Safety Report

October 2023

Safety@Grant

CODE OF EXCELLENCE

Grant PUD

Our Commitment to Safety

*We believe that a safe workplace and community is founded upon an environment where **all voices can and will speak up, ask questions, and be heard without reprisal**. We will provide and maintain the proper training, tools, job layout, equipment and employees to perform work safely.*

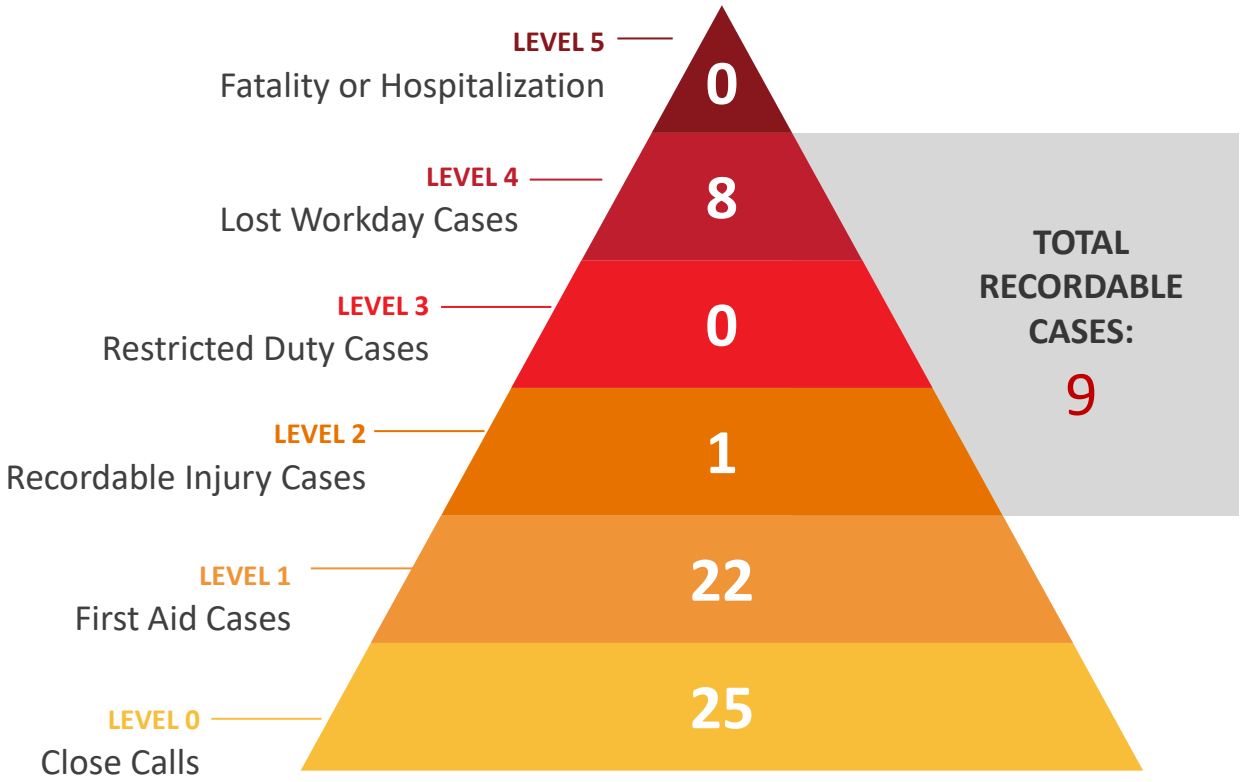
ELT Talking Points

Injuries Reported

Date	Body Part	Description & Response
9/20	Right Elbow	**Elbow Strain** While lifting boxes off a pallet, employee felt a strain around the right elbow area and reported it to the foreman. Safety followed up with employee and no further care was required. Reminder to take precautionary measures prior to lifting and keep lifting capabilities within your personal capabilities

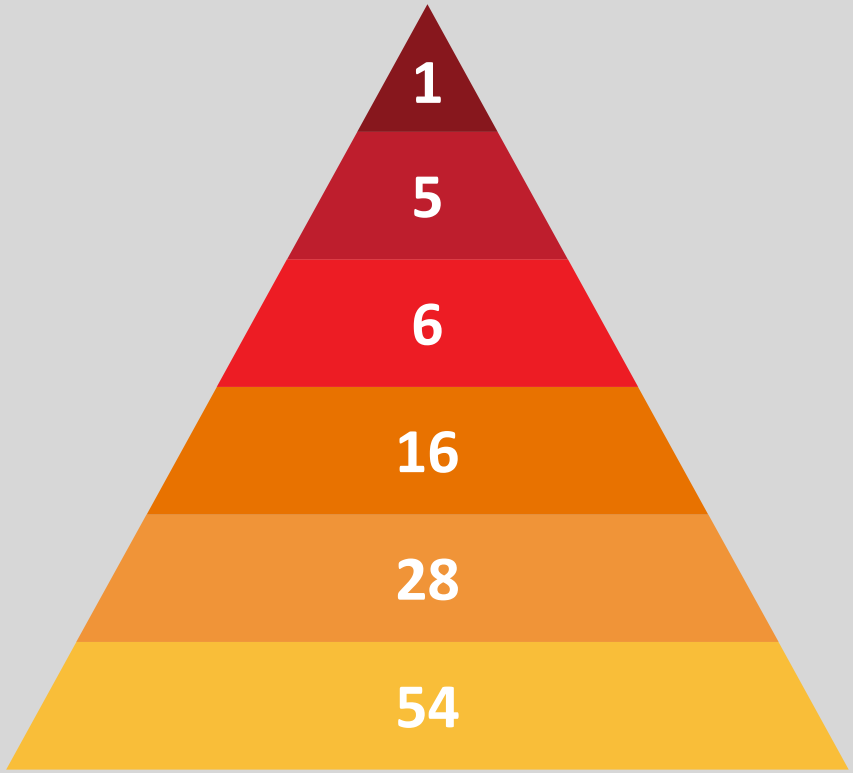
	Last Month	Year-to-Date
Total Injuries Reported	1	31
Recordable Case(s)	0	1
Restricted Duty Case(s)	0	0
Lost Workday Case(s)	0	8

2023 Incidents Summary



VS

2022



Close Calls

Date	Overview	Location	Description & Response
9/7	Faulty Kyle Switch	RCLO Frenchman Hill Rd	While replacing a faulty VAR sensor on a newly installed capacitor bank the lineman verified the kyle switches were in the open position. After opening the cutout an arc formed and went phase to phase. After about 10 seconds AR9 breaker, which was on a non-reclose, opened up. All employees were safe and no injuries were reported. The incident occurred due to a possible manufacturing defect and will be sent off to be investigated. Normal process involves use of a load break tool and it was not used in this instance due to the lack of likelihood for failure due to the newness of the equipment.
9/18	Bat Incident	ESC Warehouse	Due to ineffective netting at the ESC Warehouse, an aggressive bat was in the ceiling of the awning outside of the warehouse. The bat 'dive bombed' an individual and was dispatched by another member of the warehouse staff. The health district was notified. The bat did not make skin contact, no concern of rabies transfer or need to get the animal tested. Animal was double bagged and put in the trash. Netting should be repaired/replaced to prevent a repeat incident. This work will be encompassed with an upcoming capital project during the winter. Please contact the Safety Dept if you come in contact with a bat.

Close Calls

Date	Overview	Location	Description & Response
9/26	Faulty Chair	EHQ Conference Room G	While attending a meeting in Conference Room G at EHQ, an employee's chair popped and the tilt function failed, pitching the employee forward. The employee recovered without injury and the chair was removed to a corner of the room, marked with a note and Facilities was notified to remove it. Facilities removed the chair. Reminder to take a moment and inspect chairs for functionality prior to use.
9/27	Wildlife Activity	Midway-Martinez Rd	Due to deck blockage on the PR spillway, traffic is diverted to the Midway-Martinez road for access to the right bank area. Employee was driving south on Midway-Martinez road and a deer jumped out in front of their vehicle. Employee was able to stop in time and look for other deer. Reporting for awareness for others to be watching for wildlife while traveling this area. Great use of defensive driving techniques.

Vehicle Incidents

Date	Location	Description & Response
9/12	Jackknifed Trailer	**Jackknifed Trailer** Backhoe trailer was jackknifed to the point the trailer made contact with the back of the line truck. After inspection of the trailer, damages to the tongue of the trailer were found; bent and disfigured and will be going in for assessment. Reminder to use a spotter when backing trailers and report in a timely manner. This trailer is out of service for at least 2-3 weeks for repairs.
9/12	RCLO Royal Yard	**Damaged Vehicle Door** While going around a corner of a garbage bin, the turn was taken too tight and rubbed the corner of a large garbage bin. After inspection, damage was found on the tool door of the vehicle. Reminder to be aware of vehicle path. Avoid being distracted while driving and focus on task at hand, especially when operating in tight spaces.
9/13	HWY 243	**Broken Windshield** While driving to a project inspection and heading NB on Hwy 243, debris from a SB vehicle hit the windshield. Employee heard the impact but didn't see a break in the windshield until later in the day. Crack was where the rearview mirror connects to the windshield. Appropriate personnel were notified at the time and are coordinating the window replacement. This is a good example of good defensive driving techniques and timeliness in reporting.

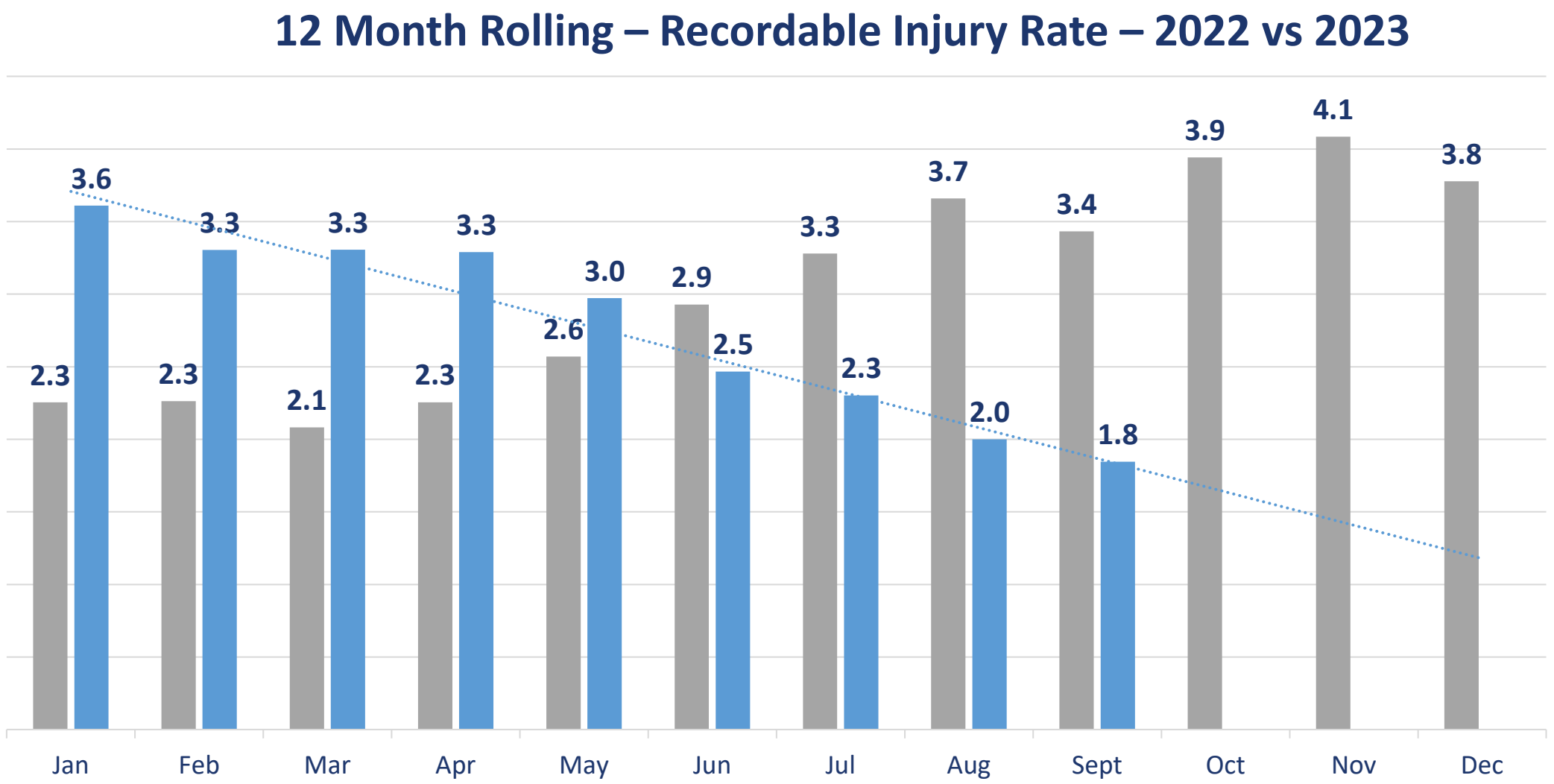
Vehicle Incidents

Date	Location	Description & Response
9/14	ESC	**Broken Window** Window came open on backhoe when traveling on trailer and broke. This highlights the importance of due diligence during 360 degree walk arounds, inspecting latches and locks on doors and windows of equipment to ensure they are properly secured prior to transport.
9/27	Hwy 243	**Rock Chip** While driving north on Hwy 243, a semi truck hauling a large trailer flipped a rock into the employee's work truck. Rock chip is small and located at the center of the windshield. Incident has been reported to Transportation. Reminder to use SharePoint and submit a work order via Vehicle Equipment/Problems.

Contractor Injuries & Incidents

Date	Overview	Description & Response
9/7	Ankle Injury	Contract worker sustained injury to right ankle while loading equipment for demobilization. Worker was unable to put weight on the ankle and required assistance from two fellow workers to walk. Injured worker was transported via company truck to Mattawa Clinic for evaluation and treatment. This incident is being investigated internally with Contractor safety personnel. The District will obtain an incident report when investigation is complete.

Leading & Lagging Indicators



Recordable Injury Projection

At the current injury rate, we will likely record

15

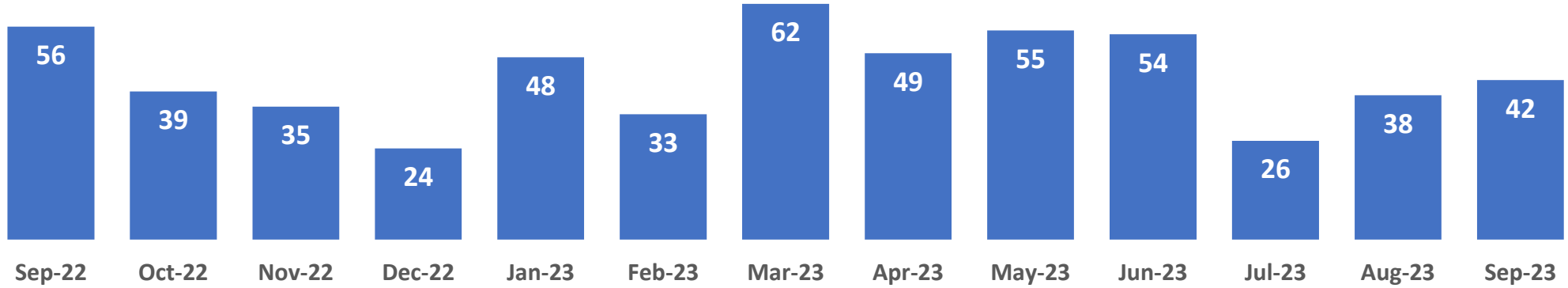
injuries on our OSHA Logs by the end of 2023.

$$\frac{\text{Total number of recordable incidents} \times 200{,}000}{\text{Total number of hours worked by all employees}}$$

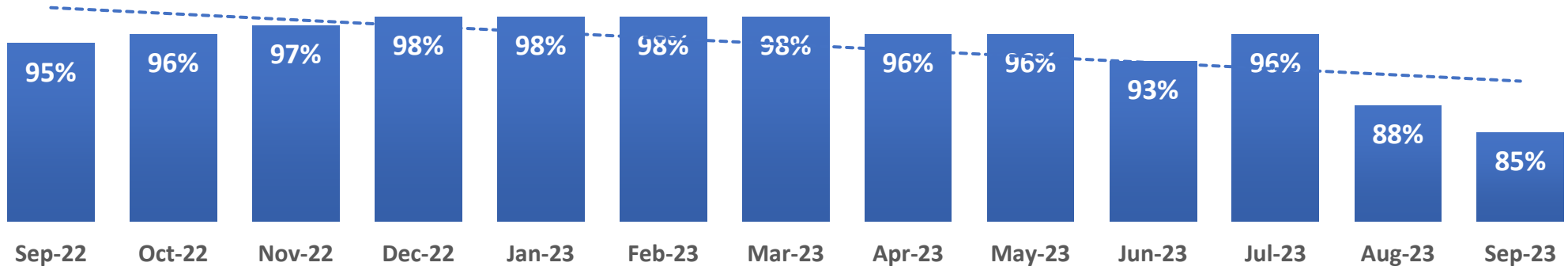
The “recordable injury rate” is a calculation that describes the number of employees per 100 full-time workers or per 200,000 hours worked that have been involved in an injury or illness that requires medical treatment beyond first-aid.

Leading & Lagging Indicators

Jobsite Reviews Conducted



Safety Meeting Attendance



Open Safety Action Items

Over 60 Days Old

As of August 2023	As of September 2023
Year 2017 = 1	Year 2017 = 1
Year 2018 = 2	Year 2018 = 2
Year 2019 = 1	Year 2019 = 1
Year 2020 = 3	Year 2020 = 3
Year 2021 = 5	Year 2021 = 5
Year 2022 = 4	Year 2022 = 4
Year 2023 = 5	Year 2023 = 5
Month Total = 21	**Month Total = 21**

No change from August 2023 to September 2023

What's an Action Item?

These are safety concerns that can be brought up anytime, including during a safety meeting.

They usually require some sort of further investigation or resolution, so they are assigned and tracked to make sure they're followed up on.

Elections for 2024 Chairs & Scribes

October is the month for nominations and elections for 2024 Chairs & Scribes!

Please reach out to people you think might be interested or a good candidate for a Chair or Scribe and encourage them to volunteer.

Please send the names of the new Chairs & Scribes to Kristen Dorsey, kdorsey@gcpud.org no later than October 30, 2023.

Thank You!

Safety@Grant

Microsoft Enterprise Agreement Renewal

October 24, 2023

Grant PUD

Powering our way of life.

Enterprise Agreement Renewal

- 3-year agreement has expired and due for renewal
- Agreement covers:
  - Operating systems on our computers and on servers
  - Office applications (Excel, Word, etc.), Teams
  - SQL Server, PowerBI, PowerApps, and much more!
- Reasons for cost increases
  - Increase in PowerApp usage/licensing costs
  - MS changes to free licensed apps to subscription fees
- Negotiated some benefits
  - 5-year agreement; typical renewal uplift is 8-14% costs; lock in for additional 2 years
  - Right-sized license usage to current usage

New Contract Details

- Previous 3-year contract came in at ~$2 million
- 2022 costs were ~$458K plus ~$634K in true-up costs
- New contract
  - 5-year at $4.1 million
  - Yearly cost $830K
  - Reduced deprecated licensing and over licensing of PowerApps
  - Added true-up costs to baseline contract
  - Level D pricing, (as opposed to Level A pricing)

Powering our way of life.

