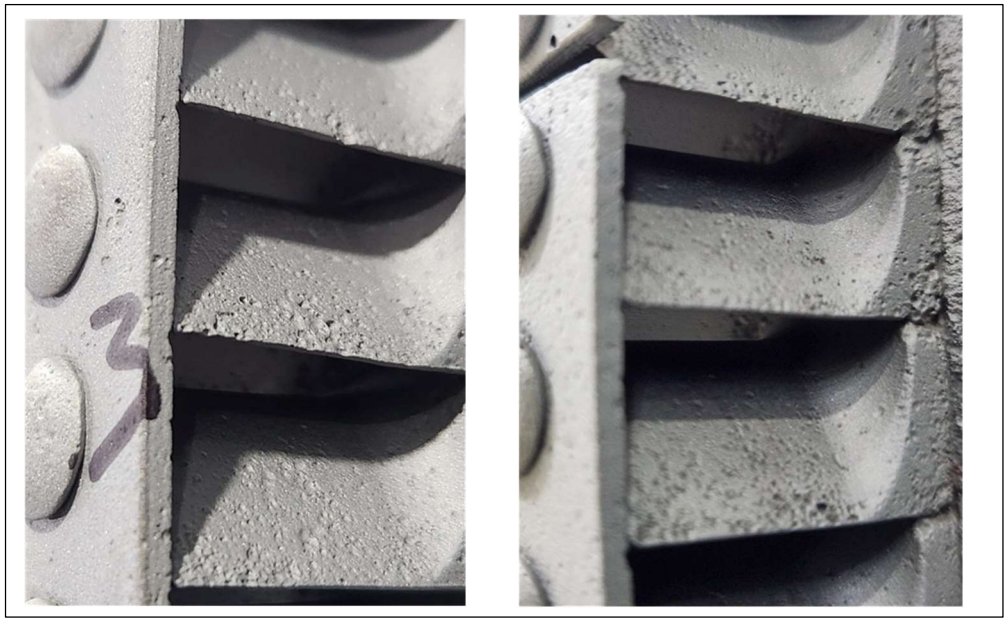
Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$47,955.00
**Machining and balance not included in the firm price.*

Row #3:

Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.



Repair Recommendations:
Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$48,490.00
**Machining and balance not included in the firm price.*

Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.

Row #4:
Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.

Repair Recommendations:
Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$47,782.00
**Machining and balance not included in the firm price.*

Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.

Row #5:

Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.

Repair Recommendations:
Highly recommend replacement of all blades to return them to OEM specifications and ensure the utmost, integrity, efficiency, and megawatt output.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$48,445.00
**Machining and balance not included in the firm price.*

Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.

Row #6:

Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.

Repair Recommendations:

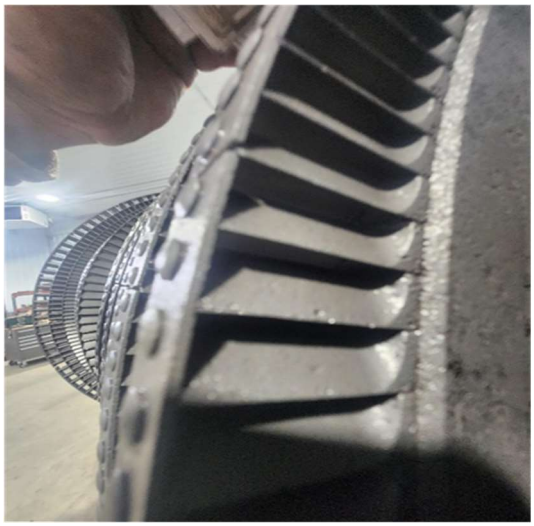
Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$50,905.00
**Machining and balance not included in the firm price.*

Row #7:

Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.



Repair Recommendations:

Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$52,900.00
**Machining and balance not included in the firm price.*

Row #8:
Many of the blades were identified with severe impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.

Repair Recommendations:

Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$56,010.00
**Machining and balance not included in the firm price.*

Row #9:
Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges. Additionally, there are covers that have pieces missing and a few blades were found to have previously had issues with cracking and were ground out. This previous repair has greatly affected the overall integrity of the airfoils.

Repair Recommendations:

Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$58,834.00
**Machining and balance not included in the firm price.*

Row #10:
Many of the blades were identified with severe impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils and covers, as well as thin leading and trailing edges.

Repair Recommendations:

Option 1:
Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$54,250.00
**Machining and balance not included in the firm price.*

Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.

Row #11:

Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils, as well as thin leading and trailing edges.

Repair Recommendations:

Recommend straightening of admission side trailing edges, to any found blades that have received FOD damage. AIRS is noting that we may not be able to remove all existing damage, but it is believed that we will be able to reestablish the edges at least 80-90% of original integrity.