Power Delivery

Q3 2023 Business Report

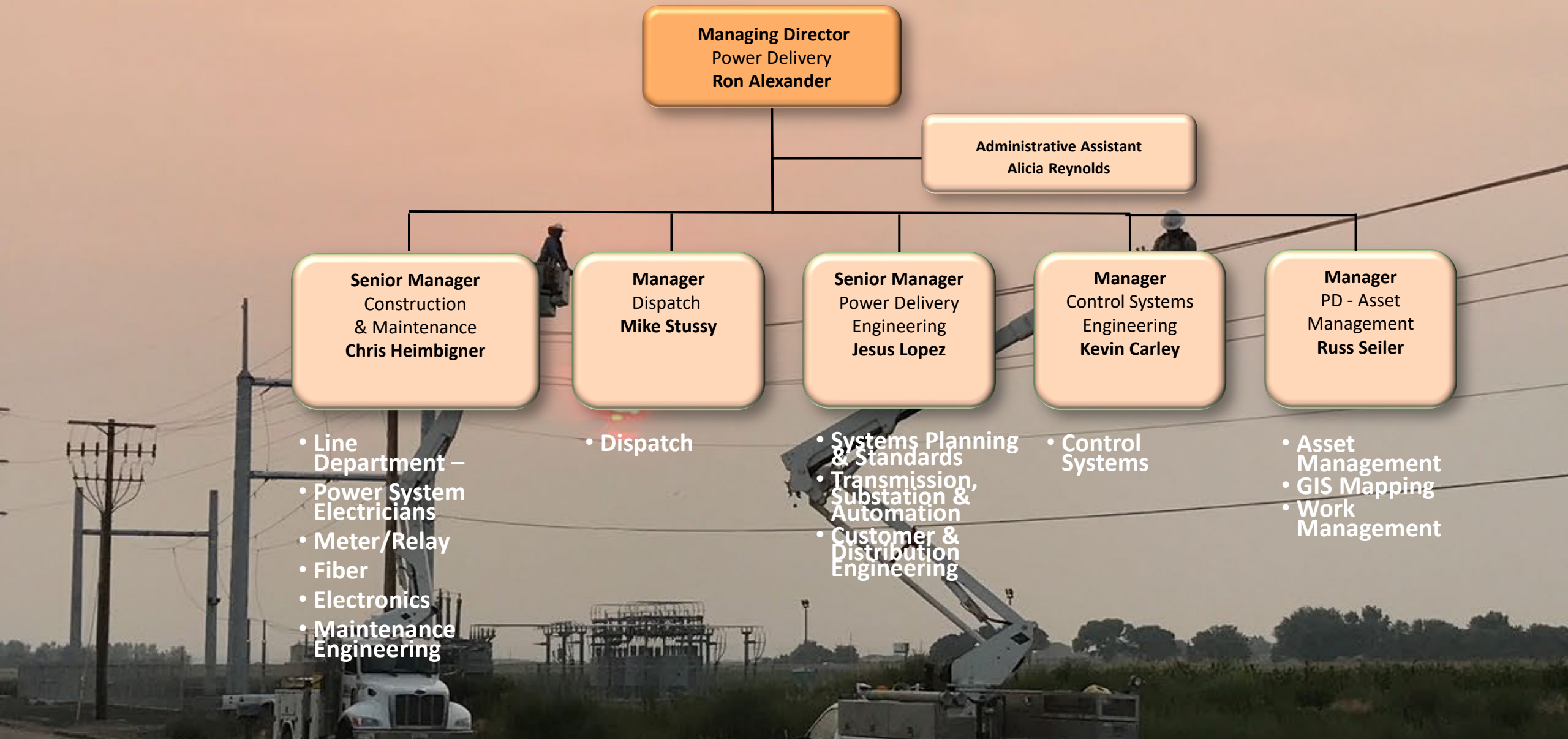
Grant County
PUBLIC UTILITY DISTRICT

Purpose and Goal

Purpose: Provide our customers a safe and reliable transmission and distribution electric system.

Goal: Achieve our purpose while championing a culture of safety and operational excellence with focus on our values of safety, innovation, service, teamwork, respect, integrity and heritage.

Structure and Personnel



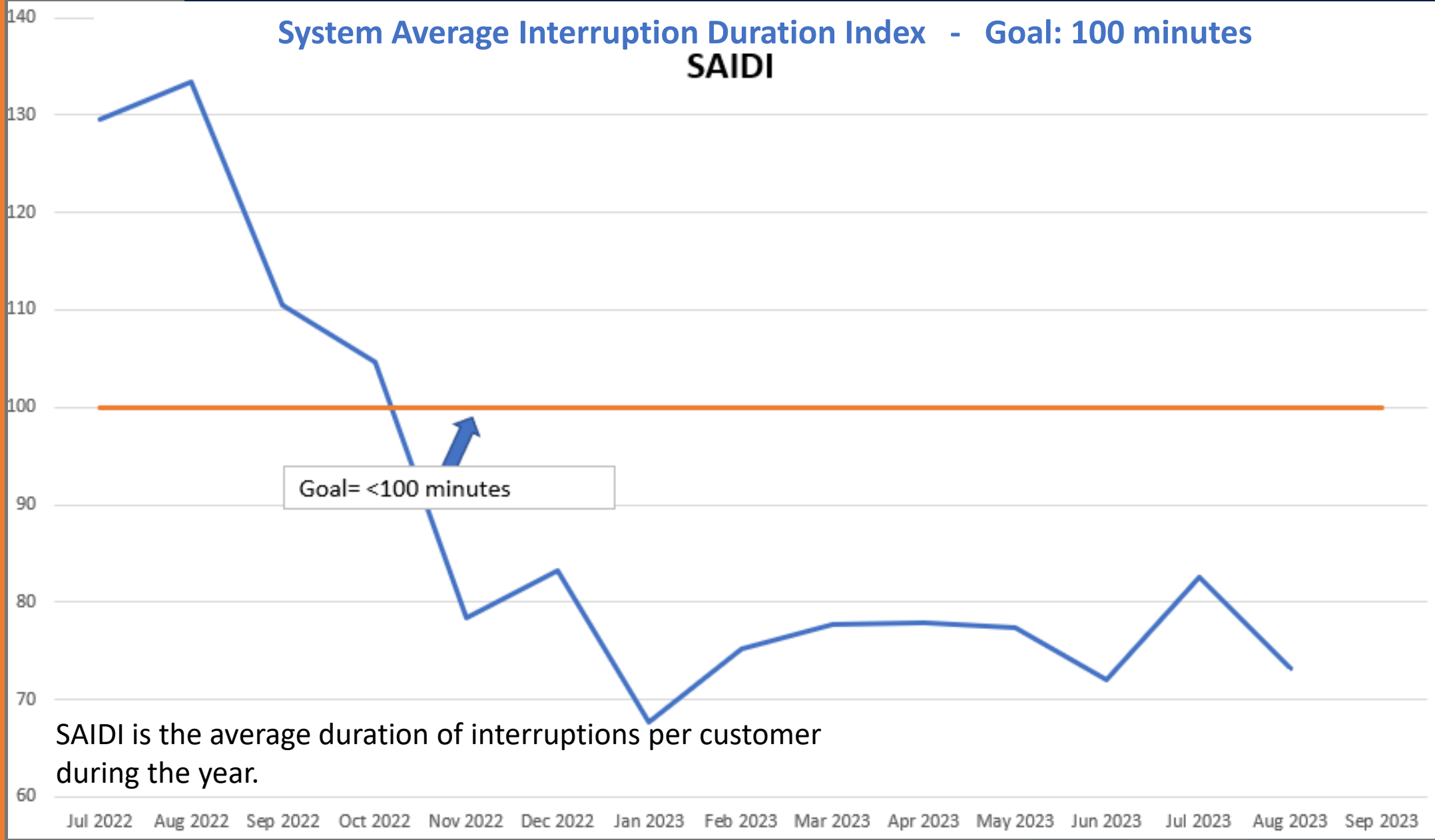
SAFETY

Month	By Cost Center	Safety Mtg. No Attended	Safety Mtg. No Potential	Safety Mtg % Attended	# JSRs	# Close Calls	# Vehicle Incidents	Non-Recordables
June	PD	2	2	100%	0	0	0	
July	PD	2	2	100%				
August	PD	2	2	100%				
June	C&M	102	103	99%	3		1	1
July	C&M	100	103	97%	3	1	3	1
August	C&M	101	101	100%	1	1	1	
June	PD Dispatch	15	16	94%				
July	PD Dispatch	16	16	100%				
August	PD Dispatch	15	16	94%				
June	PD Engineering	46	48	96%	4			
July	PD Engineering	44	47	94%	1	1		1
August	PD Engineering	47	48	98%	3			
			Q3 TOTALS:	98%	15	3	5	3

Note: No September data at time of this submittal.

Operational Performance - SAIDI

System Average Interruption Duration Index - Goal: 100 minutes

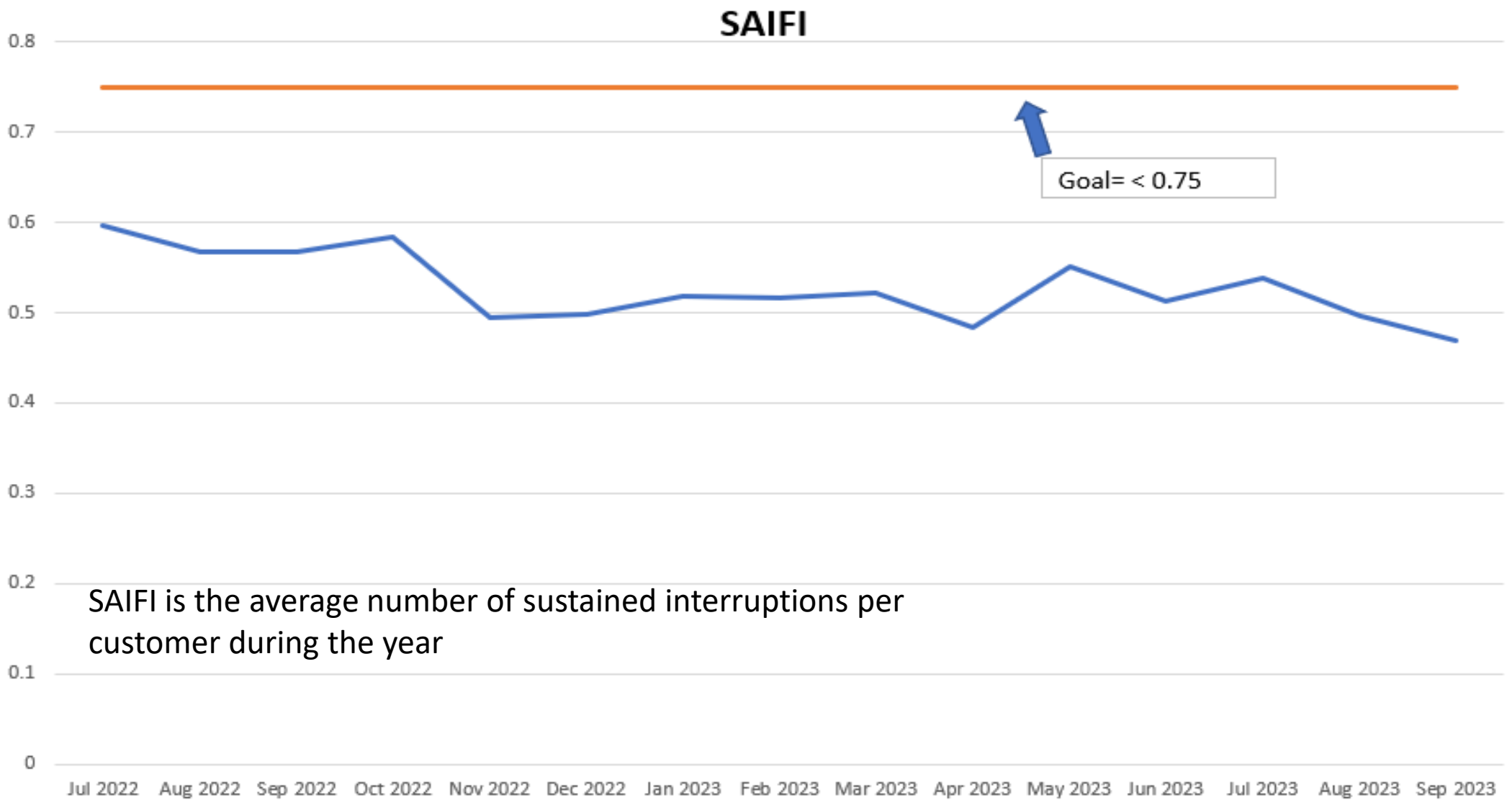


Month	SAIDI	Target
Dec 2021	124.403	100
Jan 2022	122.361	100
Feb 2022	120.573	100
Mar 2022	122.319	100
Apr 2022	132.05	100
May 2022	129.496	100
Jun 2022	133.322	100
Jul 2022	110.56	100
Aug 2022	104.565	100
Sep 2022	78.307	100
Oct 2022	83.247	100
Nov 2022	67.597	100
Dec 2022	75.249	100
Jan 2023	77.667	100
Feb 2023	77.802	100
Mar 2023	77.376	100
Apr 2023	72.022	100
May 2023	82.617	100
Jun 2023	73.226	100
Jul 2023	78.645	100
Aug 2023	73.712	100
Sep 2023	69.935	100

SAIDI is the average duration of interruptions per customer during the year.

Operational Performance - SAIFI

System Average Interruption Frequency Index - Goal: 0.75

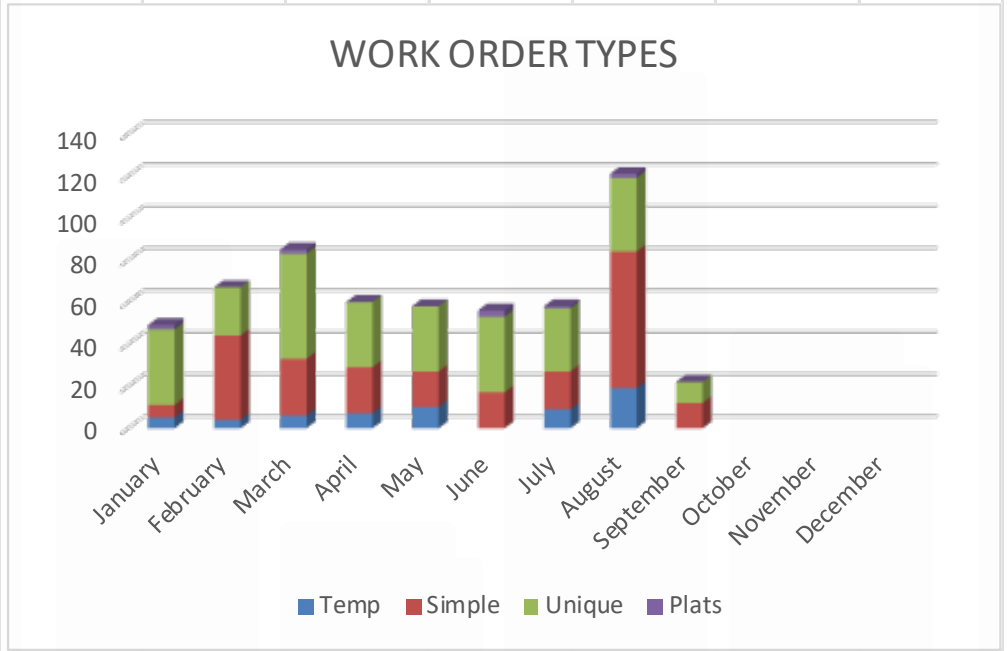


SAIFI is the average number of sustained interruptions per customer during the year

Month	SAIFI	Target
Dec 2021	0.75	0.75
Jan 2022	0.727	0.75
Feb 2022	0.708	0.75
Mar 2022	0.714	0.75
Apr 2022	0.77	0.75
May 2022	0.785	0.75
Jun 2022	0.826	0.75
Jul 2022	0.597	0.75
Aug 2022	0.567	0.75
Sep 2022	0.568	0.75
Oct 2022	0.583	0.75
Nov 2022	0.494	0.75
Dec 2022	0.498	0.75
Jan 2023	0.519	0.75
Feb 2023	0.517	0.75
Mar 2023	0.522	0.75
Apr 2023	0.483	0.75
May 2023	0.551	0.75
Jun 2023	0.512	0.75
Jul 2023	0.538	0.75
Aug 2023	0.497	0.75
Sep 2023	0.469	0.75

Operational Performance – Work Orders Rec'd

CUSTOMER ENGINEERING WORK ORDERS



2023	Temp	Simple	Unique	Plats	Total	Total
January	5	6	36	2	49	
February	4	40	23	0	67	
March	6	27	50	2	85	**201**
April	7	22	31	0	60	
May	10	17	31	0	58	
June	0	17	36	3	56	**174**
July	9	18	30	1	58	
August	19	65	35	2	121	
September	0	12	10	0	22	**201**
October					0	
November					0	
December					0	**0**
	60	224	282	10		
					Yearly Total:	**576**

POWER DELIVERY – INVESTING IN OUR PEOPLE!

- Working with Engineering to develop a 10-year plan for obtaining “Engineer V.” Update: Position Descriptions have been reviewing and currently being updated.
- Leadership development with Foreman Training and Management Human Performance training. Attended conference/classes in 2023.
- Training curriculum for Meter Relay Technicians to become “Craftsman.” Year 1 developed and being reviewed; Year 2 under development
- Meter Department being created within C&M. New apprenticeship opportunity for two people coming soon. Update: Position Descriptions submitted to HR for negotiation with IBEW
- Working toward a common “Year 1” training for all new apprentices with attendance at Big Bend Community College
- Working with Organizational Development on strategy and business cases to support Apprenticeships in Power Delivery
- 2024 - Bridge apprenticeships with Power Production needs and identify succession planning opportunities.

Power Quality – Investing in our Core Customers

- Now: Power Grid Optimization
- Distribution Line Crew
  - Completed
    - K5 1.5 mile rebuild/upgrade
    - J5 Reg site relocation
    - Smyrna area line size upgrade and Capacitor Bank replacement
    - L56 regulator replacement
    - Stratford Capacitor Bank replacements
  - On going
    - Various other projects will begin for capacitor bank dismantles and replacements into the winter months.
- K5 Feeder/Circuit. Modeling showed 9000 HP installed. Field audit showed 13,200 HP.
- AR9 Feeder/circuit. Modeling was showing 6000 HP installed. Field audit showed 10,400 HP.

Power Delivery Engineering

QTEP

- Right of Entries executed for Quincy transmission segments:
  - Columbia – Mountain View
  - Monument Hill – Rocky Ford
  - Monument Hill Loop
- Certified letters sent to Wanapum - Mountain View affected land owners
- Continuing design of switchyards and Quincy transmission segments

West Canal & Quincy Foothills

- Transmission contract bid awarded
- West Canal: Construction underway, foundations have been poured
- Quincy Foothills: preparing for start of construction

Big Bend Switchyard

- Project continues to stay on hold per customer request

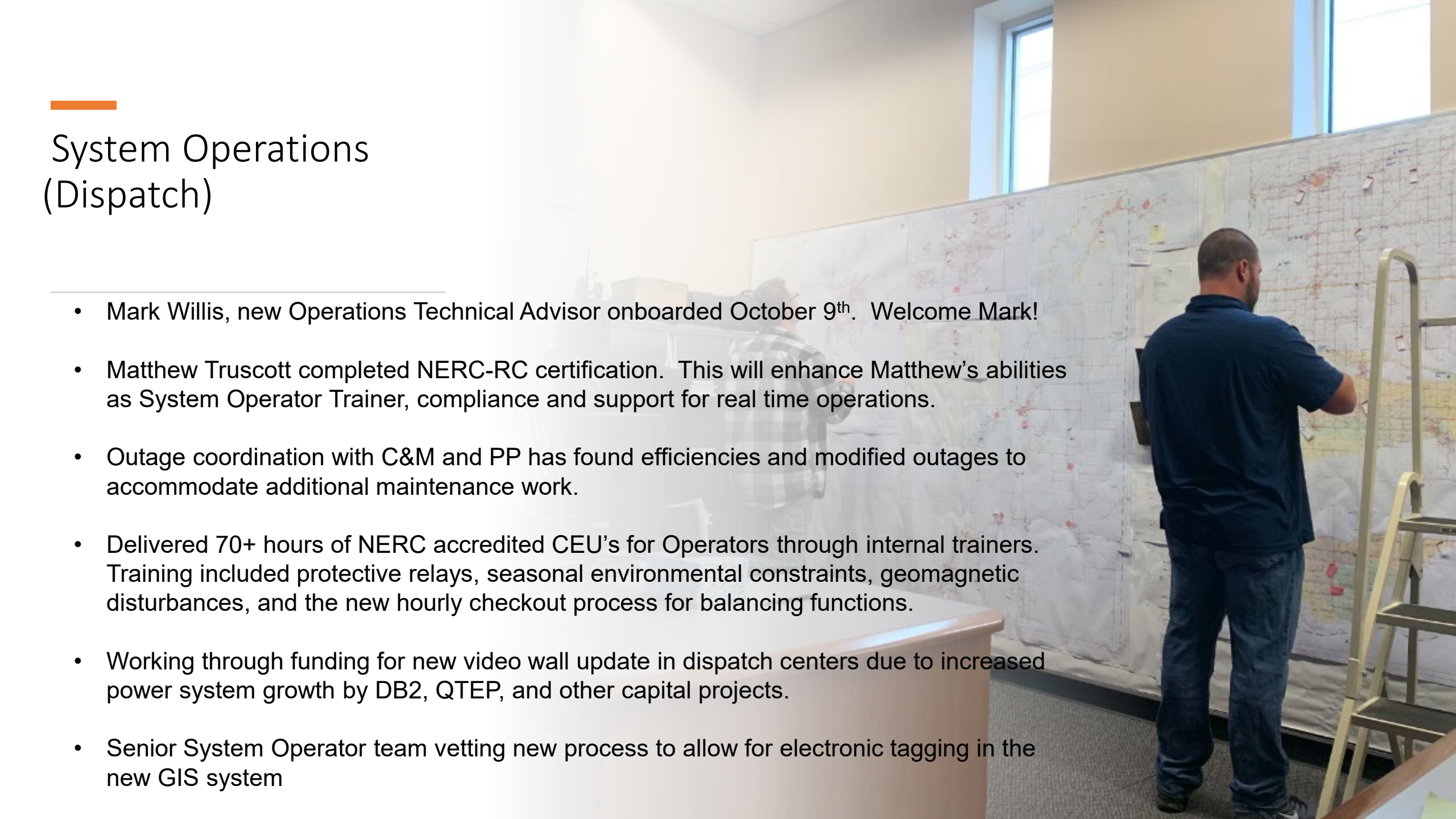
Ruff Substation (ECBID)

- Design on track for 100% completion mid-November.
- Energization milestone currently scheduled for July 2025.