Bench back and polish all blades on admission and exhaust side to a maximum of .020. This will not repair the damage in full. This repair will also not remove the defects on the admission side of the blades, affecting the overall efficiency of this row.

Firm Price-$1,975.00

Row #12:
Many of the blades were identified with severe impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils, as well as thin leading and trailing edges.

Repair Recommendations:
Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining, and Balance Services - Contingent upon the number of rows elected to be replaced.

Firm Price-$64,275.00
**Machining and balance not included in the firm price.*

Row #13:

Many of the blades were identified with moderate impact damage. There is found to be a significant amount of pitting and erosion on the admission and exhaust side of the airfoils, as well as thin leading and trailing edges.

Repair Recommendations:

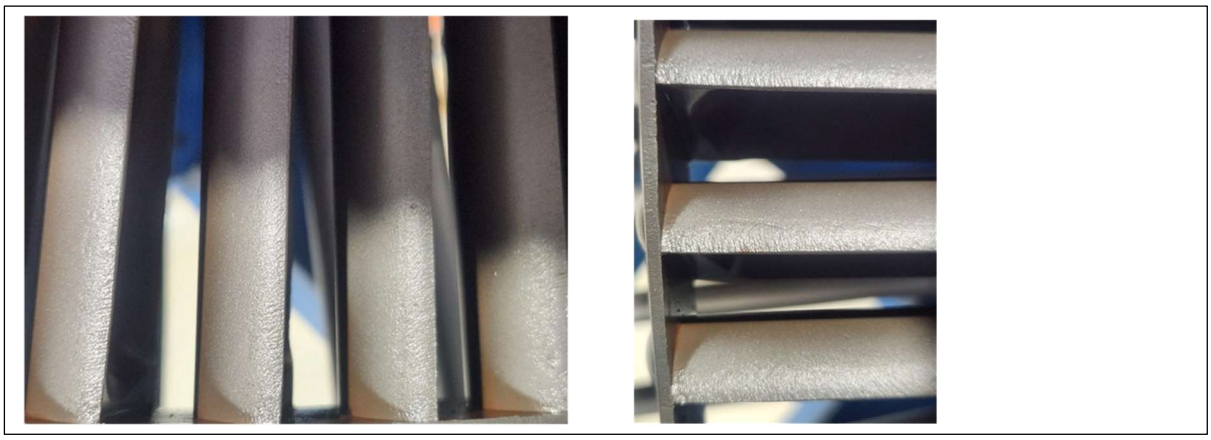
Recommend straightening of admission side trailing edges, to any found blades that have received FOD damage. AIRS is noting that we may not be able to remove all existing damage, but it is believed that we will be able to reestablish the edges at least 80-90% of original integrity.

Bench back and polish all blades on admission and exhaust side to a maximum of .020. This will not repair the damage in full. This repair will also not remove the defects on the admission side of the blades, affecting the overall efficiency of this row.

Firm Price-$2,272.00

*Balance not included in the firm price.

Row #14:
Admission side of the Airfoils are found to be pitted and eroded, most significant at the trailing edge.



Repair recommendation:
Cut back admission side only, 0.020-0.030 max., to thicken up the trailing edge and lightly Polish to minimize the found erosion.

Firm Price-$2,272.00
**Balance not included in the firm price.*

Row #15:
All erosion shields are severely eroded and "cutting" into the admission side of the airfoil, in addition to steam cutting the airfoil next to the cover.


Repair recommendation:
Replace erosion shields on all blades.

Firm Price-$54,906.00
**Balance not included in the firm price.*

Miscellaneous Additional Rotor Repair Items and Costs

Machining Services:

Regardless of the number of rows opted for replacement repairs, the following Cover machining services are required in order to complete the finishing services.

Firm Price: $45,397.00 – Based on (12) Rows of Blade Replacements

Revision 1 Alternative: Firm Price: $42,500.00 – Based on (7) Rows of Blade Replacements

Balance Services:

Regardless of the number of rows opted for replacement and/or repairs, upon completion of all rotor work, a low-speed balance to 4W/N needs to be performed prior to returning to service.