Design Build 2

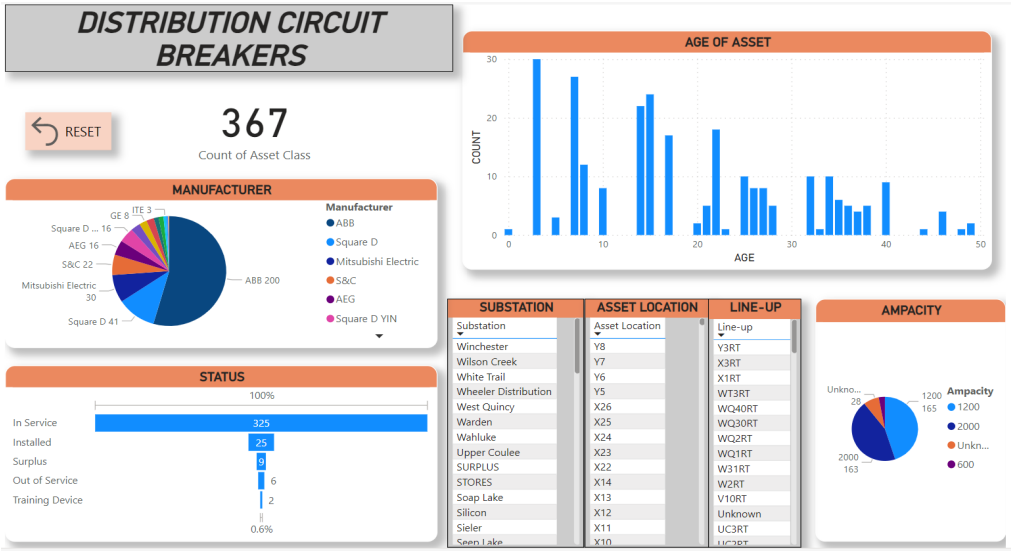
- Continuing technical support of program

System Operations (Dispatch)



- Mark Willis, new Operations Technical Advisor onboarded October 9th. Welcome Mark!
- Matthew Truscott completed NERC-RC certification. This will enhance Matthew's abilities as System Operator Trainer, compliance and support for real time operations.
- Outage coordination with C&M and PP has found efficiencies and modified outages to accommodate additional maintenance work.
- Delivered 70+ hours of NERC accredited CEU's for Operators through internal trainers. Training included protective relays, seasonal environmental constraints, geomagnetic disturbances, and the new hourly checkout process for balancing functions.
- Working through funding for new video wall update in dispatch centers due to increased power system growth by DB2, QTEP, and other capital projects.
- Senior System Operator team vetting new process to allow for electronic tagging in the new GIS system

PD Asset Managment



GIS:

- Dispatch tags now in GIS electronically – huge win for the team and special thanks to Elisabeth Lauver
- John Butterly temporarily assisting team to support mapping updates
- Data cleanup. Includes all primary conductor added into GIS to help with system modeling

Work Management:

- Adding basic maintenance tracking to our Asset Apps
- Working with CI team to develop process to capture data for new assets and standardizing the process.

Asset Management:

- Evaluating the T&D wood pole test and treat process
- Wildfire risk workshops being evaluated and planned

Clevest:

- Testing now in preparation for user training early next year.

Control Systems Engineering

- **Energy Management System (EMS) ongoing**
  - Configuring AGC with OSI
  - Testing L&G Protocol converter in the lab, working with both OSI and ASE
  - Starting EMS configuration for Quincy Foothills and West Canal

- **Operational Cyber Security**
  - Building EACMS environment to consolidate several CIP tools spread across multiple End of Life stand alone servers to a virtualized platform
  - Completing Firewall deployments to all substations, 4 stations remaining before the end of 2023
  - Deployed standalone vulnerability scan tool Tenabale to perform active scanning of assets prior to classifying as CIP protected.

- **Energy Accounting System (EAS)**
  - Completed OATI WIT upgrade and CAISO EIDE upgrade
  - Completed integration testing with SPP to support the Western Resource Adequacy Program (WRAP) for the 11/1 go live
  - New Hire on 10/23 to backfill for Sal Mugnos who will be retiring in 2024. Vyacheslav "Slavik" Novitskiy

Power Delivery: Construction and Maintenance Update

Grant PUD

Powering our way of life.

Meter and Relay Shop

- 23 distribution station relay testing complete.

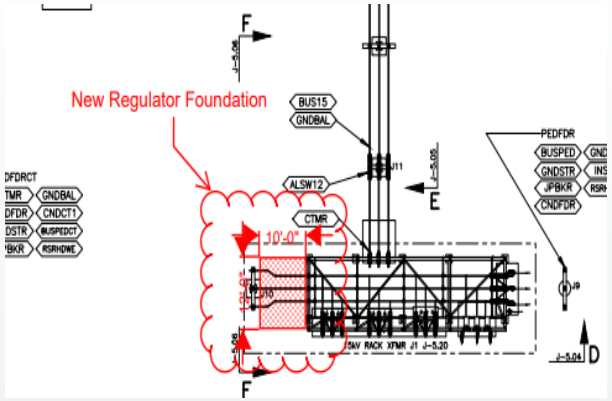
- 1 transmission relay testing. Ancient Lakes scheduled for November.

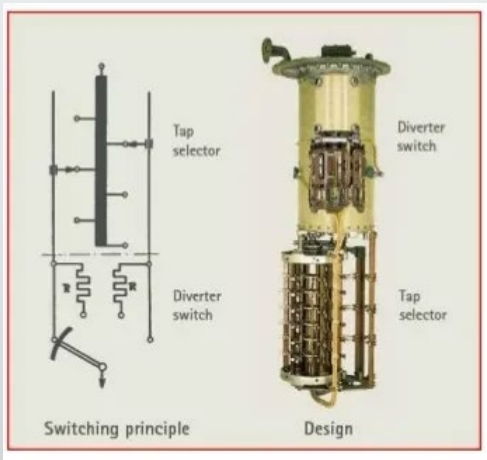
- Baird Springs substation commission is near completion. (WEG to repair CT on the transformer)

- Fall Regulator checks complete.

- CT/PT setting checks complete for all Transmission stations.

Power System Electricians





- PSE Apprentices completed final year of NUITF program with amazing scores: Blake Reeves, Dakota Delong, Shane Melseth
- CDL Training-2 PSE currently enrolled and last of PSE without CDL will be completed by May 2024.
- Substation Crew is coordinating with Power Production Hydro Mechanics to install Three Phase Regulator at Jericho Substation.

For our customers:

- Finishing up Annual Maintenance for 2023
- Circuit Switcher Interrupter Replacement at Cascade Valley
- 12 Year Diverter Switch Maintenance at Frenchman Hills and Rock Ford Transmission

Line Crew

Staffing

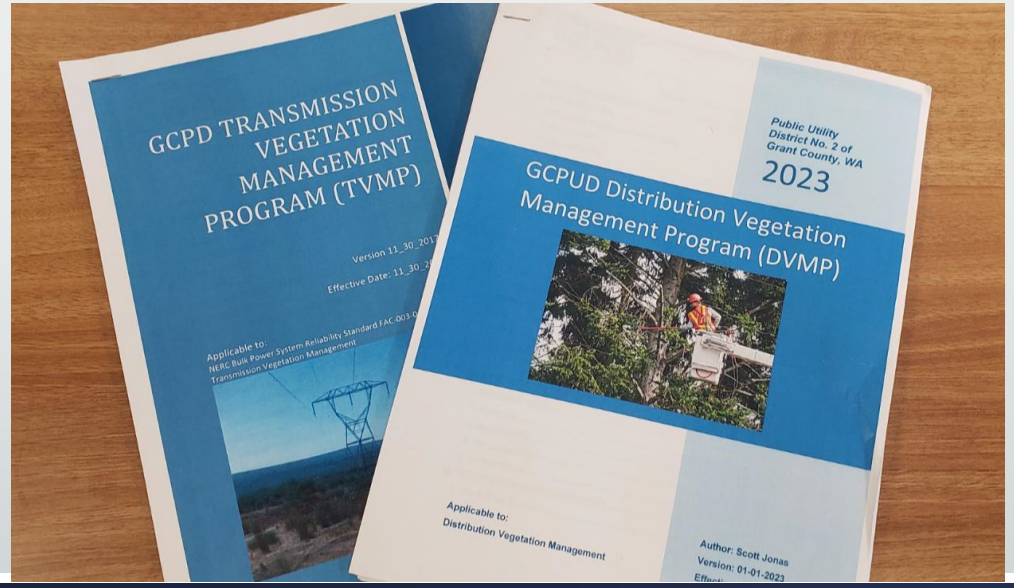
- Tyler Kautz and Tanner Pugh completed their Apprenticeships
- 2 new Linemen Jordan Bennett and Carter Stout

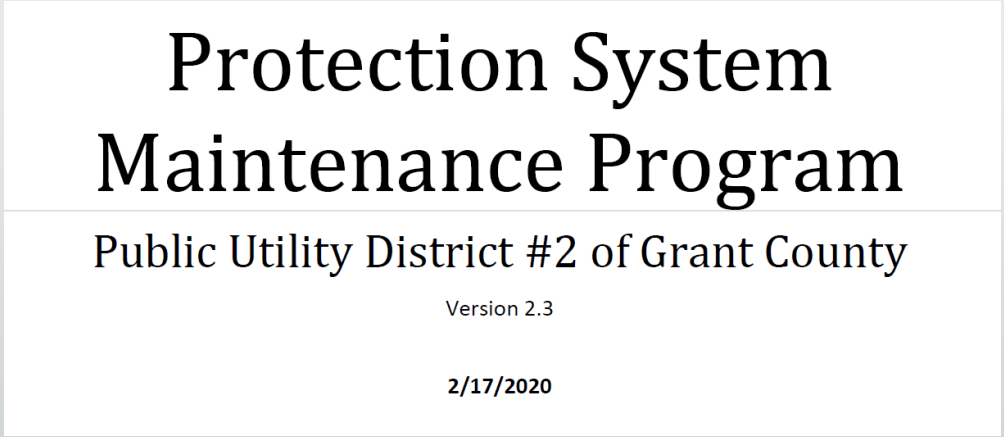
Projects

- Grant PUD line crews are working on customer service work orders (4-6 week backlog)
- District Improvement crew has completed H8 improvements, R297 rebuild in Crab Creek
- Transmission crew is working on maintenance
- 4 dock crews are working on fiber make ready, B26 rebuild, and Larson project

PD Maintenance Engineering

- Doble inside view is up and running, training completed. Will be performing a trial of Doble oil testing services.
- Upcoming maintenance outages for 3 transmission stations.
- Upcoming work on two transmission breakers at Sand Dunes.
- New portable thumper for meter relay shop, training complete.
- Field repairs and improvement in process at Jericho, Cascade Valley, Mcdonald, Seep lake, Upper Coulee.






Thank You For Your Ongoing Support
Grant County
PUBLIC UTILITY DISTRICT

Power Production

Strong Performance……

Quarterly Commission Briefing 10/24/2023

Ben Pearson
Kasey Grant
Dale Campbell

Grant PUD

Powering our way of life.

Fulfilling Our Mission Champions of Safety … Guardians of Power

- Purpose: Provide **safe, secure, economical, reliable and compliant power generation** under the Priest Rapid Project Federal Energy Regulatory Commission (FERC) License Project No. 2114 while supporting the Wanapum relationship.

- Goal: Execute the aforementioned tasks while championing a **culture of safety and operational excellence** with continuous focus on the guiding values of safety, innovation, service, teamwork, respect, integrity, and heritage.

2023 Q3 Assessment

Key Operational Metrics

- Safety Execution
- Plant Performance

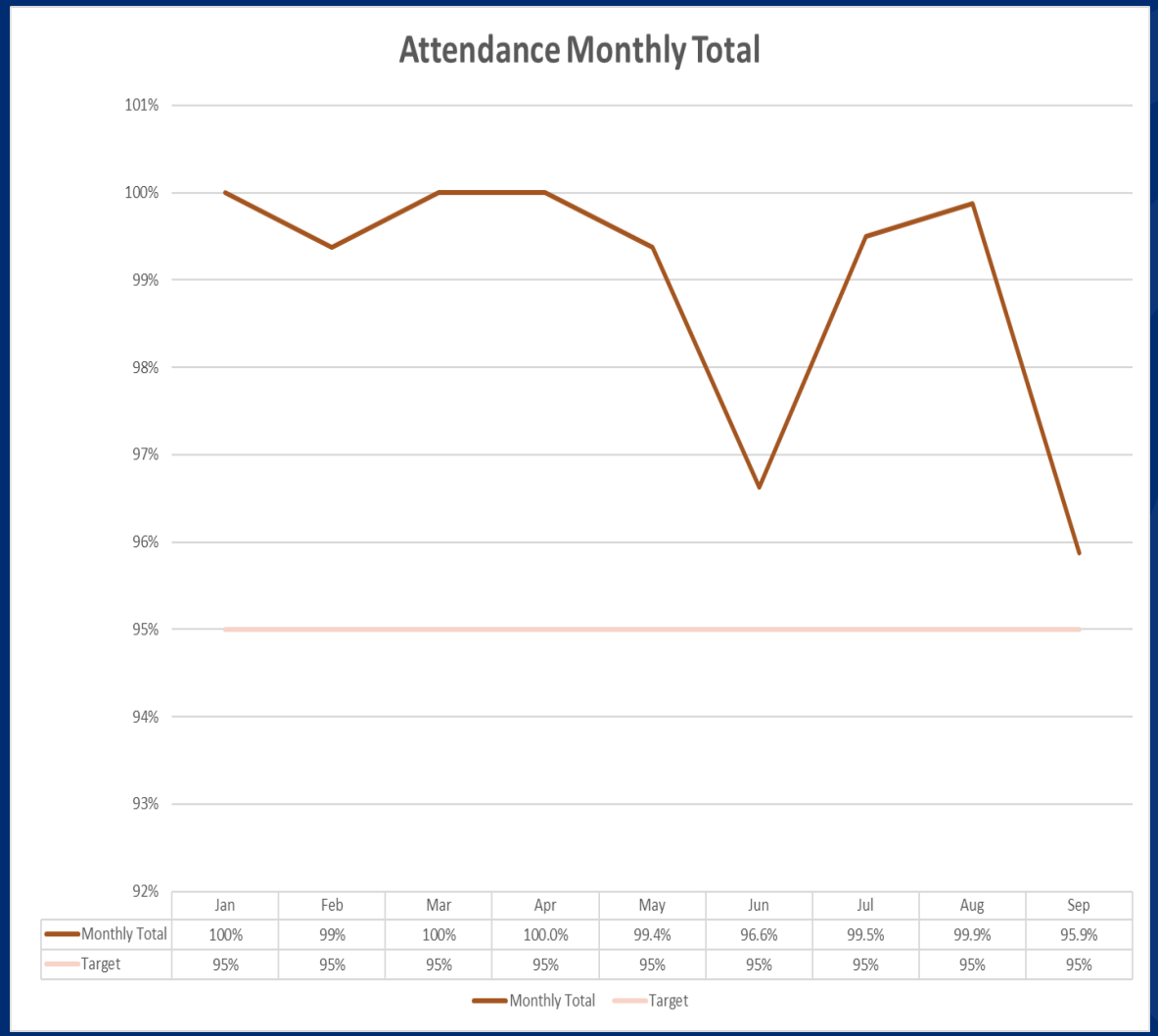
Short & Long Term Focus

- Maximo Update
- Capital Projects
- Strategy Deployment
- Annual Loss Prevention Site Inspection