Firm Price: $20,250.00

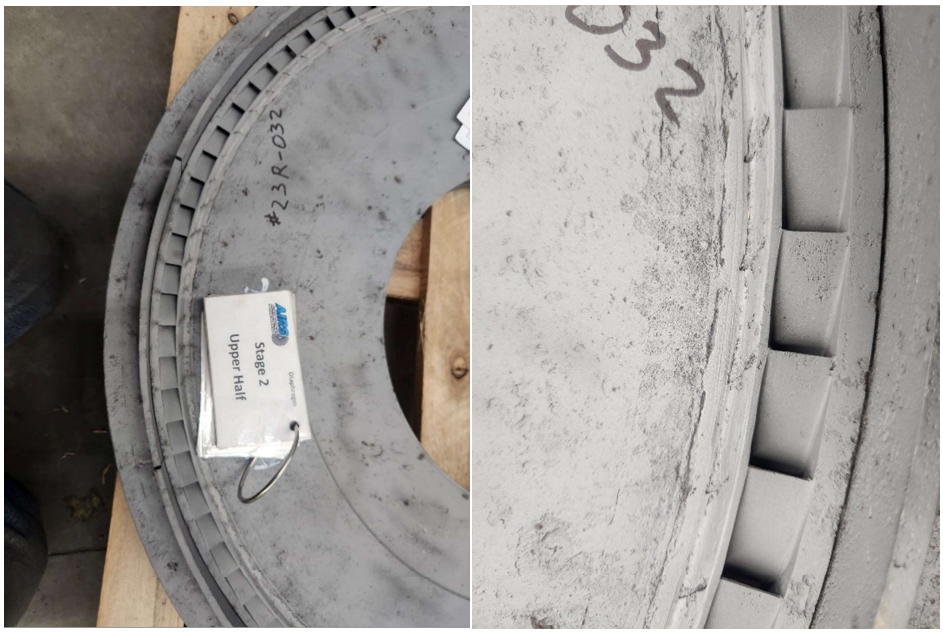
****No Shipping or Transport of the Rotor has been included in the pricing.***

2.1.2 2nd Stage Upper & Lower Half Diaphragms

2nd Stage:

All partitions on the 2nd stage diaphragm have presented with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.
There is one Packing Bolt on the Upper Half that was broken prior to arrival at the AIRS Facility.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is .525”.



Repair Recommendations:
-Light Polish only all blades. (No bench backs to be performed.)
-Drill out broken packing bolt and retap.

Firm Price-$1,500.00

2.1.3 3rd Stage Upper & Lower Half Diaphragms

3rd Stage:

All partitions on the 3rd stage diaphragm are presenting with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.
There is significant damage to (1) partition in the Upper Half and due to an extensive amount of erosion and through holes in many of the blades, it is warranted to complete a major weld repair to all blades in the Lower Half.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is .640".

Repair Recommendations:
-Perform a full major repair to all blades in the Lower Half and (1) blade in the Upper Half. All blades will be cutback and new blades and sidewalls will be re-established utilizing Inconel Weld material.

-Light Polish only all blades. (No bench backs to be performed.)

Firm Price-$11,827.00

2.1.4 4th Stage Upper & Lower Half Diaphragms

4th Stage:

All partitions on the 4th stage diaphragm are presenting with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.
There is one Packing Bolt on the Upper Half that was broken prior to arrival at the AIRS Facility.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is .775".

Repair Recommendations:
-Light Polish only all blades. (No bench backs to be performed.)
-Drill out broken packing bolt and retap.

Firm Price-$1,500.00

2.1.5 5th Stage Upper & Lower Half Diaphragms

5th Stage:

All partitions on the 5th stage diaphragm are presenting with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is .945".

Repair Recommendations:
-Light Polish only all blades. (No bench backs to be performed.)

Firm Price-$1,200.00

2.1.6 6th Stage Upper & Lower Half Diaphragms

6th Stage:

All partitions on the 6th stage diaphragm are presenting with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.
There is one Packing Bolt on the Upper Half that was broken prior to arrival at the AIRS Facility.
There is significant damage to (13) partitions in the Lower Half and due to an extensive amount of erosion and thru holes in many of the blades, it is warranted to complete a major weld repair in the Lower Half.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is 1.100".

Repair Recommendations:
-Perform a full major repair to all blades in the Lower Half and (1) blade in the Upper Half. All blades will be cutback and new blades and sidewalls will be re-established utilizing Inconel Weld material.
-Light Polish only all blades. (No bench backs to be performed.)
-Drill out broken packing bolt and retap.

Firm Price-$5,465.00

2.1.7 7th Stage Upper & Lower Half Diaphragms

7th Stage:

All partitions on the 7th stage diaphragm are presenting with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is 1.400".

Repair Recommendations:
-Light Polish only all blades. (No bench backs to be performed.)

Firm Price-$1,500.00

2.1.8 8th Stage Upper & Lower Half Diaphragms

8th Stage:

All partitions on the 8th stage diaphragm are presenting with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.
There is one Packing Bolt on the Upper Half that was broken prior to arrival at the AIRS Facility.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is 1.700".

Repair Recommendations:
-Light Polish only all blades. (No bench backs to be performed.)
-Drill out broken packing bolt and retap.

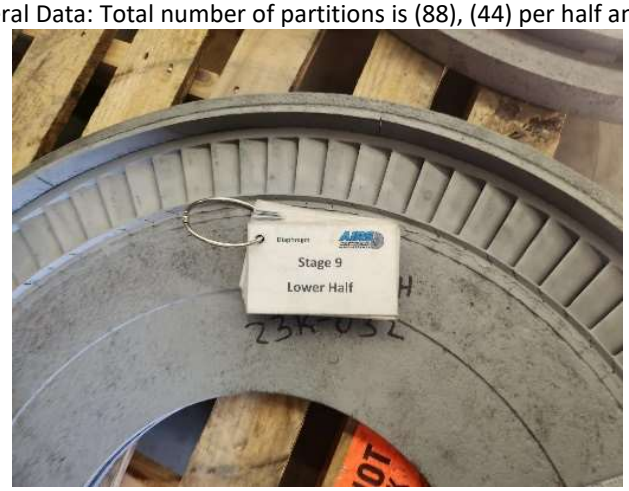
Firm Price-$1,500.00

2.1.9 9th Stage Upper & Lower Half Diaphragms

9th Stage:

All partitions on the 9th stage diaphragm are thin and present with moderate to heavy amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is 2.255".



Repair Recommendations:

Benchback 0.20-0.30" and light polish all blades. (Straighten only as/if needed.)

Firm Price-$1,500.00

2.1.10 10th Stage Upper & Lower Half Diaphragms

10th Stage:

All partitions on the 10th stage diaphragm are presenting with minor amounts of pitting.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.
There is one Packing Bolt on the Upper Half that was broken prior to arrival at the AIRS Facility.

General Data: Total number of partitions is (88), (44) per half and the radial height of the partitions is 2.950".

Repair Recommendations:
-Benchback 0.20-0.30" and light polish all blades. (Straighten only as/if needed.)
-Drill out broken packing bolt and retap.

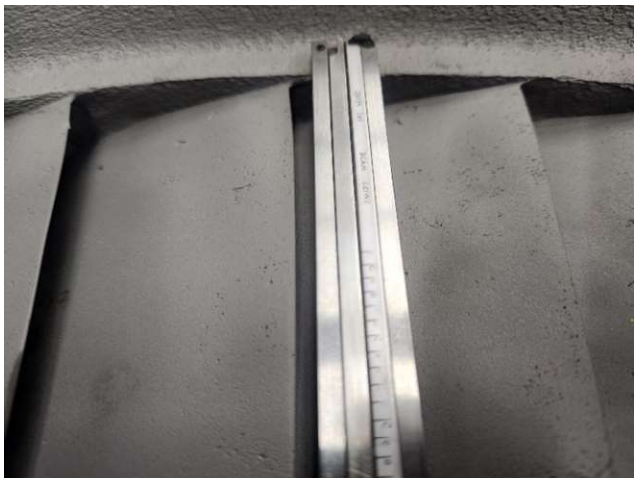
Firm Price-$2,346.00

2.1.11 12th Stage Upper & Lower Half Diaphragms

12th Stage:

All partitions on the 12th stage diaphragm are extremely thin and present with moderate to heavy amounts of pitting. All have been cut back previously .100-.235" behind the fab line and have damaged corners on X wall.
The joint, packing hooks, and keys have a moderate amount of erosion.
The steam sealing faces on the upper and lower half are severely eroded.

General Data: Total number of partitions is (64), (32) per half and the radial height of the partitions is 3.645".



Repair Recommendations:
-Perform a full major weld repair to all blades in the Lower Half and Upper Half. All blades will be cutback and new blades and sidewalls will be re-established utilizing Inconel Weld material.

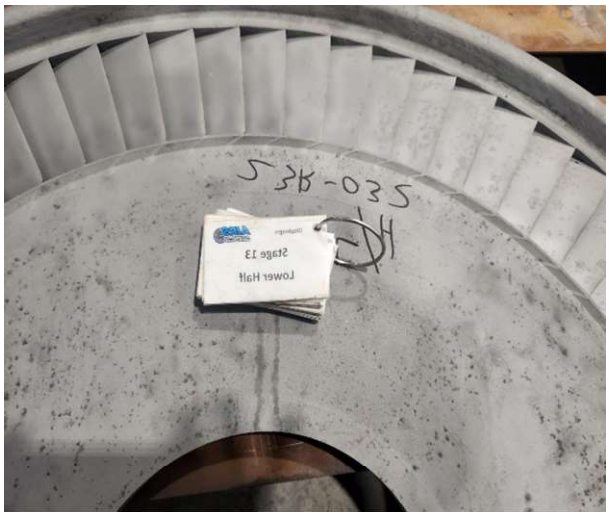
Estimated Duration-Est. (12) Shifts
Firm Price-$26,998.00

2.1.12 13th Stage Upper & Lower Half Diaphragms

13th Stage:

All partitions on the 13th stage diaphragm are presenting with minor amounts of pitting and a very thin at all trailing edges. There is (1) found crack on the Upper Half, partition #28 at X-wall.