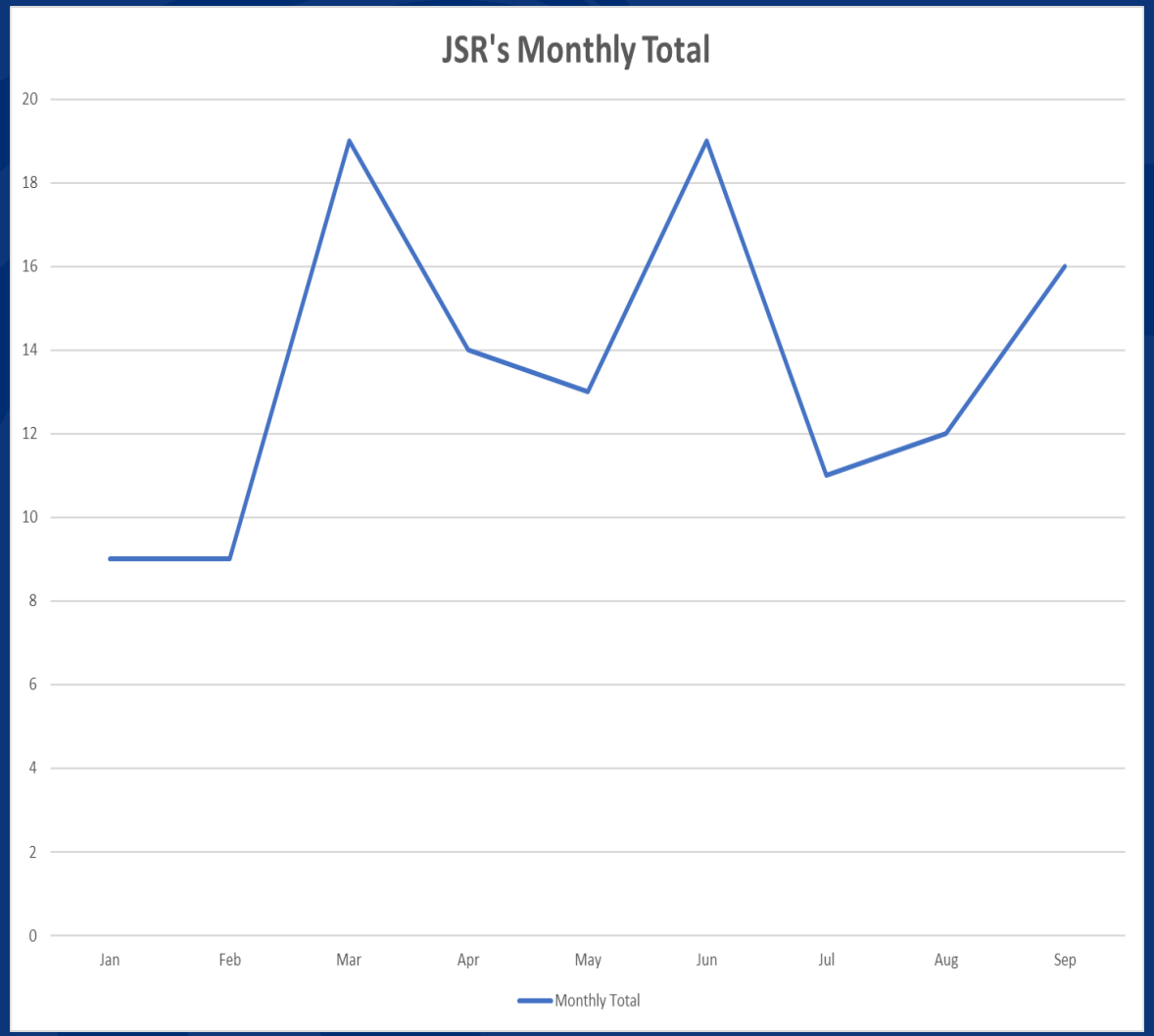
Team & Next Quarter

- Personnel
- Q3 Forecast

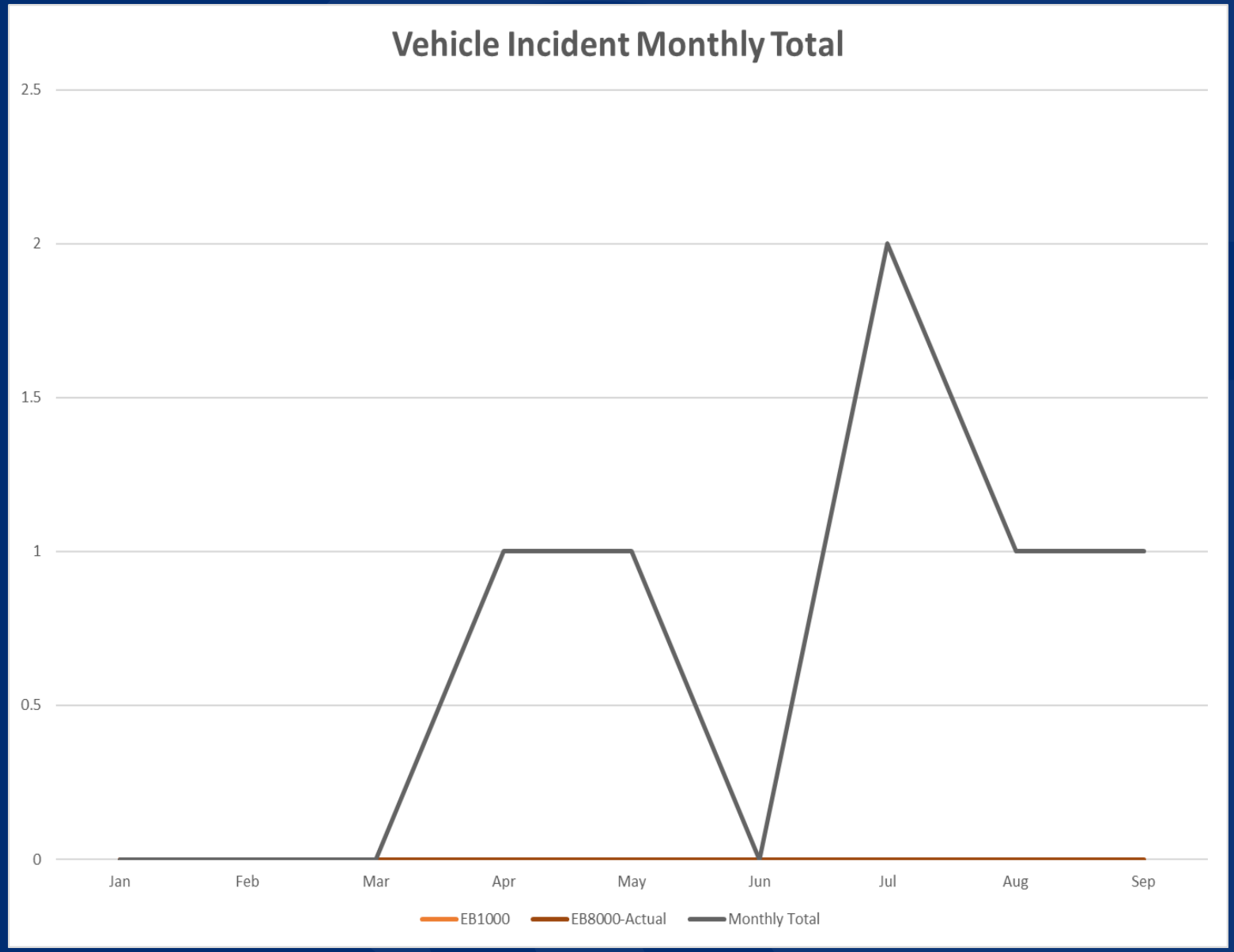
Safety Champions



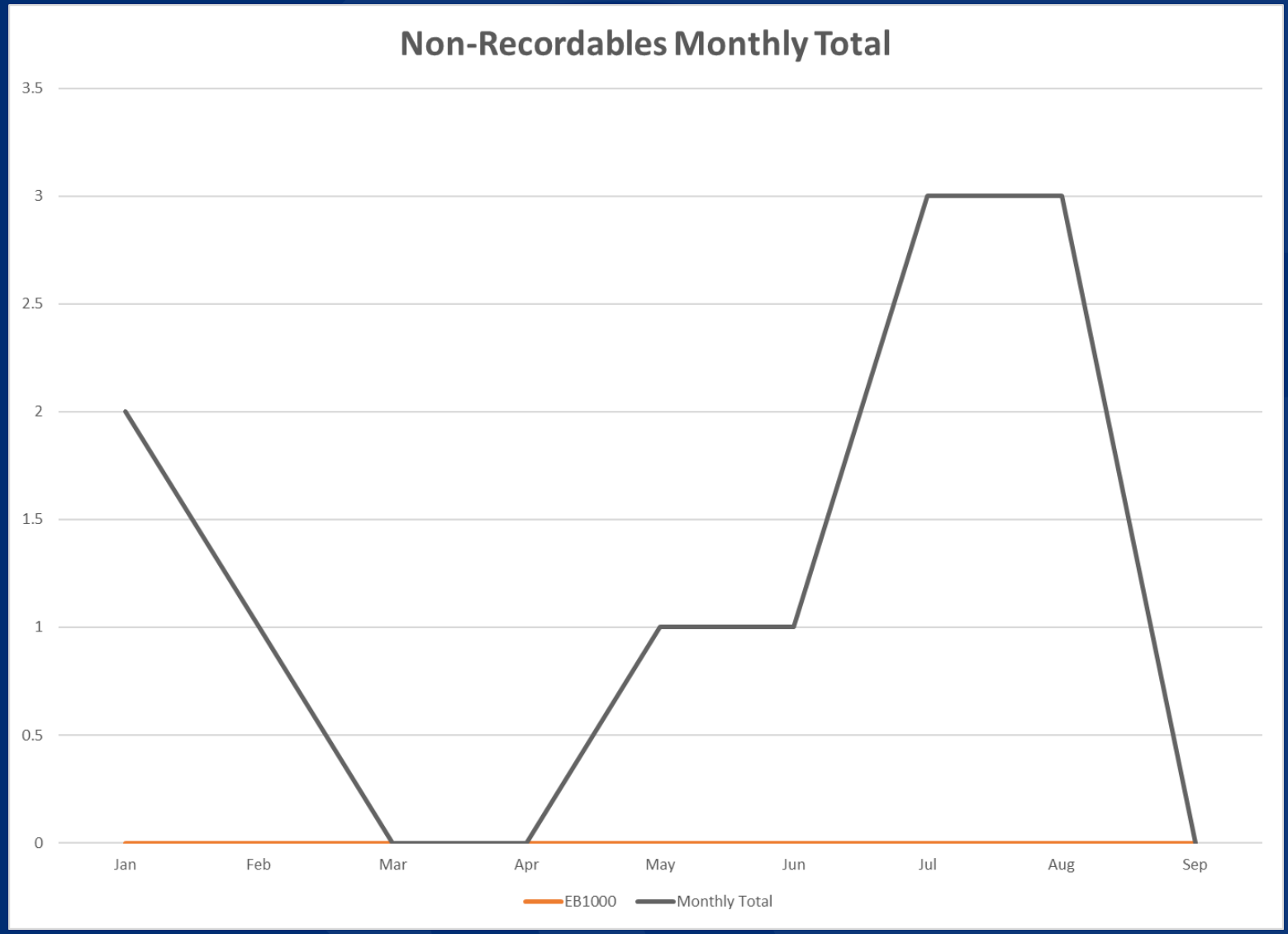
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Monthly Total	100%	99%	100%	100.0%	99.4%	96.6%	99.5%	99.9%	95.9%
Target	95%	95%	95%	95%	95%	95%	95%	95%	95%



Safety Champions



Safety Champions



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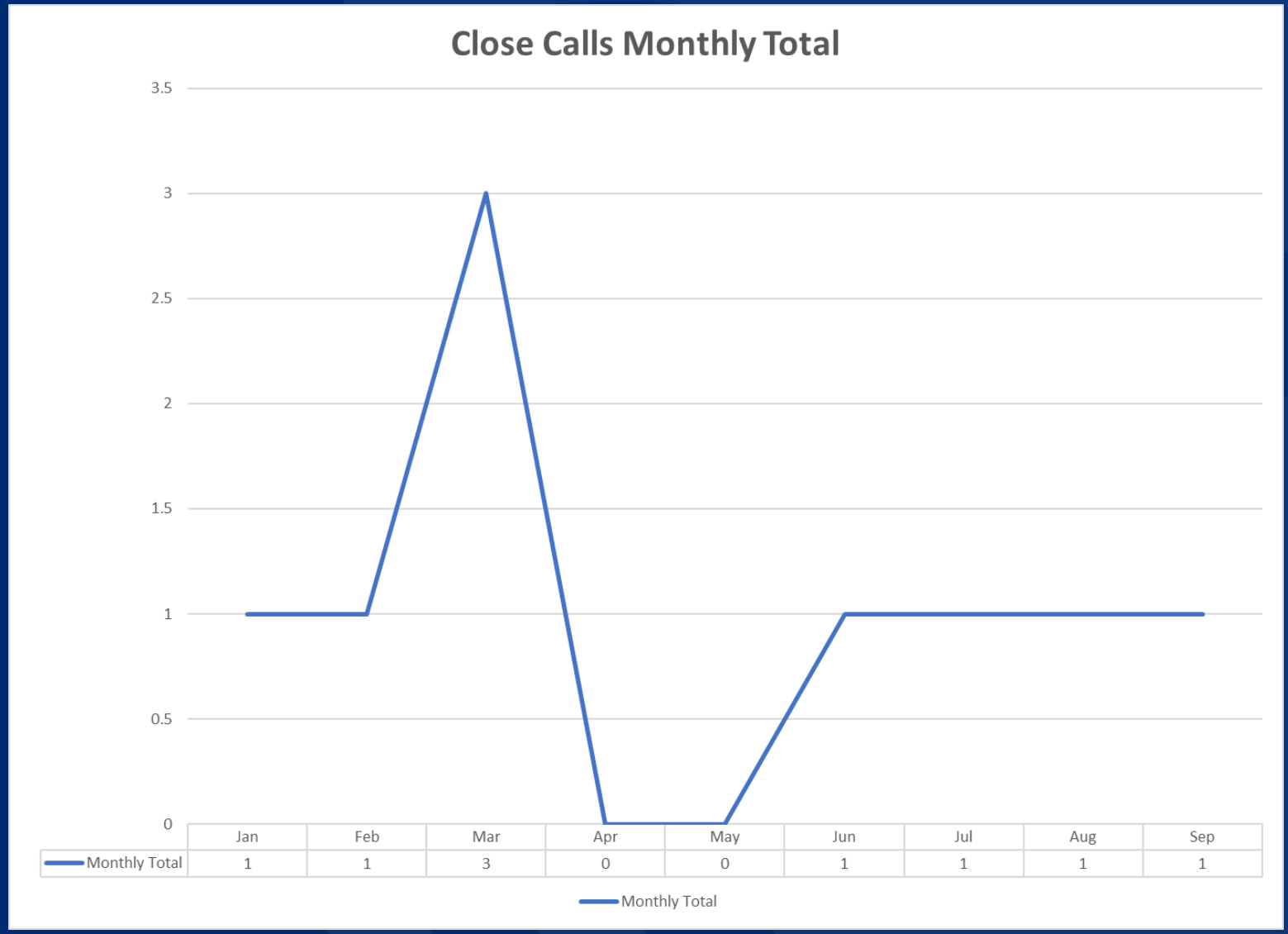
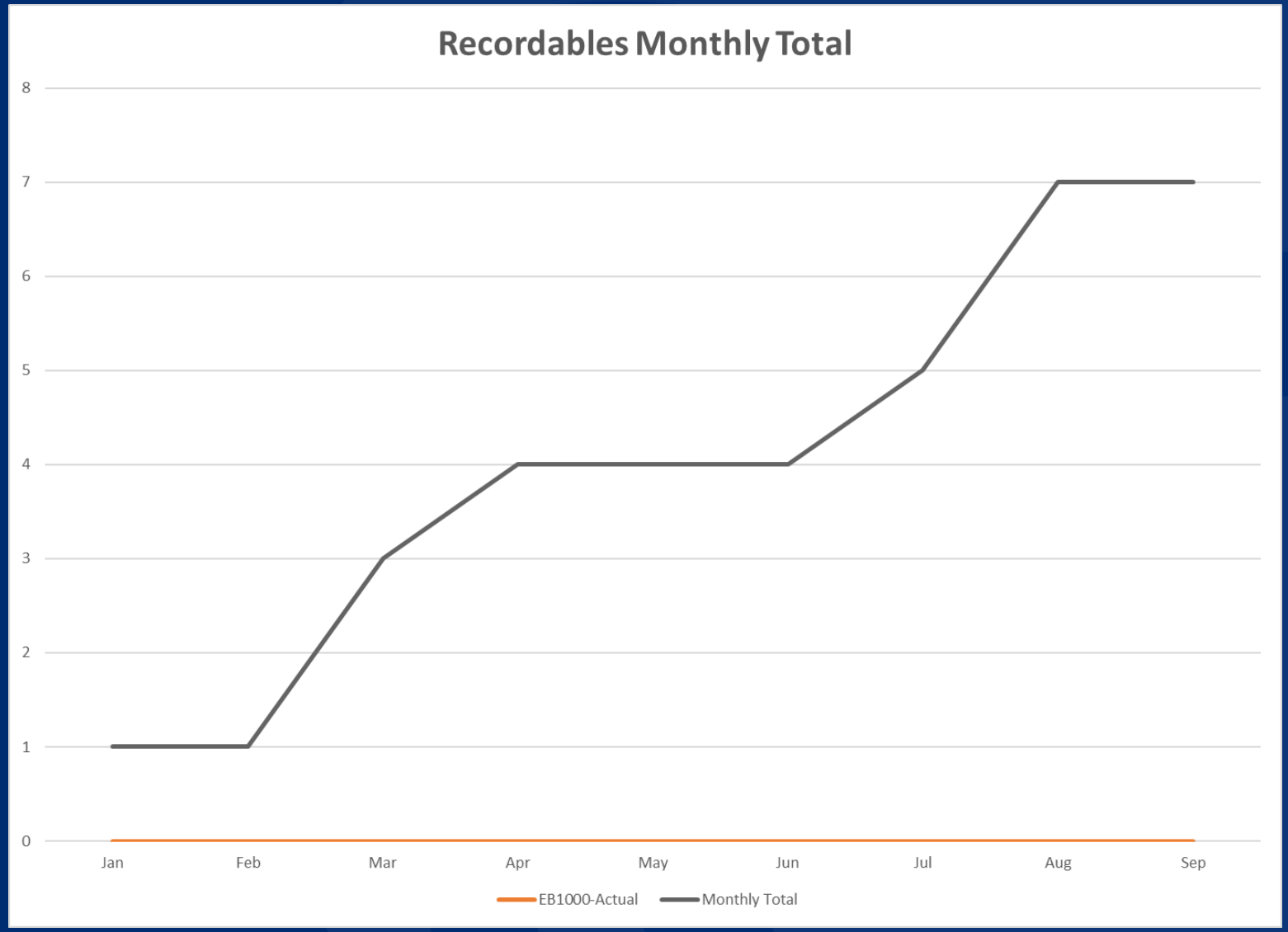


Safety Champions

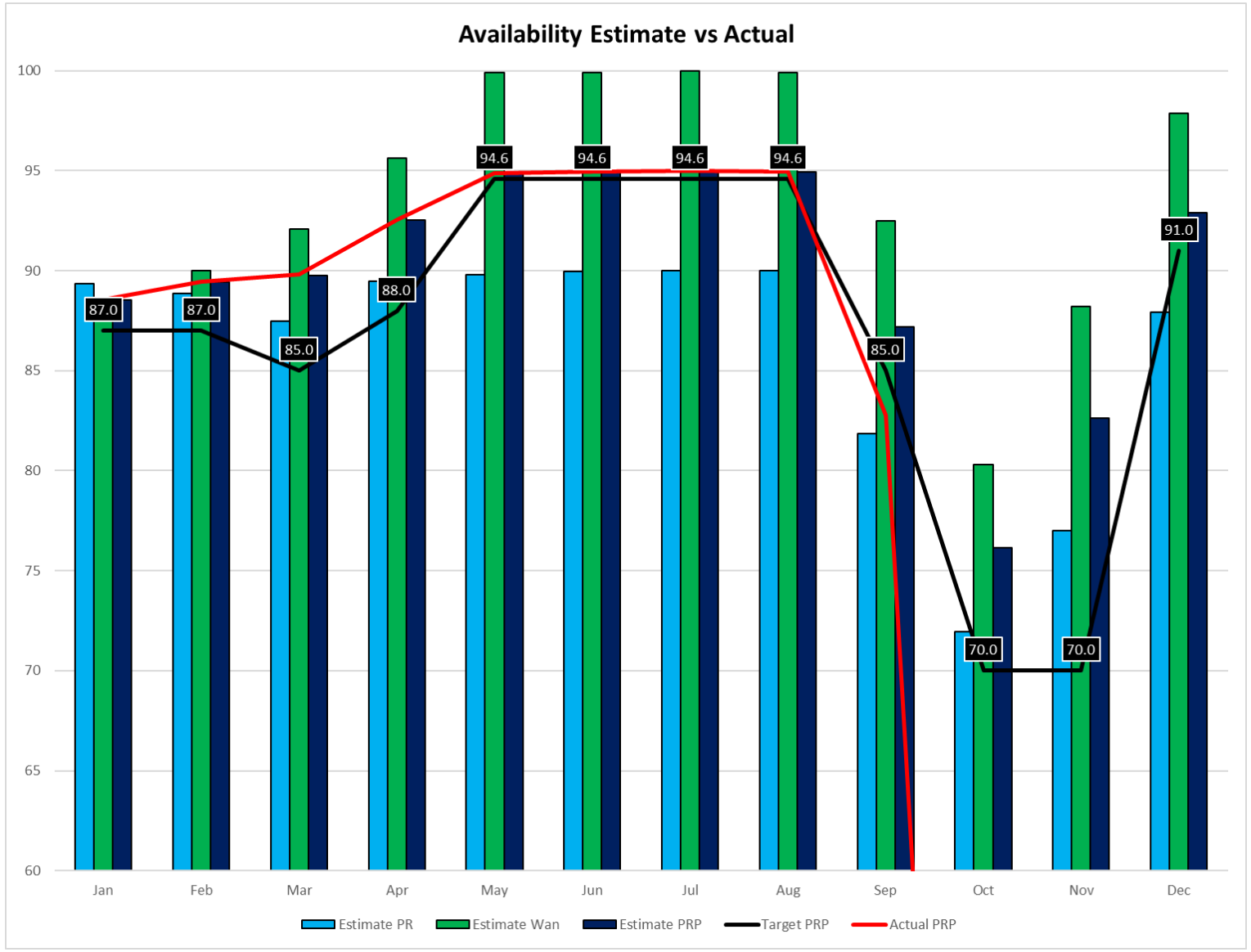


Plant Performance:

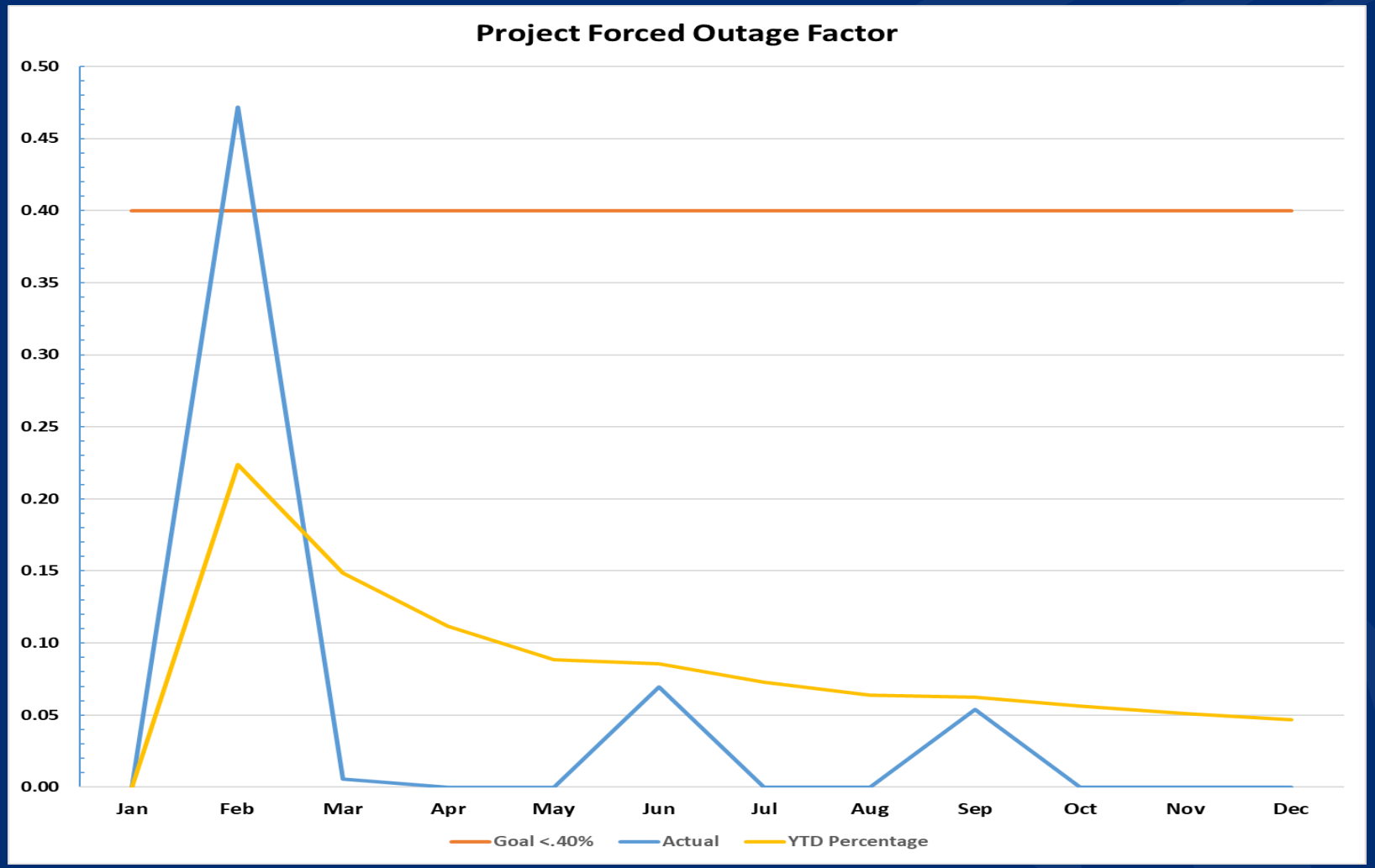
Unit Availability

Targets met 8 of 9 months (Missed September)