General Data: Total number of partitions is (68), (34) per half and the radial height of the partitions is 5.260".



Repair Recommendations:

-Benchback 0.20-0.30" and light polish all blades. (Straighten only as/if needed.)
-Weld Repair crack on Upper Half #28 X-wall.
-Light Polish only all blades. (No bench backs to be performed.)

Firm Price-$2,845.00

2.1.13 14th Stage Upper & Lower Half Diaphragms

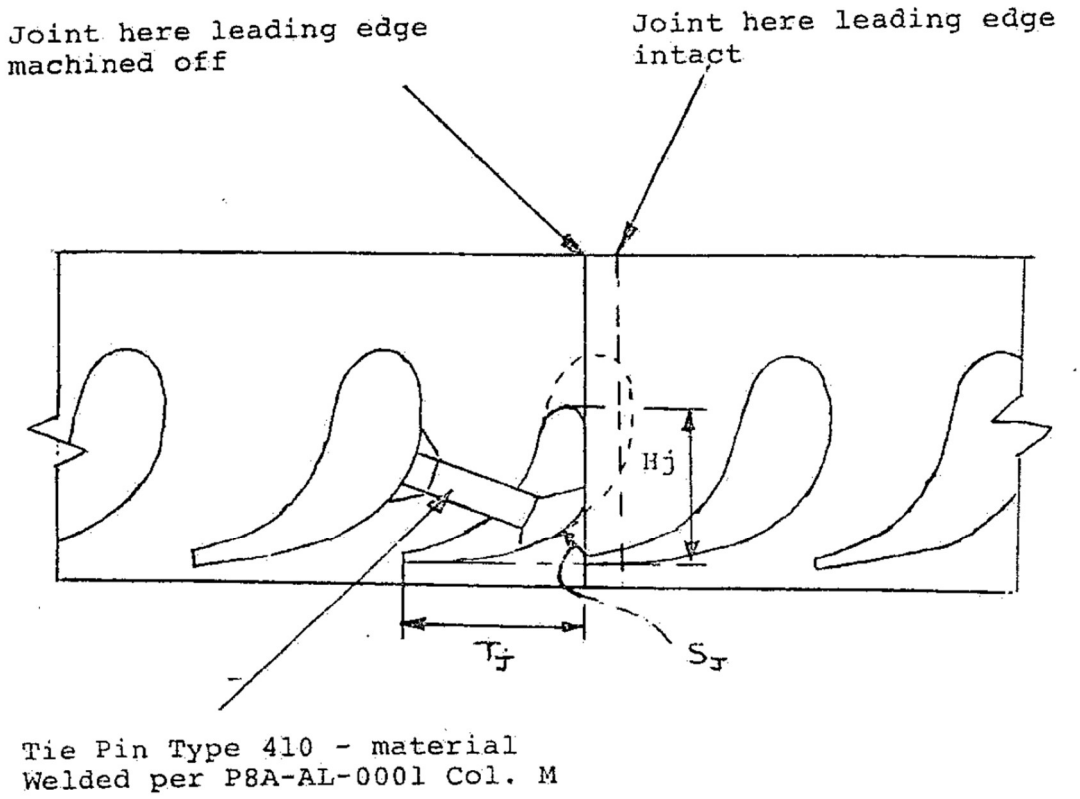
14th Stage:

The last Joint Partition in both the Upper and Lower Halves, are presenting with significant cracks in the parent metal.

General Data: Total number of partitions is (70), (35) per half and the radial height of the partitions is 7.750".

Repair Recommendations:

-Install (2) Pins per Joint Partition and Weld using Inconel, to the adjacent partition. This will keep the joint blade from continuing to crack and dislodge from the current position.