Transformer E: failed High side Bushing resulted in longer maintenance outage discovered during planned maintenance

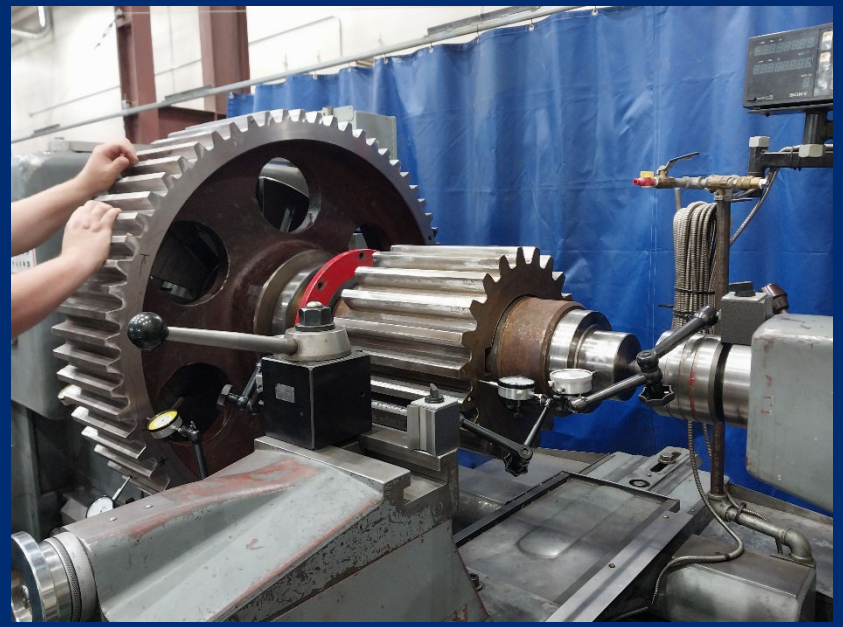


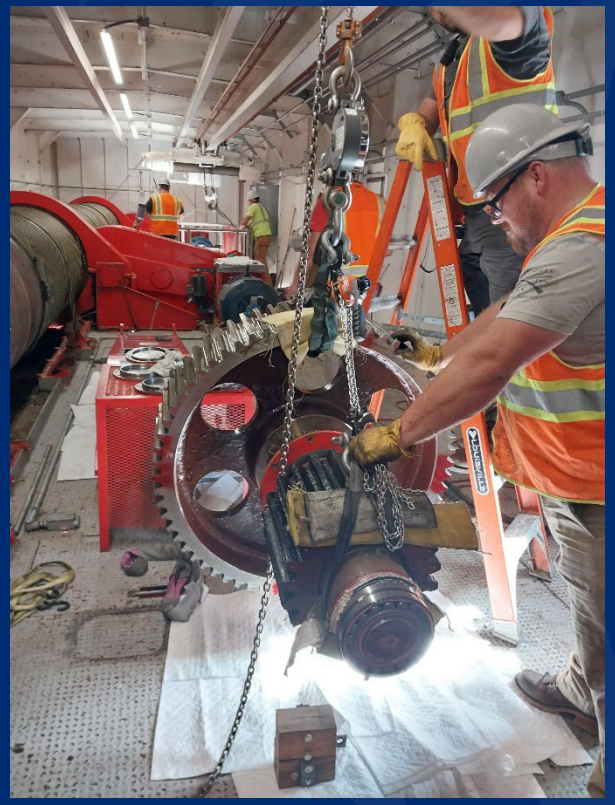
Plant Performance

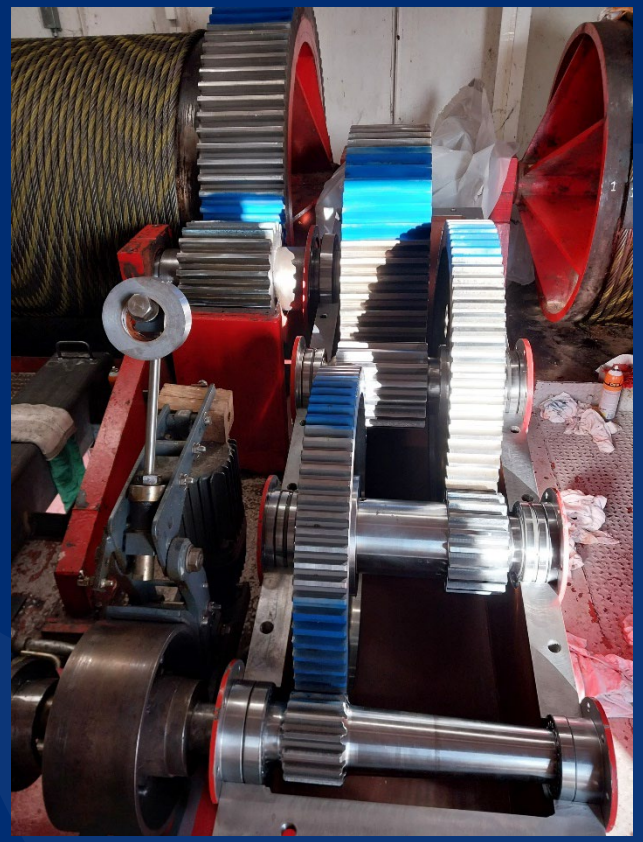


0.07% YTD

Priest Rapids 390 Ton Crane Repair







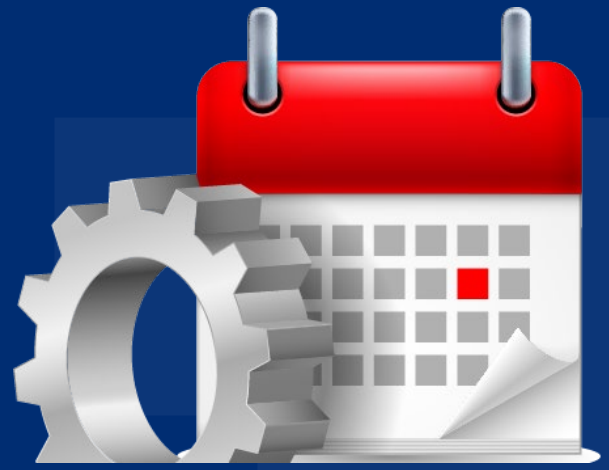
Other Major Plant Work

- Unit Overhauls in Progress (W-05, P-9)
- Transformer Maintenance
- Fish Ladder Annual Maintenance
- Spillway Annual Maintenance
- Insurance Inspection:
  - Positive feedback from inspectors. Still have capital improvements to improve Largest Risk Drivers

Asset Management - Updates

- Developing long term asset replacement plan for Power Production.
  - Will allow us to plan for future asset replacement needs and ensure our equipment is reliable and effective.

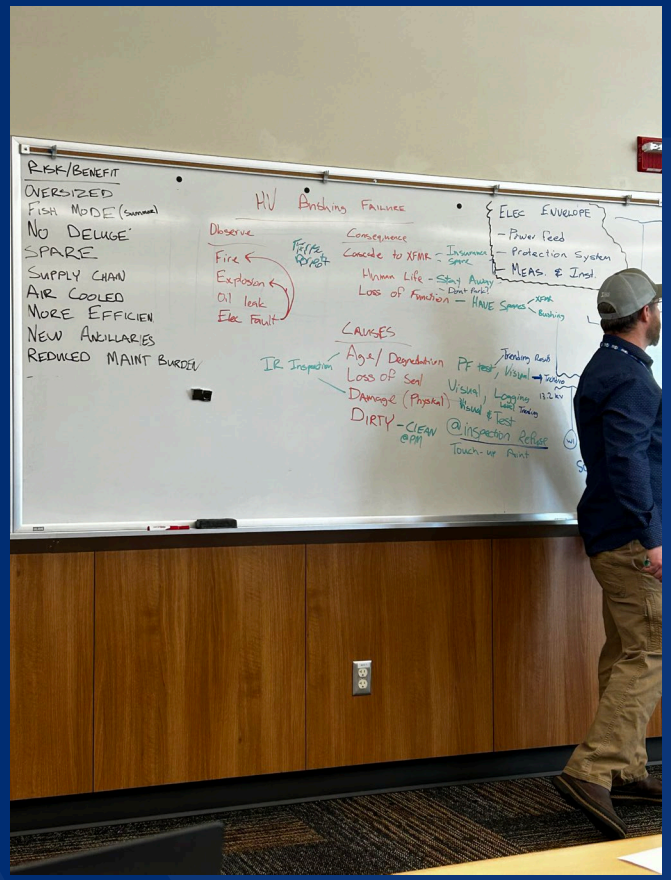
- Continued Maximo Training with Employees.
  - Focused on standardizing how craft interface with Maximo and creating consistent outcomes with process and data.



Generator Step-Up Transformer Asset Strategy

- Asset strategy work is wrapping up for the Generator Step-up transformers.
  - Follow up actions related to pare Parts Storage and Management, Oil Sampling Practices, and potential upgrades to Dissolved Gas Analysis monitoring equipment.

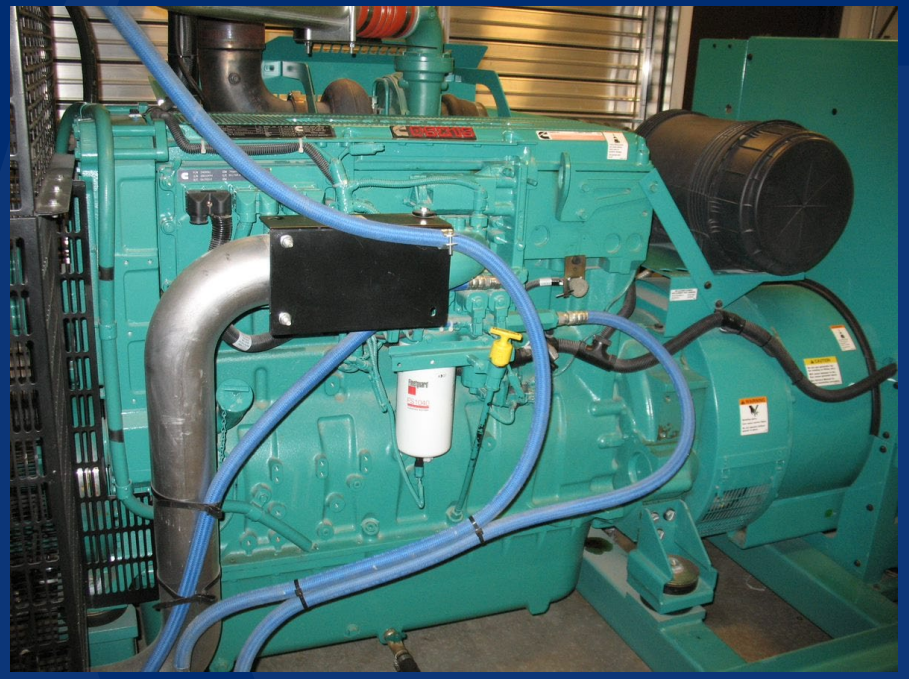
- Continued work occurring to better understand our risk exposure with current mitigations in place around the transformers.



Acclimation Facilities

- Continuing to develop asset registries.
  - Currently focused on Nason Creek.

- Starting Asset Strategy for Production Wells.
  - Asset Strategy will cover asset condition, associated risks, maintenance plans, and long-term replacement needs.



Nason Creek Emergency Diesel Generator

Capital Project Update
Investing in Assets

Priest Rapids Right Embankment Improvement Project

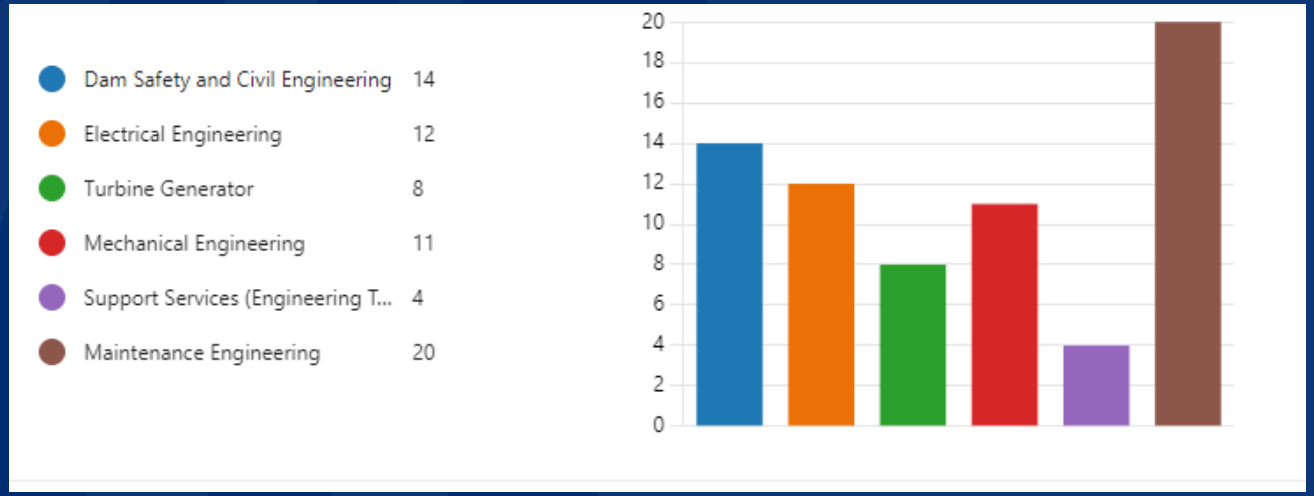
- All Significant Construction Complete
- Revegetation ongoing

- PR Unit Rehab
  - 5th Unit On Schedule

- Lock Out/ Tag Out
  - Project is on track

2023 Power Production Engineering Customer Service Survey

What work group within Engineering do you work with the most? (Choose all that apply)



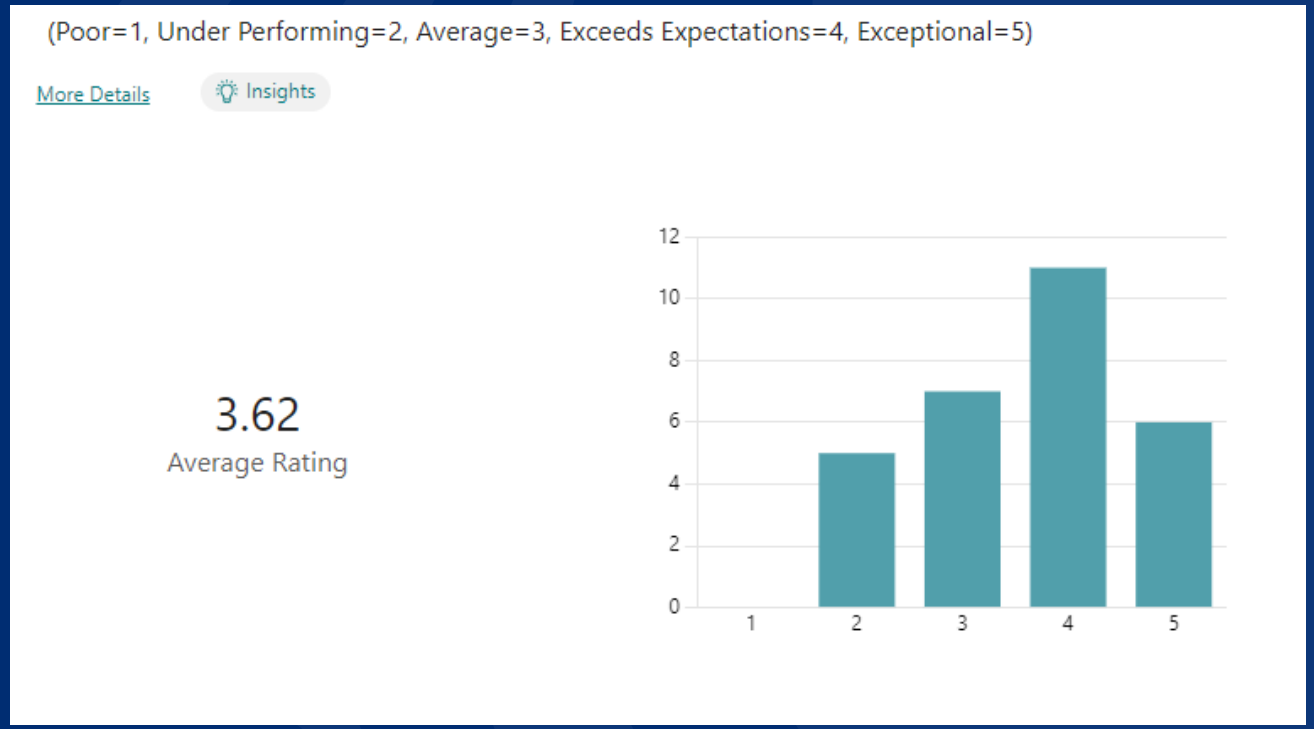
30 out of 64 people responded.

2023 Power Production Engineering Customer Service Survey

What department do you work in?

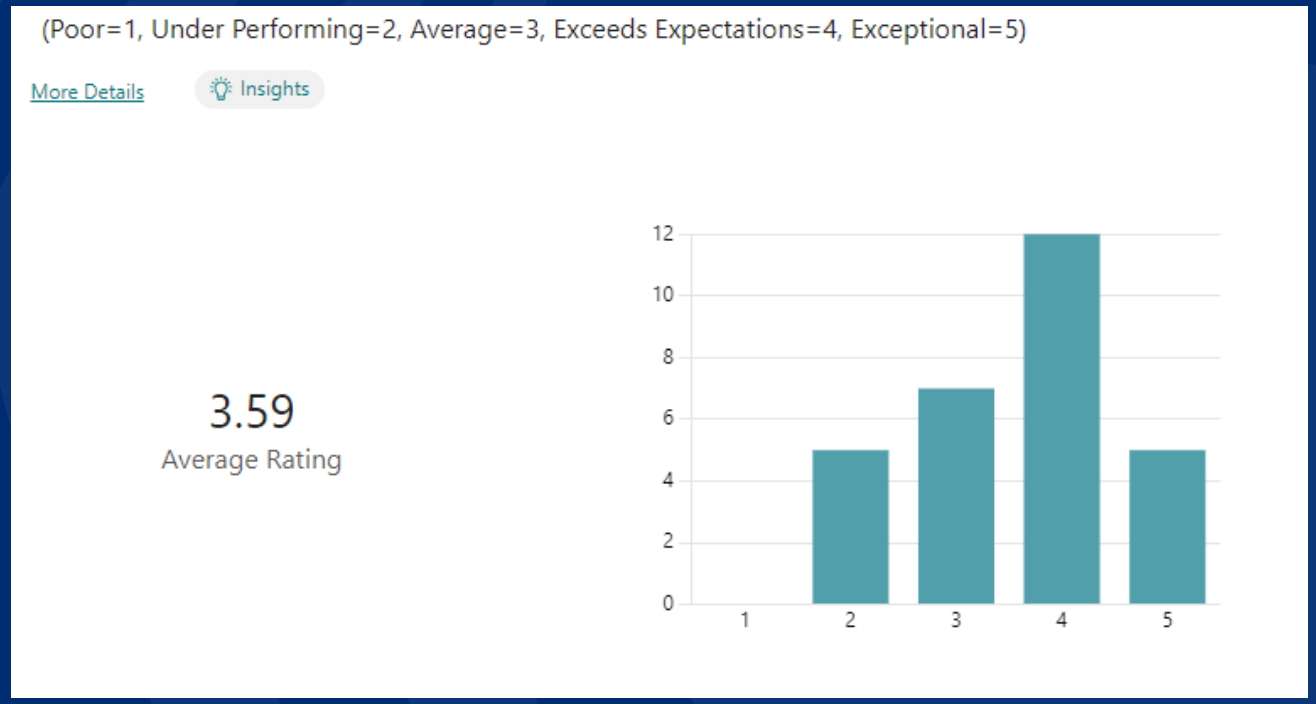
2023 Power Production Engineering Customer Service Survey

How would you rate the accessibility of Engineering (Teams, E-mail, Meetings, etc.)?