Firm Price-$2,100.00

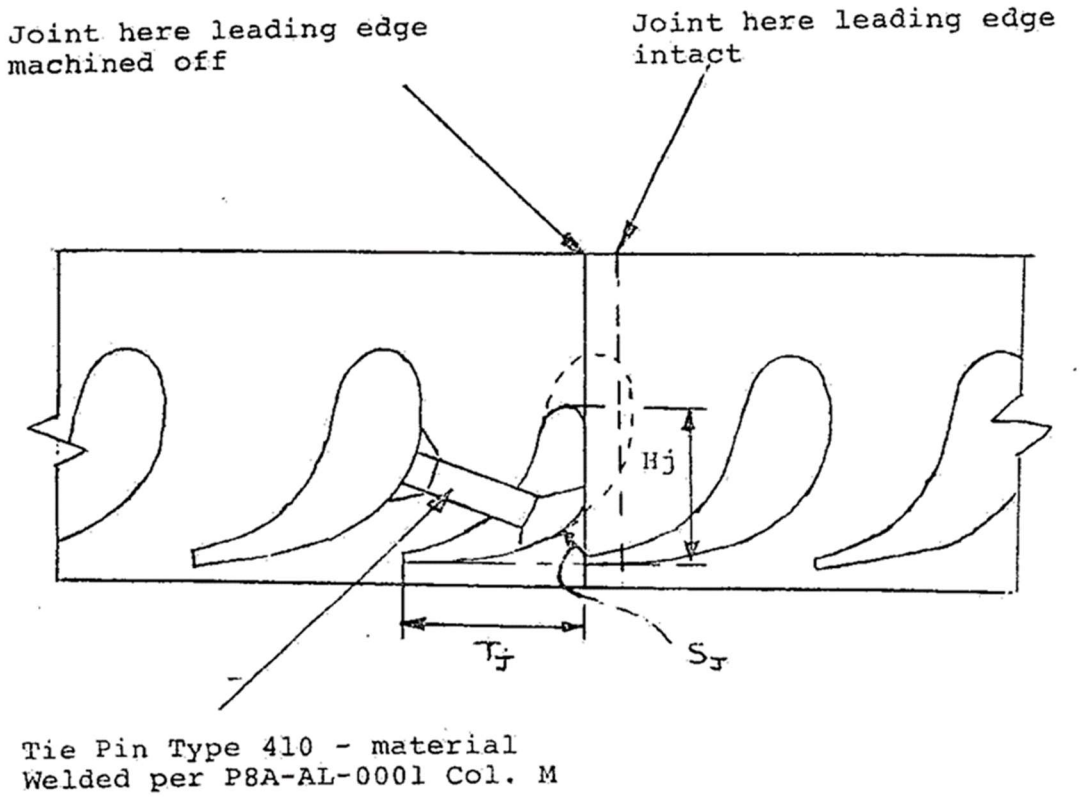
2.1.14 15th Stage Upper & Lower Half Diaphragms

15th Stage:

The last Joint Partition in both the Upper and Lower Halves, are presenting with significant cracks in the parent metal.

General Data: Total number of partitions is (70), (35) per half and the radial height of the partitions is 10.125".

Repair Recommendations:
-Install (2) Pins per Joint Partition and Weld using Inconel, to the adjacent partition. This will keep the joint blade from continuing to crack and dislodge from the current position.



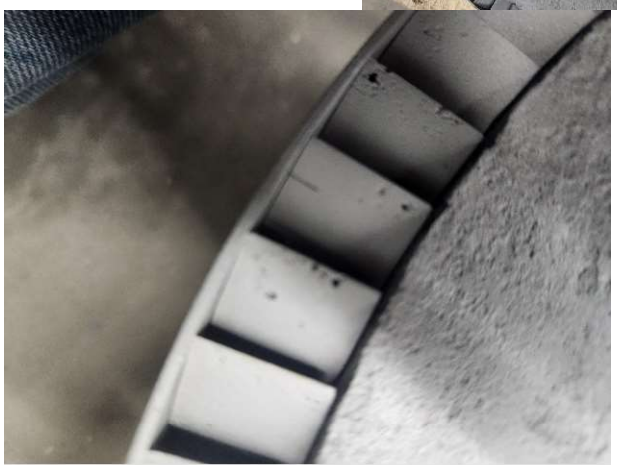
Firm Price-$2,100.00

****No Shipping or Transport of the Diaphragms has been included in the pricing.***

2.1.15 Aux. Oil Pump

Steam Driven Oil Pump - Wheel:

The majority of the blades were identified with a significant amount of erosion, ranging from 0.030-0.050", on both the admission and exhaust side of the airfoils, in addition to extremely thin edges. There are many the partitions and covers, that are presenting with thru holes. The Wheel has a mild to moderate level of erosion.



Repair Recommendations:

Option 1:

Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining - Contingent upon the number of rows selected to be replaced.

Firm Price-$28,750.00

Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.

2.1.16 Reversal Ring

Reversing Ring-(2) Halves:

Many of the blades and covers were identified with a significant or extreme amount of damage to the lower half, most prevalent on the left side. This appears to be due to a "hard" rub while in service.
Both the admission and exhaust side of the airfoils have extremely thin edges.
There are many the blades and covers, that are presenting with pitting and thru holes.



Repair Recommendations:
Highly recommend replacement of all blades to return them to OEM specifications, improved equipment reliability, and predictable power generation.

Estimated Duration-Blade Manufacturing – Contingent upon the number of rows elected to be replaced.
Estimated Duration-Disassembly, Install, Machining - Contingent upon the number of rows selected to be replaced.

Firm Price-$51,845.00
*Machining not included in the firm price.