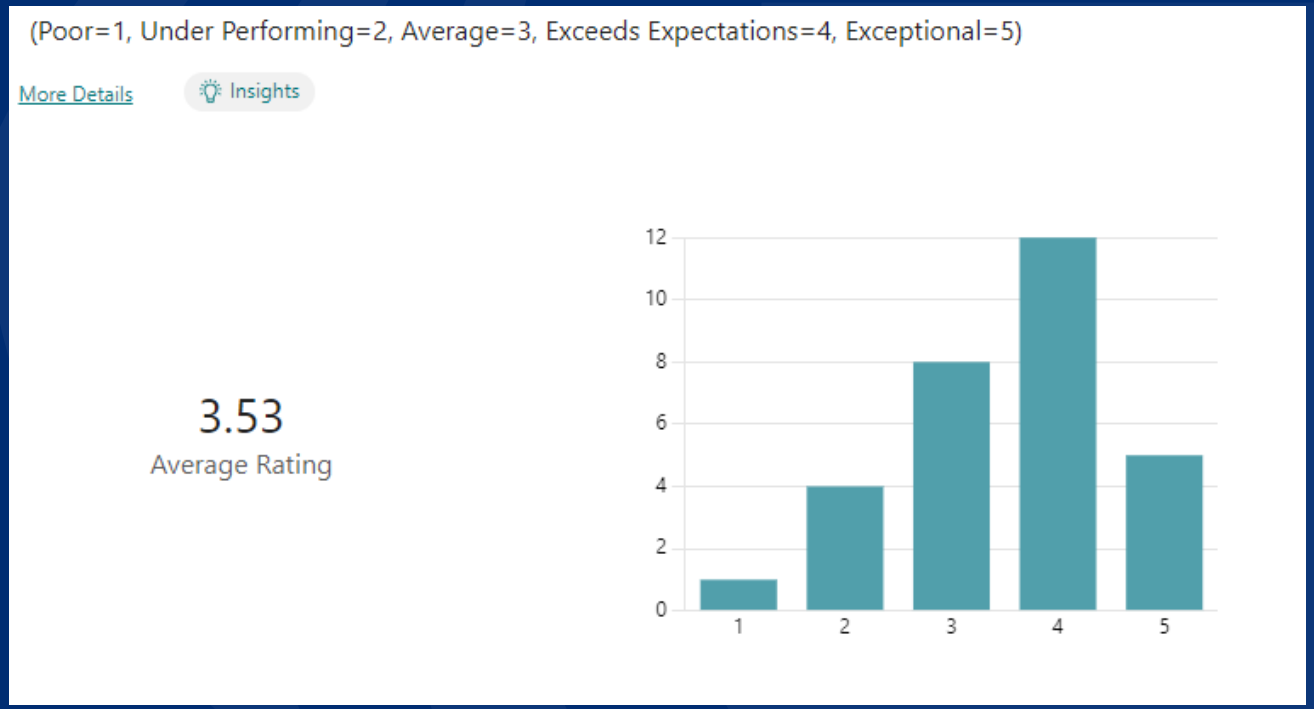
2023 Power Production Engineering Customer Service Survey

How would you rate the onsite support of Engineering?



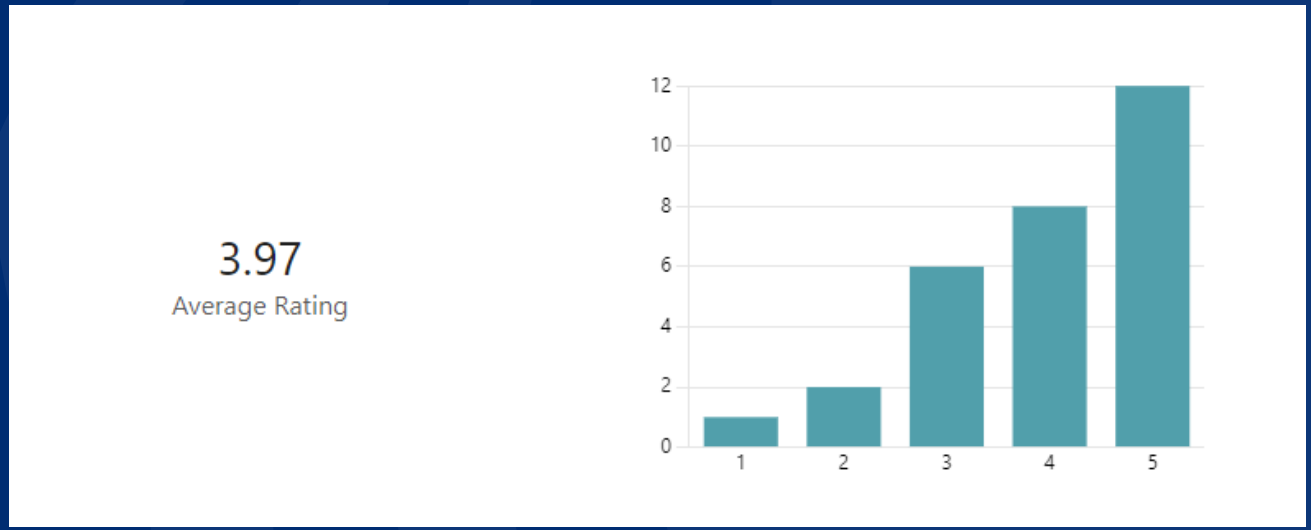
2023 Power Production Engineering Customer Service Survey

How would you rate Engineering's ability to communicate clearly on issues?



2023 Power Production Engineering Customer Service Survey

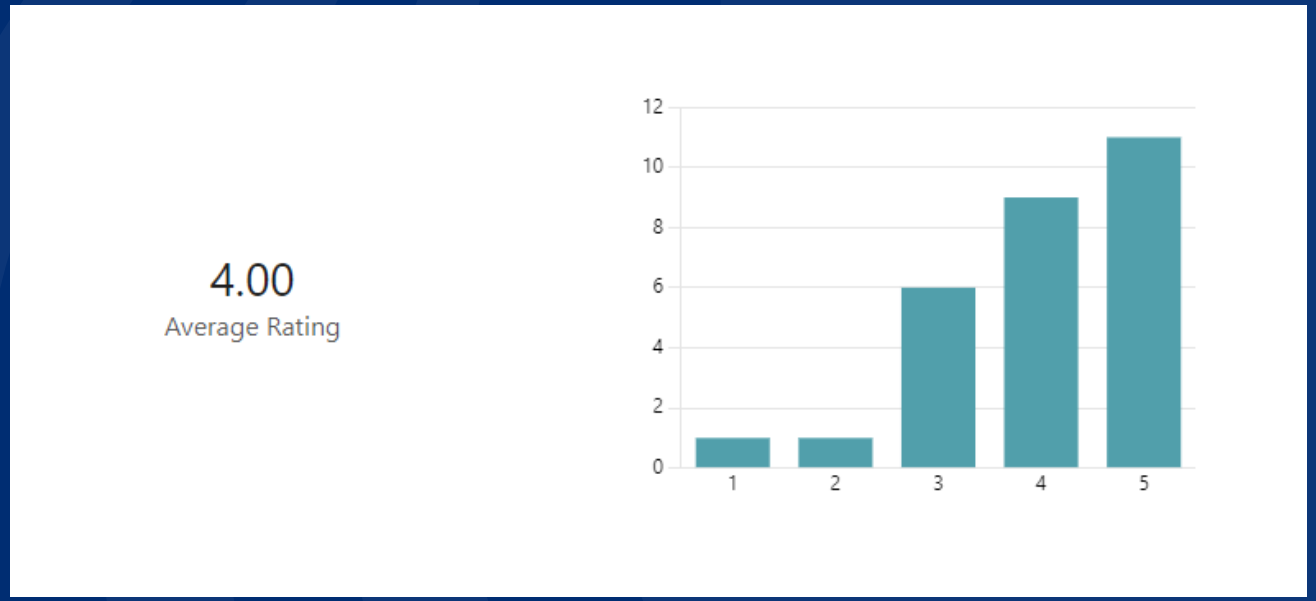
How would you rate the professionalism within Engineering?



2023 Power Production Engineering Customer Service Survey

How would you rate the integrity and ethical behavior from the employees in Engineering?

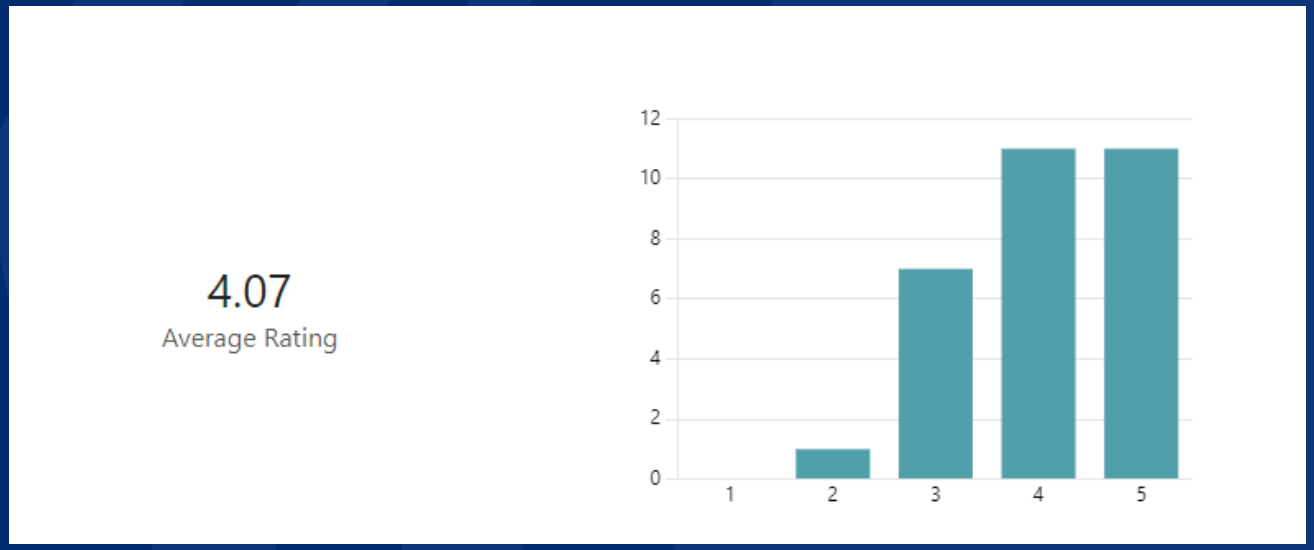
(Poor=1, Under Performing=2, Average=3, Exceeds Expectations=4, Exceptional=5)



2023 Power Production Engineering Customer Service Survey

How would you rate safety performance of Engineering?

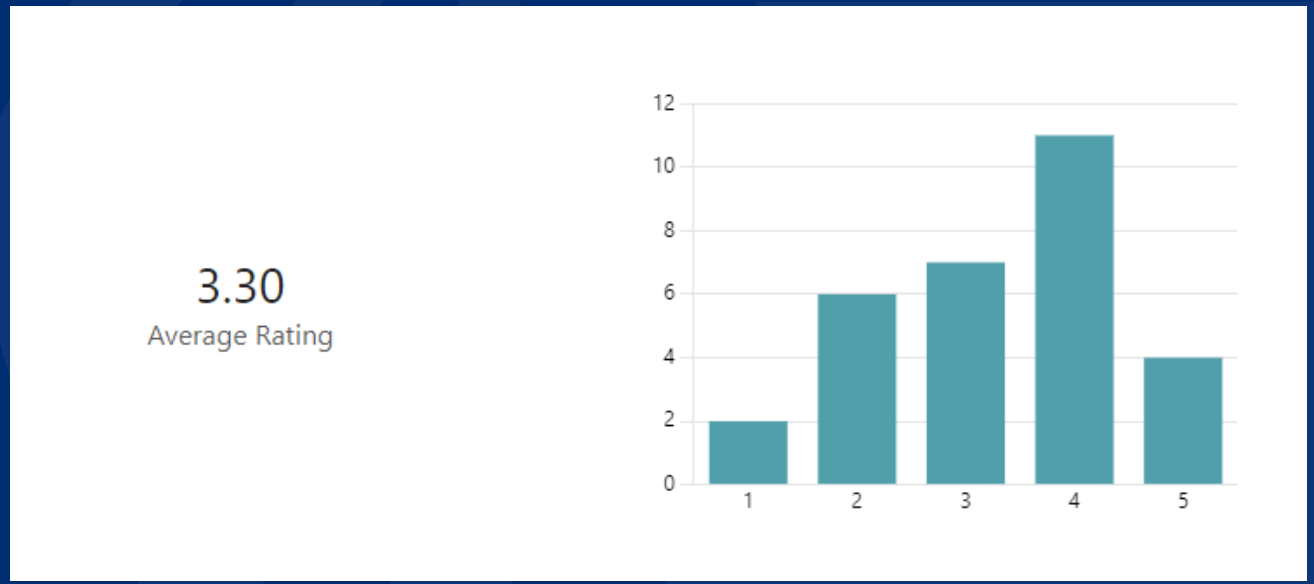
(Poor=1, Under Performing=2, Average=3, Exceeds Expectations=4, Exceptional=5)



2023 Power Production Engineering Customer Service Survey

How would you rate Engineering's ability to complete work on time and to your expectations?

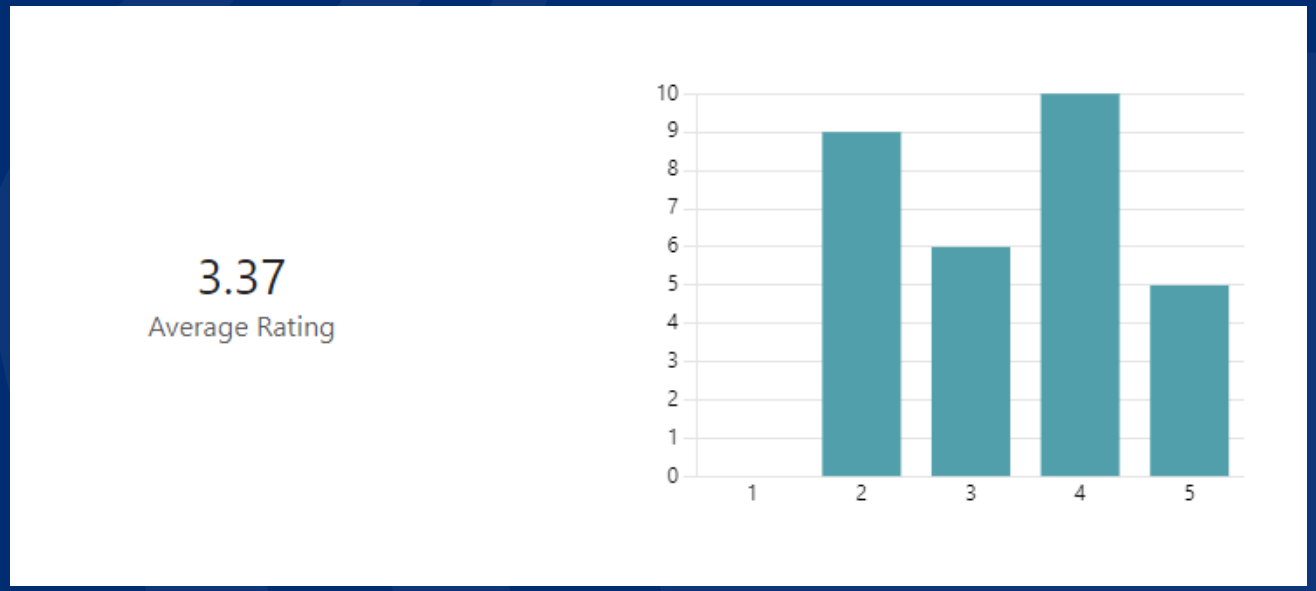
(Poor=1, Under Performing=2, Average=3, Exceeds Expectations=4, Exceptional=5)



2023 Power Production Engineering Customer Service Survey

How would you rate Engineering's ability to inform you about the status of your request?

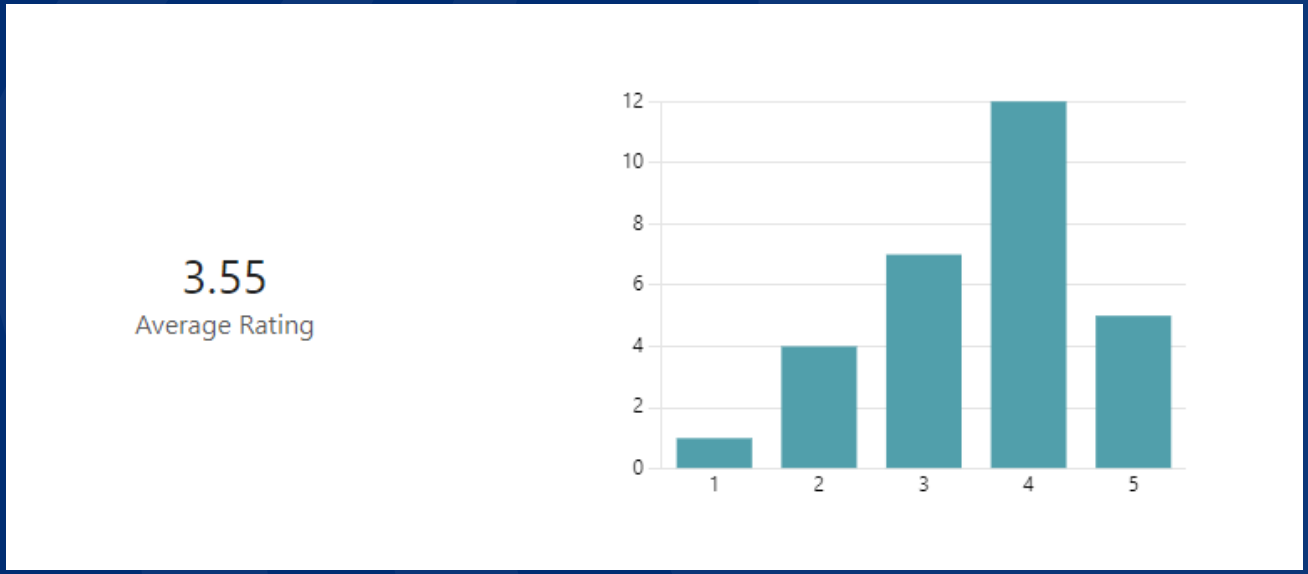
(Poor=1, Under Performing=2, Average=3, Exceeds Expectations=4, Exceptional=5)



2023 Power Production Engineering Customer Service Survey

How would you rate the overall performance of Engineering?

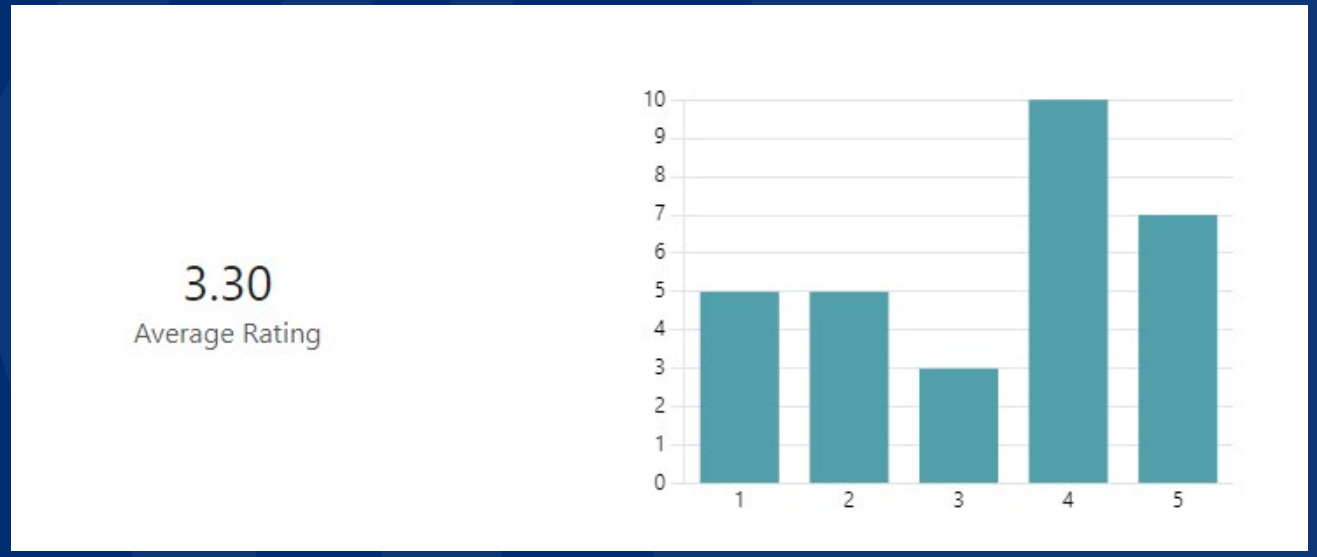
(Poor=1, Under Performing=2, Average=3, Exceeds Expectations=4, Exceptional=5)



2023 Power Production Engineering Customer Service Survey

How would you rate the Engineering staff 'shows up every day' (level of service, attitude, approachability)?

(Poor=1, Under Performing=2, Average=3, Exceeds Expectations=4, Exceptional=5)



2023 Power Production Engineering Customer Service Survey

Next Steps:

- Develop an Action Plan with Engineering Leaders and Stakeholder Leadership Team
- Deploy Action Plan
- Check with Repeat Survey

2023 Strategy Deployment
Refocusing with Corporate Strategy

Work Management
- Work Intake Process
- Planning and Scheduling

Business Process
- Compliance Tracking with Maximo and Docminder
- Procedure Writing Training
- How To Videos

Asset Management
- Addition of Asset Life, Cost, Warranty Data

People Development
- Power Production Skills Matrices

Next Steps
- 2024 COO Expansion- Q3

Personnel-New Team Members

Workforce of the Future

July:

Verlyn Coulson-Hydro Mechanic

Miguel Mancilla-Hydro Mechanic

August:

Kenton Yoder-Hydro Mechanic

September:

Gary Ganiere-Hydro Mechanic

IBEW Local 77

CODE OF EXCELLENCE

Grant PUD

Powering our way of life.