Revision 1 Alternative: Attempt to straighten, benchback, and minor polish damaged/affected blades and dress covers, on Lower Half Ring only.
***If this minor repair does not end in an adequate result, an alternative major repair will need to be addressed and considered during this outage period.**

Firm Price-$5,375.00

Revision 1 Alternative: Quality & Engineering Oversite

To maintain warranty and direction based on owner selected alternatives oversite on items that are warranted

Firm Price - $22,000.00

3.1 Overall Project Notations/Reports

3.1.1 Schedule Information

ROTOR Rev 1 - Schedule assumes and is based on the following scope of work selections.
Rows 1A, 2, 6, 7, 8, 9, 12 Blade Replacements – De-blading, Wheel Clean and Prep, Blade Manufacturing, Re-blading, Cover Install and Peen, Cover Machining
Rows 1B, 11, 13, 14 - Minor Blade Repairs
Row 15 – Erosion Shield Repairs
Estimated lead time to complete the Rotor Repairs is approx. (8-10) weeks, after receipt of Purchase Order, no later than 1/31/24. Estimated to return to STC custody on or before 4/5/24, contingent upon release of work by 1/31/24. Work will commence within 24hrs of release or the next business day.
The following components will not have any repairs performed:
Rotor Row 3, 4, 5, 10
Oil Pump Rotor
Reversal Ring(s) – (2) Halves
DIAPHRAGMS -
If all recommended work is selected on all stages, the lead time is estimated to be completed in **approx. (3) weeks.**
*All diaphragms will be repaired concurrent to the Rotor Repairs and should be completed in the timeframe in which the blades are being manufactured.
Components will continue to have degraded performance and challenges to equipment reliability if repairs are not completed
EWAs -

Any identified Extra work has the potential to extend the overall project duration.
STCTS will be able to provide an updated overall duration, after customer determinations on final scope have been made.
Pricing does not reflect any additional charges to onsite assembly schedule caused by outage extensions.
SCHEDULE -
After approval of repair methods, STCTS will submit an updated schedule reflecting onsite activities prior to demobilization and remaining tasks upon completion of repairs.
*None of the durations listed within, include transport/shipping time.

** DISCLAIMER #2 (Supply Chain Availability) ** Currently there is a global shortage of certain provisions and unprecedented transportation challenges throughout the industry. STCTS cannot be held responsible for delays related to material delivery or availability. STCTS or Subcontracted services providers may be able to offer alternate materials, consumables, equipment, tooling but this can drastically affect delivery time and price.

CHANGE ORDER AUTHORIZATION

Customer/Station/Unit #	**Hibbing Public Utilities**
CO No.	**3**
Date:	1/26/2024

SECTION 1: REASON FOR AUTHORIZATION

☐ Delay ☐ Additional Work Scope ☐ Other _____

SECTION 2: BASE JOB DETAILS

Base Job No.	STC-0084	Location	1902 E, 6th Avenue
Base Job Description	Turbine #3 Major Inspection/Repairs Pub		Hibbing, MN 55746
Customer PO #	PO # 23003536		
Contract Terms	(T&M) Payment schedule		

SECTION 3: SCOPE OF WORK DESCRIPTION

Below is additional details specific to this Change Order based on the scope of work, and clarifications of *"STC-0084 Hibbing Public Utilities U#3 Repair Rec. Letter- Steam Path Repairs Rev 1"*

Item		Description	Price
		Turbine Rotor	
1	Row 1A	Replacement of all blades	$ 41,814.00
2	Row 1B	Option 2: Straightening of admission side trailing edges	$ 6,555.00
3	Row 2	Replacement of all blades	$ 47,955.00
4	Row 3	Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.	
5	Row 4	Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.	
6	Row 5	Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.	
7	Row 6	Replacement of all blades	$ 50,905.00
8	Row 7	Replacement of all blades	$ 52,900.00
9	Row 8	Replacement of all blades	$ 56,010.00
10	Row 9	Replacement of all blades	$ 58,834.00
11	Row 10	Revision 1 Alternative: Replace all blades during the next scheduled	
12	Row 11	Straightening of admission side trailing edges, Bench back and polish all blades on admission and exhaust side	$ 2,272.00
13	Row 12	Replacement of all blades	$ 64,275.00
14	Row 13	Straightening of admission side trailing edges, Bench back and polish all blades on admission and exhaust side	$ 2,272.00
15	Row 14	Cut back admission side only, lighlty polish trailing edge	$ 2,272.00
16	Row 15	Replace all erosion shields, all blades	$ 54,906.00
17	Mach	Machining of 7 row of blade replacements	$ 42,500.00
18	Bal	4W/N Low Speed Balance	$ 23,287.00
		Diaphragms / Misc. Components	
19	2nd Stage	Light Polish only all blades. (No bench backs to be performed.) Drill	$ 1,500.00
20	3rd Stage	Full major repair to all blades in the Lower Half and (1) blade in the Upper Half. All blades will be cutback and new blades and sidewalls will be re-established utilizing Inconel Weld material. Light Polish only all blades. (No bench backs to be performed.)	$ 11,827.00
21	4th Stage	Light Polish only all blades. (No bench backs to be performed.) Drill	$ 1,500.00
22	5th Stage	Light Polish only all blades. (No bench backs to be performed.)	$ 1,200.00