2023 Q3 RETAIL LOAD VARIANCE REPORT

Contributor:

Amanpreet Singh, Intentional Power Demand (IPD)

October 24th, 2023

Grant PUD

Powering our way of life.

Q3 Summary – Budget Forecast vs. Actual

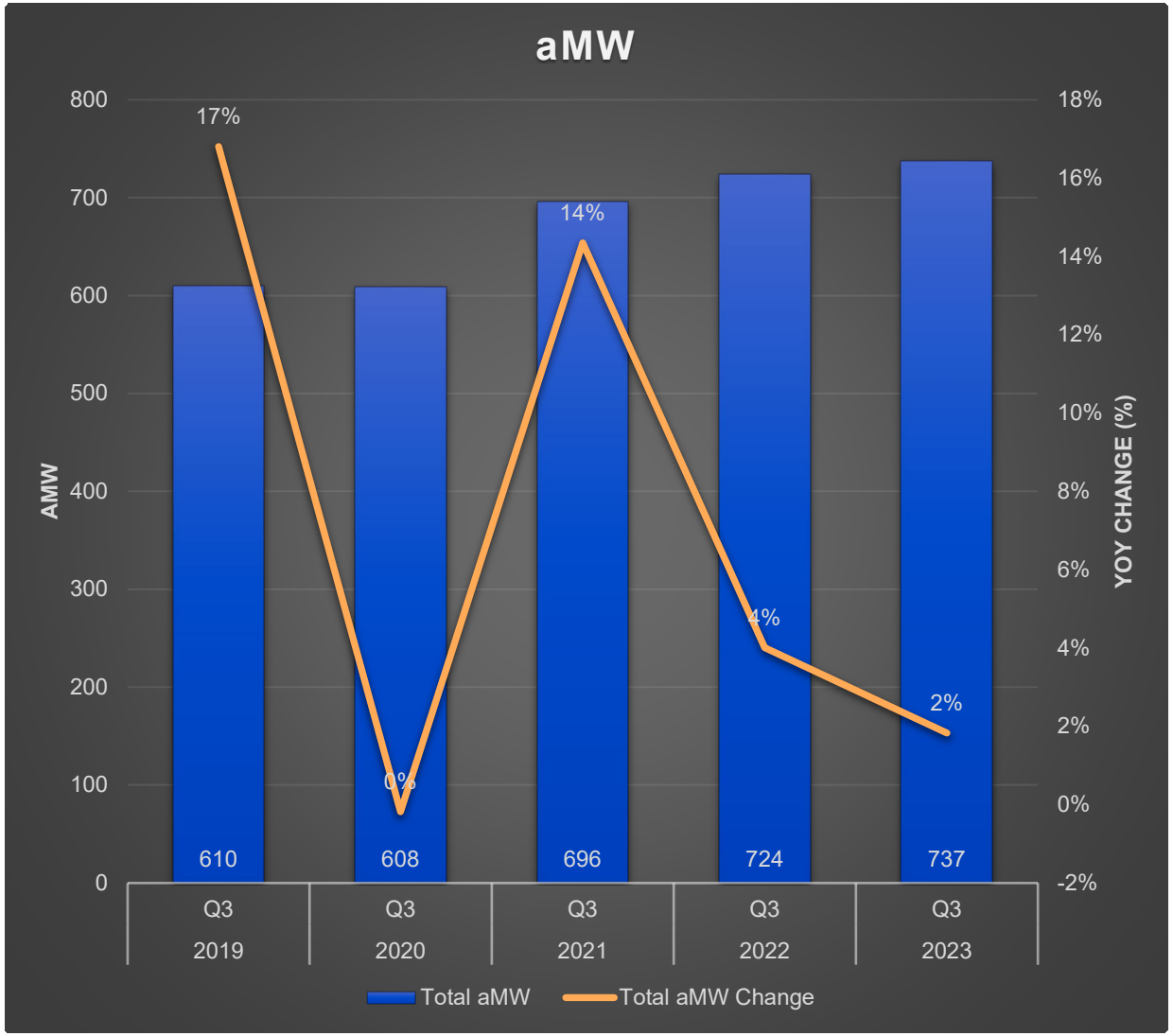
Load	Budget Forecast Load (aMW)	769
	Actual Load (aMW)	737
	Load Variance (aMW)	(33)
	Load Variance %	-4.2%

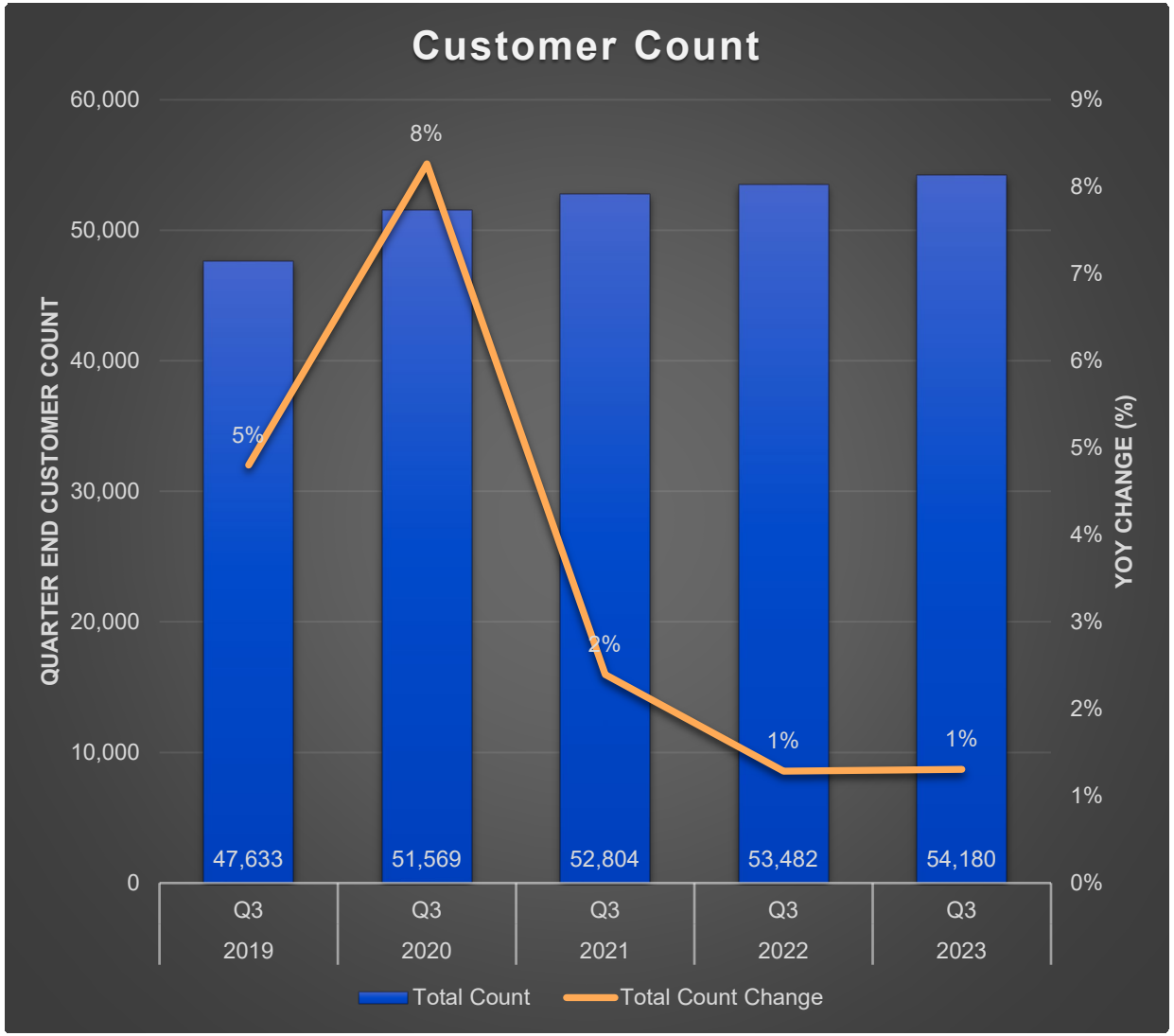
- Q3 Loads were **33 aMW**, or **4.2%**, **below** budgeted levels.

Rate Schedule Load Variances

Q3 Budget Forecast and Actuals Variance by Rate Schedule						
	2023 Q3 Budget Forecast and Actual Loads (aMW)				Percent of Total Retail Load	$ per kWh
	Forecast	Actual	Difference	Variance %		
Residential (1)	74	75	1	1.4%	10.1%	$0.062
Commercial (2)	52	50	(1)	-2.9%	6.8%	$0.051
Irrigation (3)	145	166	21	14.8%	22.5%	$0.042
Streetlights (6)	1	1	0	0.1%	0.1%	$0.235
Large General (7)	74	39	(35)	-47.6%	5.3%	$0.036
Industrial (14)	33	22	(11)	-33.6%	2.9%	$0.032
Industrial (15)	313	274	(39)	-12.5%	37.1%	$0.039
Ag Food (16)	43	40	(3)	-7.7%	5.4%	$0.032
Evolving Industry (17)	-	37	37	N/A	5.0%	$0.048
Fast Charging EV (19)	-	0.2	0.2	N/A	0.0%	$0.145
Ag Food-Boiler (85)	-	-	-	N/A	0.0%	N/A
New Large Load (94)	37	35	(2)	-4.3%	4.8%	$0.083
Totals	**769**	**737**	**(33)**	**-4.2%**	**100%**	**$0.045**

Rate Schedule Q3 Load and Customer Count History



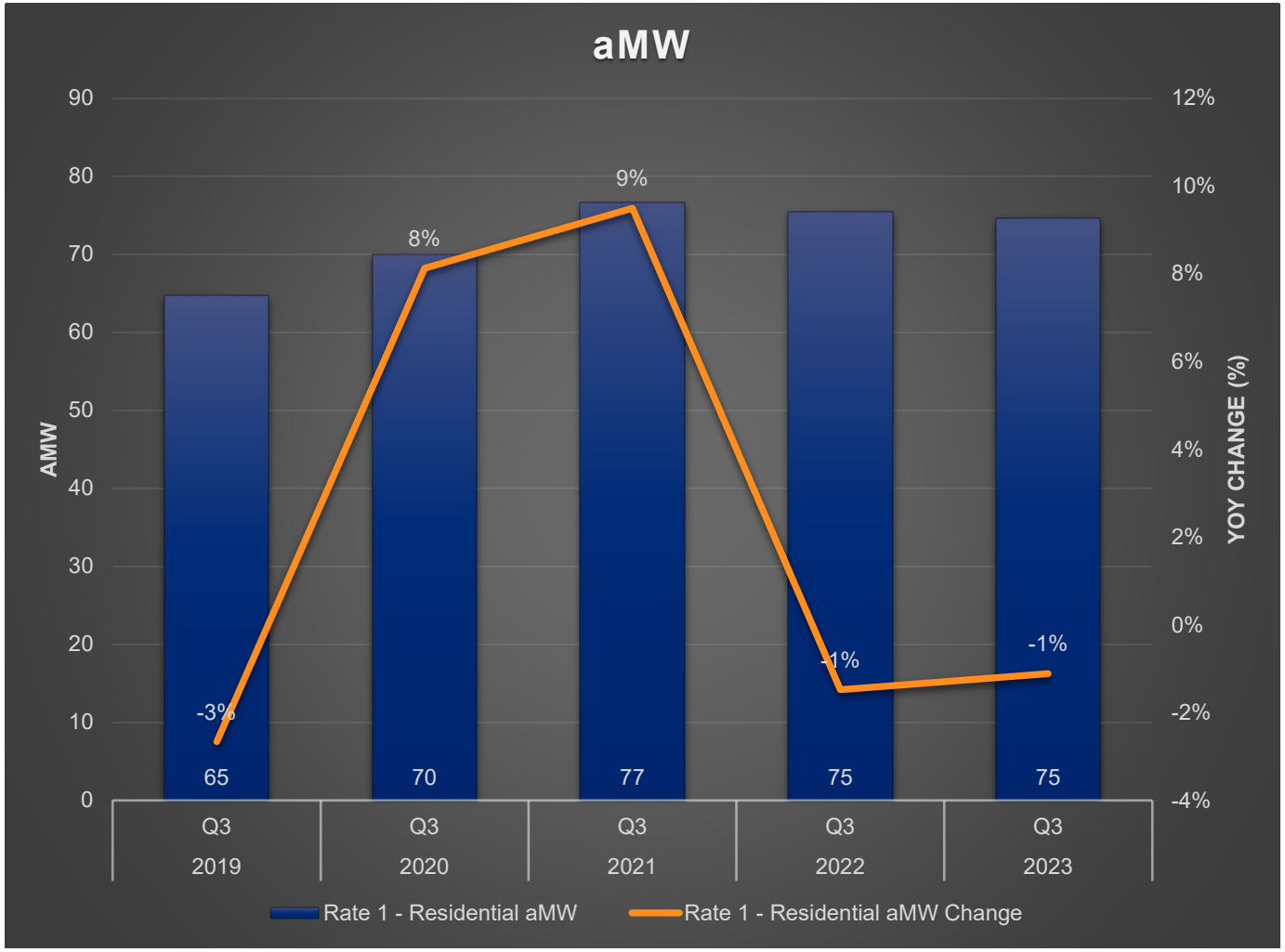


Q3 Rate Schedule 1 Residential Differences

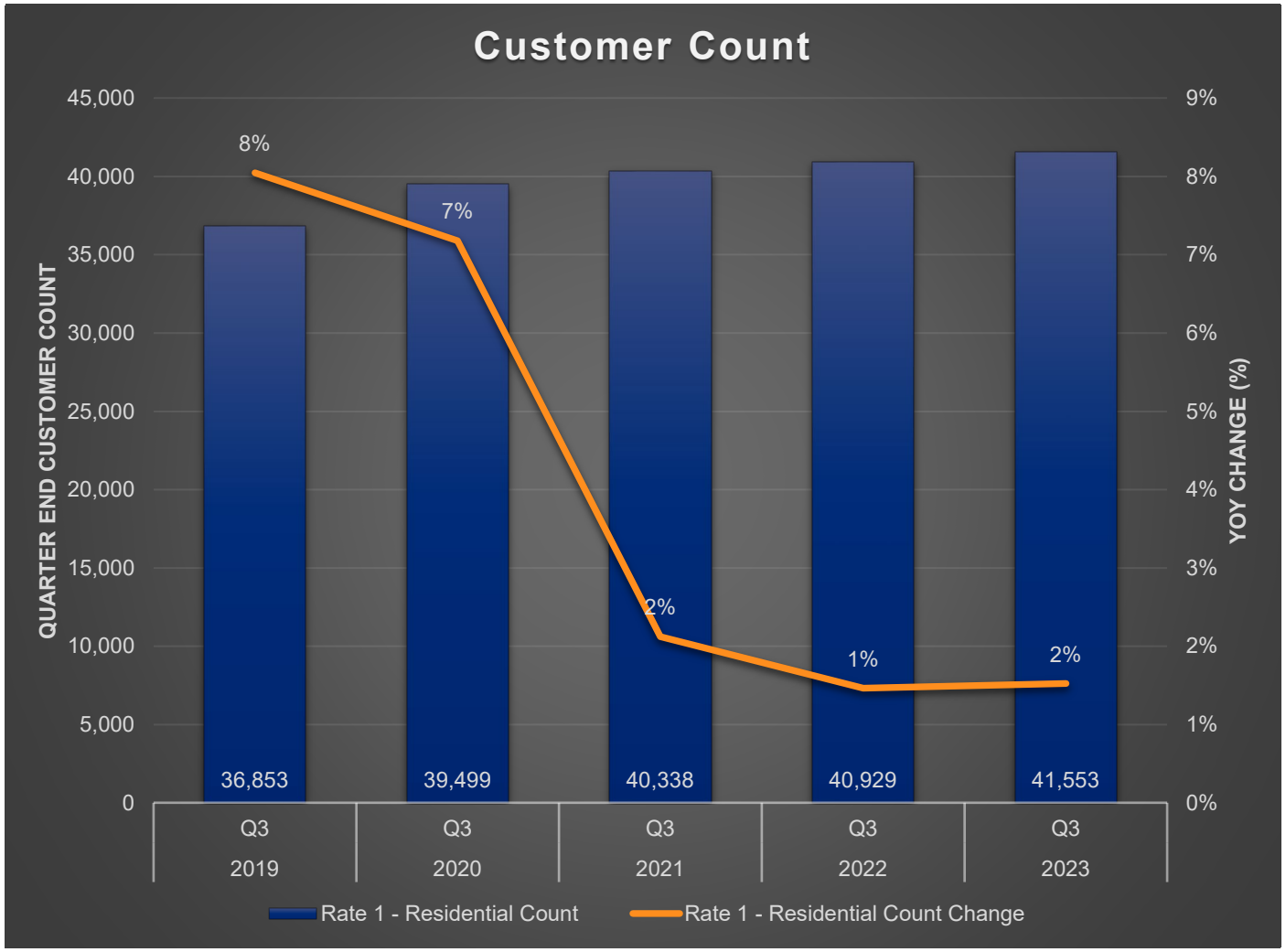
Q3 **Residential (RS 1)** actual loads were **75 aMW, 1.4% higher** than budget forecast.

- Hotter weather conditions led to Residential load being higher than it would have been given normal weather conditions
- Adjusted for the weather, actual load was **72 aMW**, Residential loads are **-2.1% lower** than the budget forecast

Q3 Rate Schedule 1 Residential History



Q3 Rate Schedule 1 Residential History



Q3 Rate Schedule 2 General Service Differences

Q3 **General Service / Commercial (RS 2)** actual loads were **50 aMW, 2.9% lower** than budget forecast.

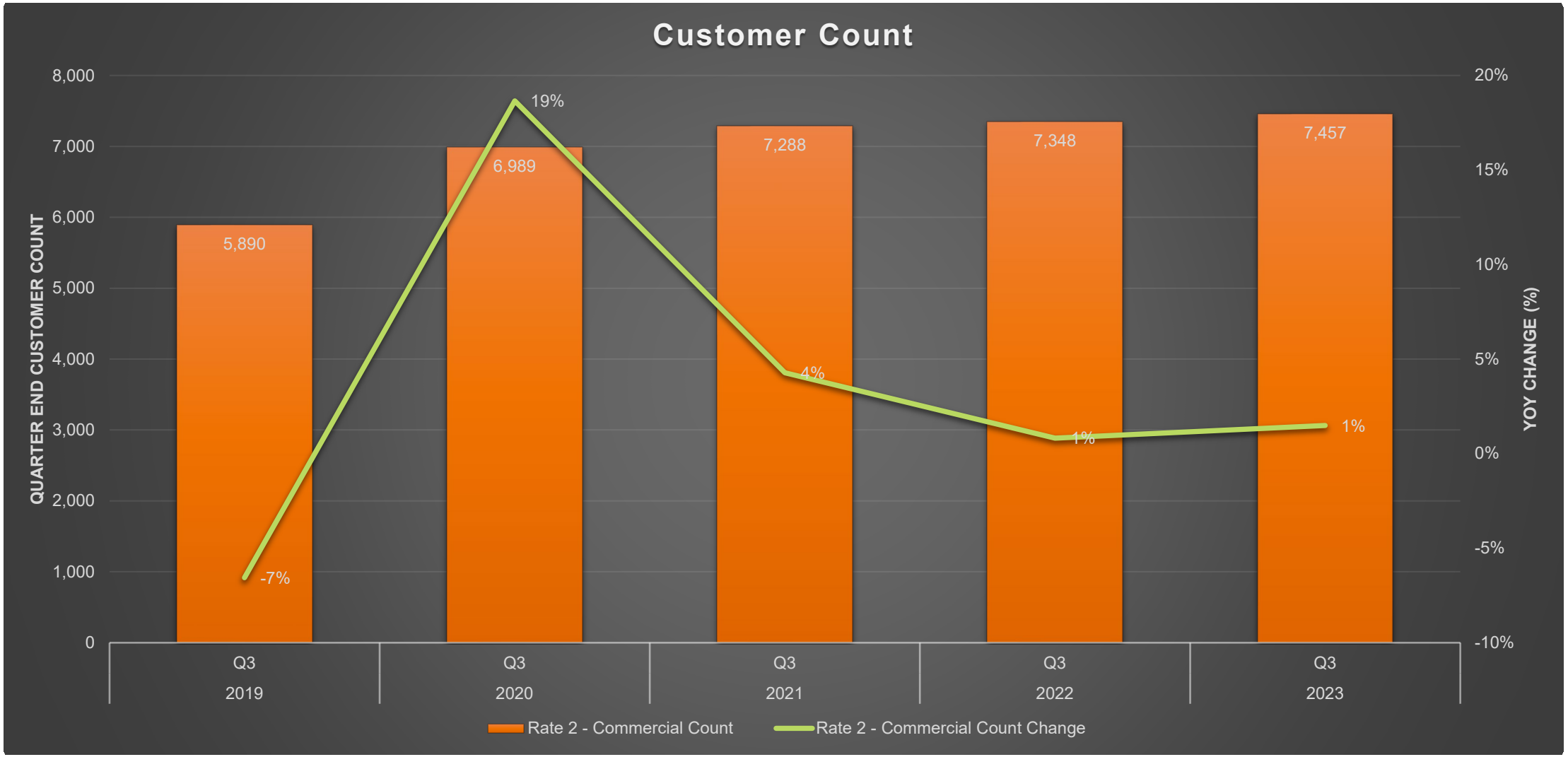
- The weather-normalized Commercial actual load is **50 aMW, 3.1% lower** than the budget forecast
- The August 2023 unemployment rate for Grant County was **4.2%, or 23.6% lower** than in August 2022, which was **5.5%**
  - In May 2023, unemployment was **3.7%**