CHANGE ORDER AUTHORIZATION

Customer/Station/Unit #	Hibbing Public Utilities		
CO No.	**3**	**Date:**	1/20/2024

23	6th Stage	Full major repair to all blades in the Lower Half and (1) blade in the	$	5,465.00
24	7th Stage	Light Polish only all blades. (No bench backs to be performed.)	$	1,500.00
25	8th Stage	Light Polish only all blades. (No bench backs to be performed.) Drill out broken packing bolt and retap.	$	1,500.00
26	9th Stage	Benchback 0.20-0.30" and light polish all blades. (Straighten only as/if needed.)	$	1,500.00
27	10th Stage	Benchback 0.20-0.30" and light polish all blades. (Straighten only as/if needed.) Drill out broken packing bolt and retap	$	2,346.00
28	12th Stage	Perform a full major weld repair to all blades in the Lower Half and Upper Half. All blades will be cutback and new blades and sidewalls	$	26,998.00
29	13th Stage	Benchback 0.20-0.30" and light polish all blades. (Straighten only as/if needed.) Weld Repair crack on Upper Half #28 X-wall. Light	$	2,845.00
30	14th Stage	Install (2) Pins per Joint Partition and Weld using Inconel, to the	$	2,100.00
31	15th Stage	Install (2) Pins per Joint Partition and Weld using Inconel, to the	$	2,100.00
32	Steam OP	Revision 1 Alternative: Replace all blades during the next scheduled inspection/outage within 3 years.		
33	Rev Ring	Revision 1 Alternative: Attempt to straighten, benchback, and minor polish damaged/affected blades and dress covers, on Lower Half	$	5,375.00
34	Quality & Engineering Oversite	In order to maintain warranty and direction based on owner selected alternatives oversite on items that are warranted	$	22,000.00

ST Cotter strongly recommends based on known national and industry standards for steam turbines that rows 1B, 3, 4, 5, 10, Aux Oil Pump, and Curtis Ring be complete blade replacement. These rows show significant material degradation which affects equipment reliability and turbine efficiency. ST Cotter cannot warrant continued use of these components and possible failure based on current degradation. Could result in catastrophic failure of the blades resulting in damage down or upstream or as whole of the machine. By agreeing to these alternative repairs, or not repairing the recommended items, the owner (Hibbing Public Utilities) by way of its representative accepts and understands that failure is possible due to the above reasons and more, and releases ST Cotter of any and all damages to the plant, personnel, other equipment, loss of generation and production. This does not release ST Cotter of normal workmanship warranty or warranty of provided parts under this contract.

All per ST Cotter and customer rates and terms from the base proposal & "*STC-0084 Hibbing Public Utilities U#3 Repair Rec. Letter-Steam Path Repairs Rev 1*". **Please send subsequent PO to zach.maruska1@stcotterturbine.com.**

CHANGE ORDER AUTHORIZATION

SECTION 4: COST ESTIMATE

☑ Fixed Price ☐ Time & Materials

Payment Schedule:

Subcontractor Names: AIRS

☐ Mob/DeMob ☐ 8 hr. Stand By ☐ On Site Stand By ☐

AMMENDMENT? (Y/N) N

PREVIOUS ESTIMATE (IF APPLICABLE): N/A

CURRENT ESTIMATE: $596,513.00

SECTION 5: APPROVAL

STCTS Approval: Zach Maruska **Date:** 1/19/2024

Customer Name & Title: **Contact #:**

Customer Approval: **Date:**

Other Assumptions:

1. CONTRACT TERMS REFERENCED ABOVE IN SECTION 2 APPLY TO THIS WORK. IF TERMS REFERENCE IS NOT INCLUDED, ST COTTER'S STANDARD TERMS AND CONDITIONS FOR SALE APPLY AND ARE INCORPORATED INTO AND MADE PART OF THIS CONTRACT. ST COTTER'S STANDARD TERMS AND CONDITIONS FOR SALE ARE AVAILABLE FROM ST COTTER UPON REQUEST. INCONSISTENT OR ADDITIONAL TERMS PRESENTED BY CUSTOMER ARE VOID UNLESS EXPRESSLY ACCEPTED IN A DOCUMENT SIGNED BY ST COTTER AND CUSTOMER.
2. If extra work to an original order, this work authorization describes the additional activity to the scope of work outlined in the original order S.T. Cotter Turbine Services, Inc. will perform this work at the rates specified in original contract unless specified otherwise above.