**Note: the unemployment figures are subject to revision on the website

*Source: St. Louis FED. https://fred.stlouisfed.org/series/WAGRAN5URN#0

Q3 Rate Schedule 2 General Service History

Q3 Rate Schedule 2 General Service History

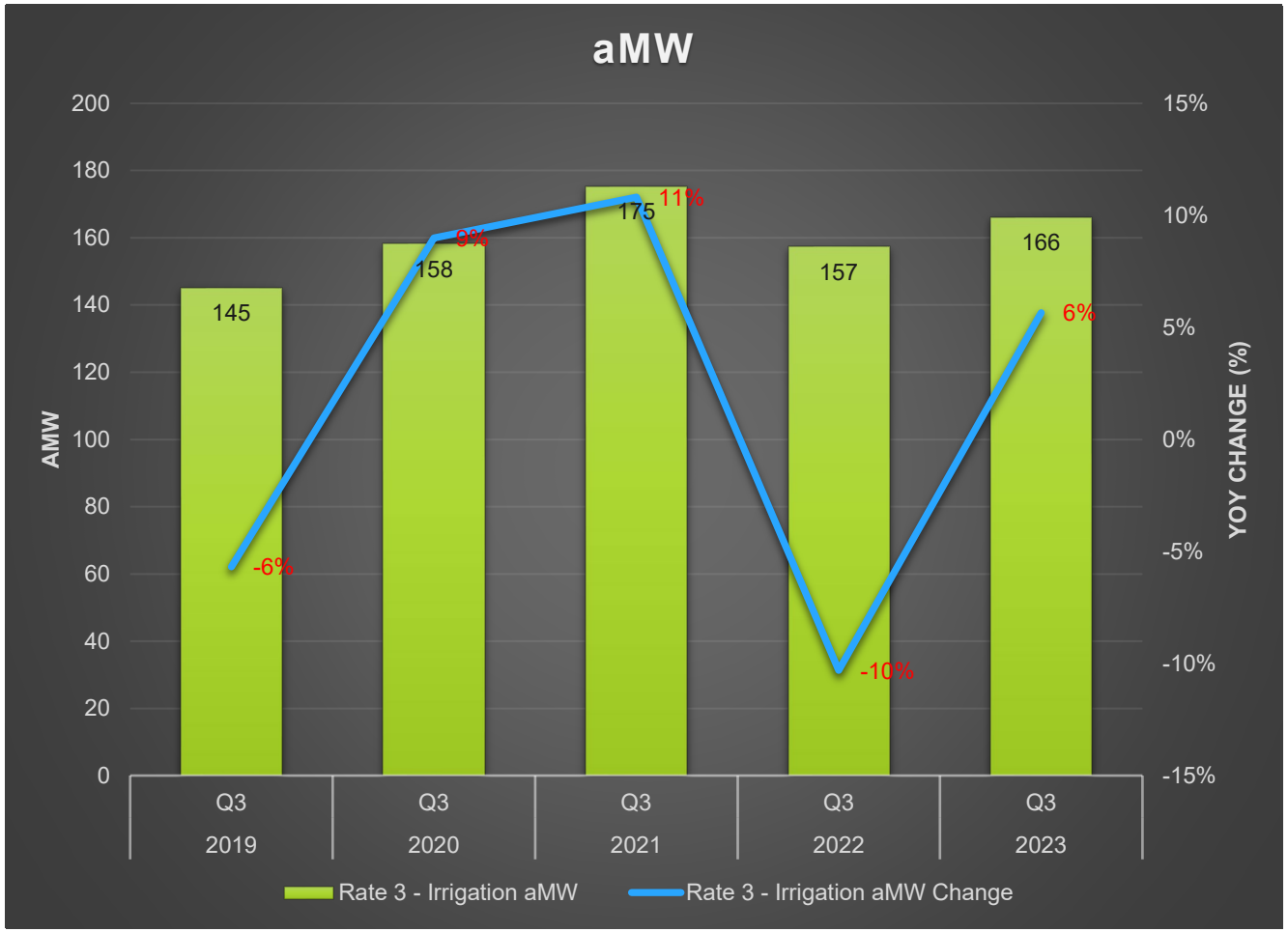


Q3 Rate Schedule 3 Irrigation Differences

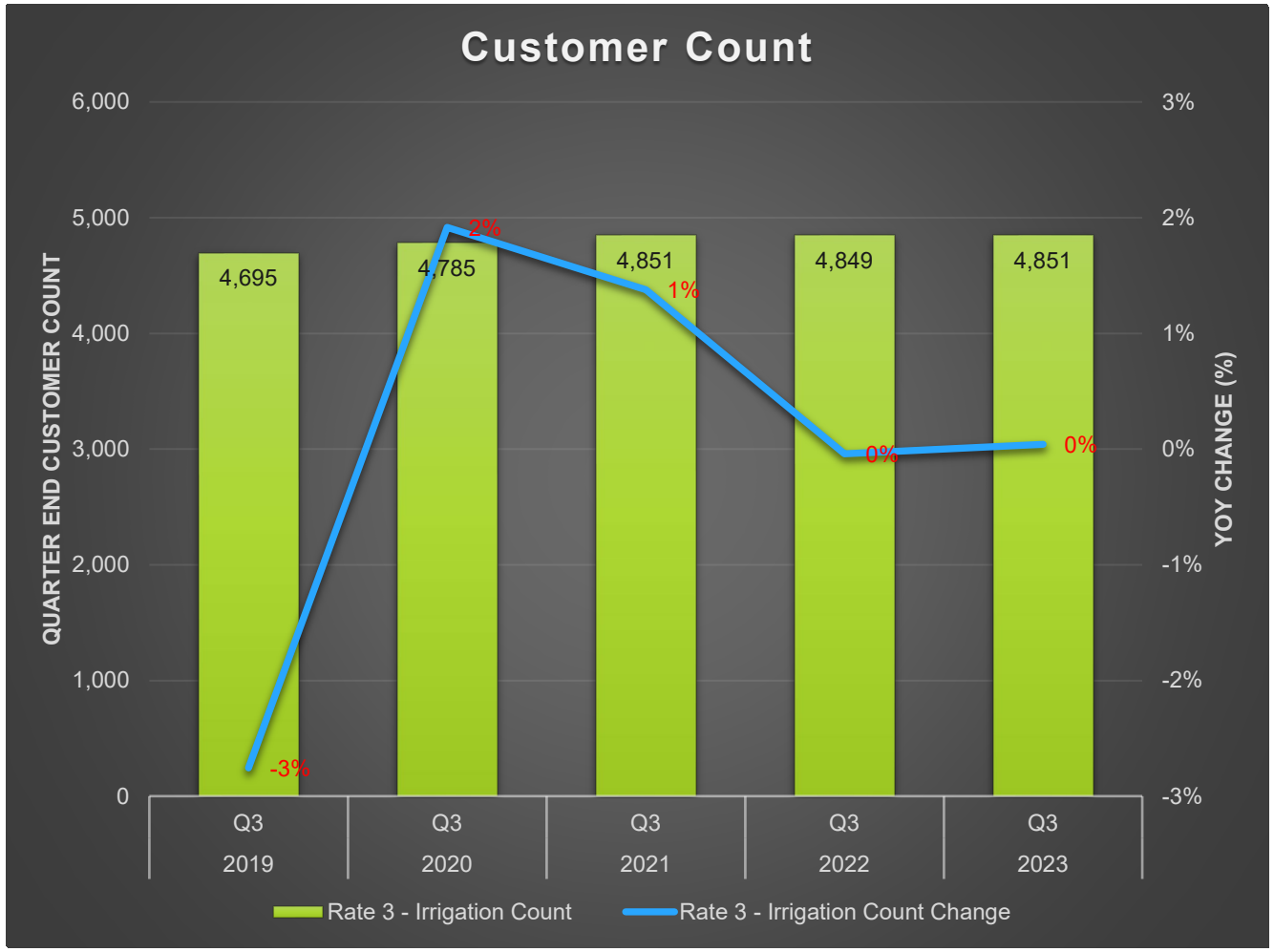
Q3 **Irrigation (RS 3)** actual loads were **166 aMW, 14.8% higher** than budget forecast.

- 2021 Load Profile was used to shape the Irrigation loads in the forecast
- The difference between billing data and the load profile is causing the variance
- When we look at the whole year this variance should decrease as more of the load data gets billed in the billing system
- Currently, the YTD load for Irrigation is **2% lower** than budget forecast

Q3 Rate Schedule 3 Irrigation History



Q3 Rate Schedule 3 Irrigation History



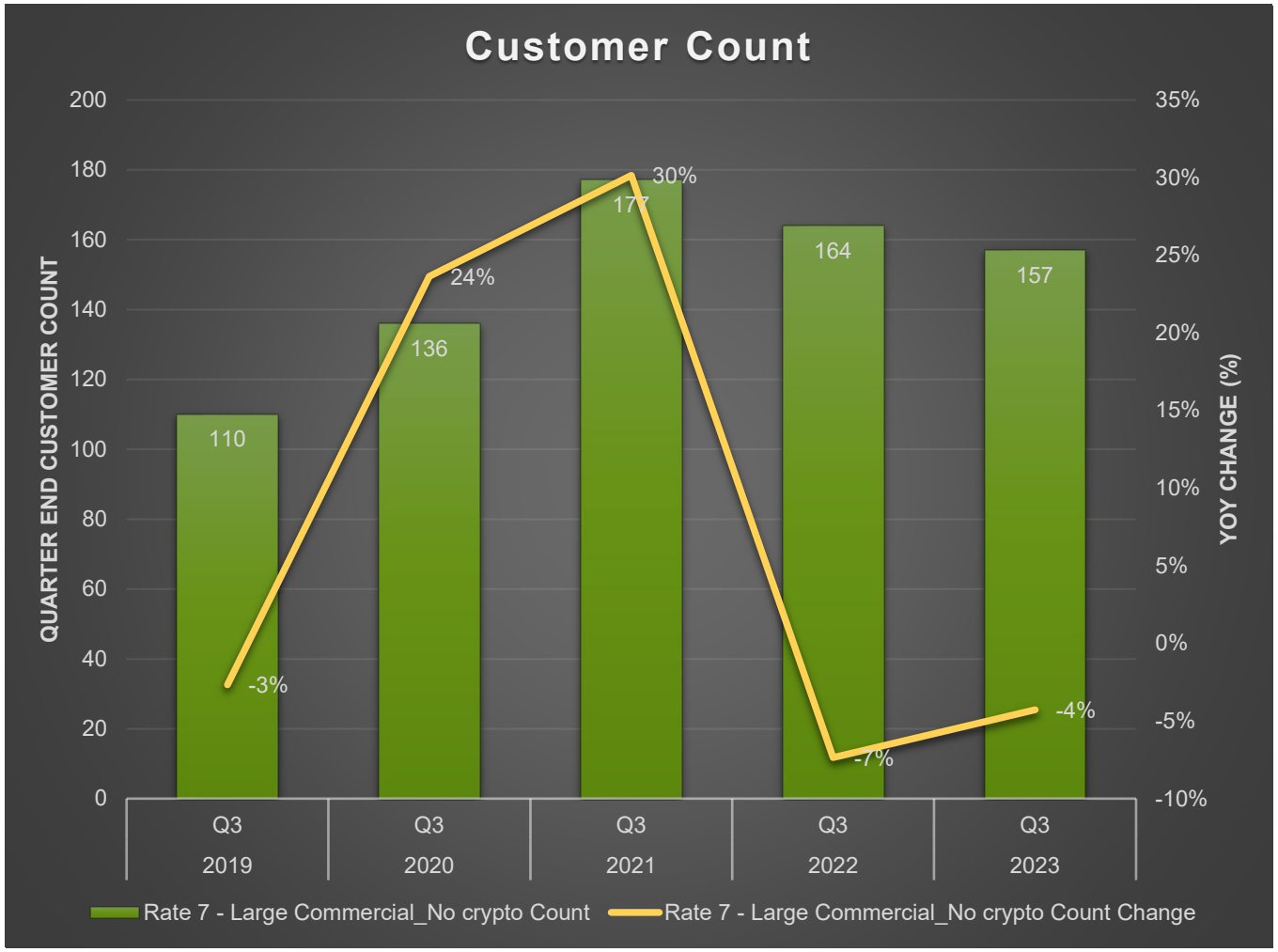
Q3 Rate Schedule 7 Large General Service Differences

Q3 **Large General (RS 7)** actual loads were **39 aMW, 47.6% lower** than budget forecast.

- Large commercial decrease is largely attributable to cryptocurrency mining being moved to Rate Schedule 17 starting February 1st, 2023.

Q3 Rate Schedule 7 Large General Service History

Q3 Rate Schedule 7 Large General Service History

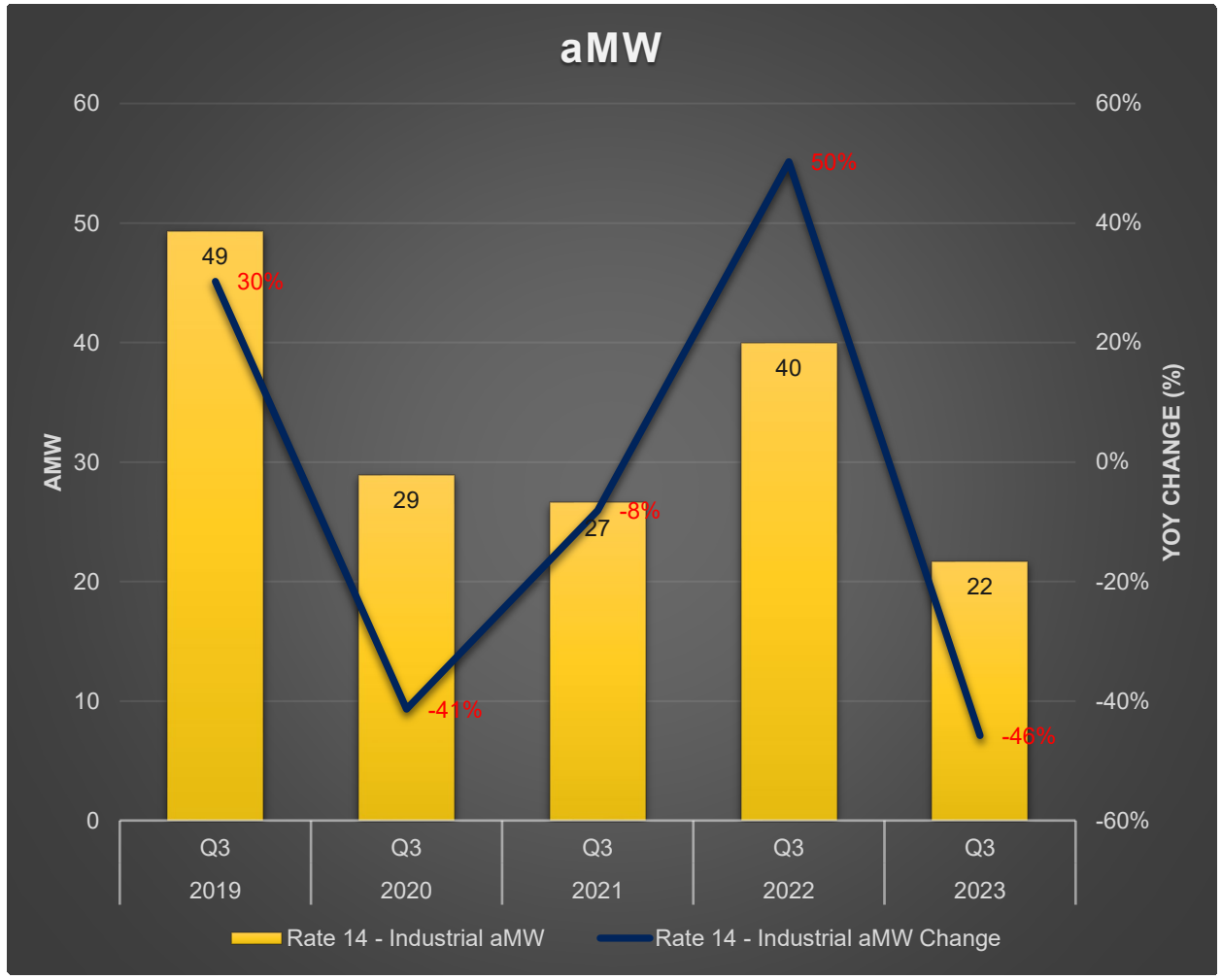


Q3 Rate Schedule 14 Industrial Differences

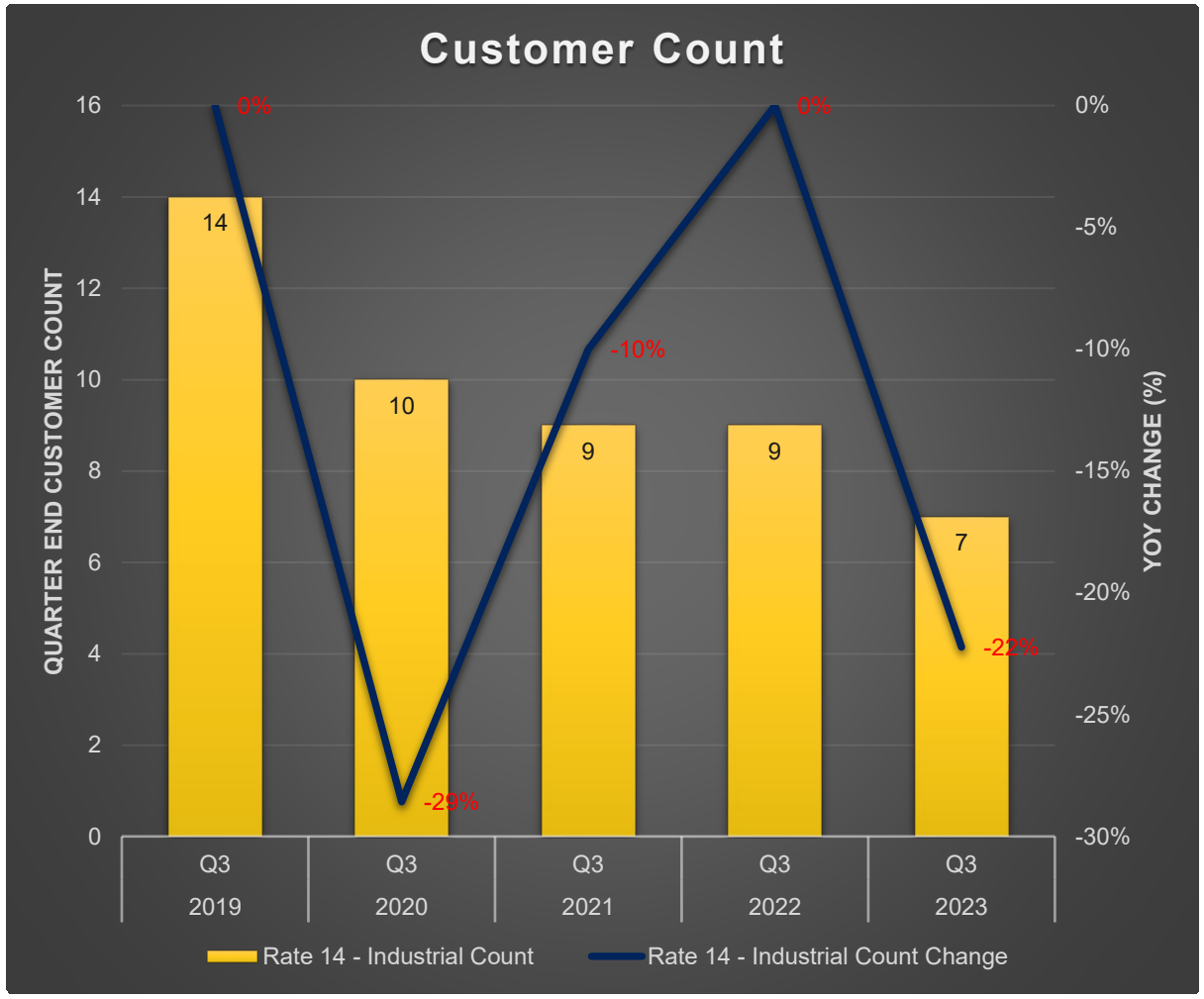
Q3 **Industrial (RS 14)** actual loads were **22 aMW, 33.6% below** budget forecast.

- Two customers are coming in a lot lower than forecasted.
- We expect one of the customers to continue coming in lower and this is reflected in the 2024 Budget Forecast

Q3 Rate Schedule 14 Industrial History



Q3 Rate Schedule 14 Industrial History

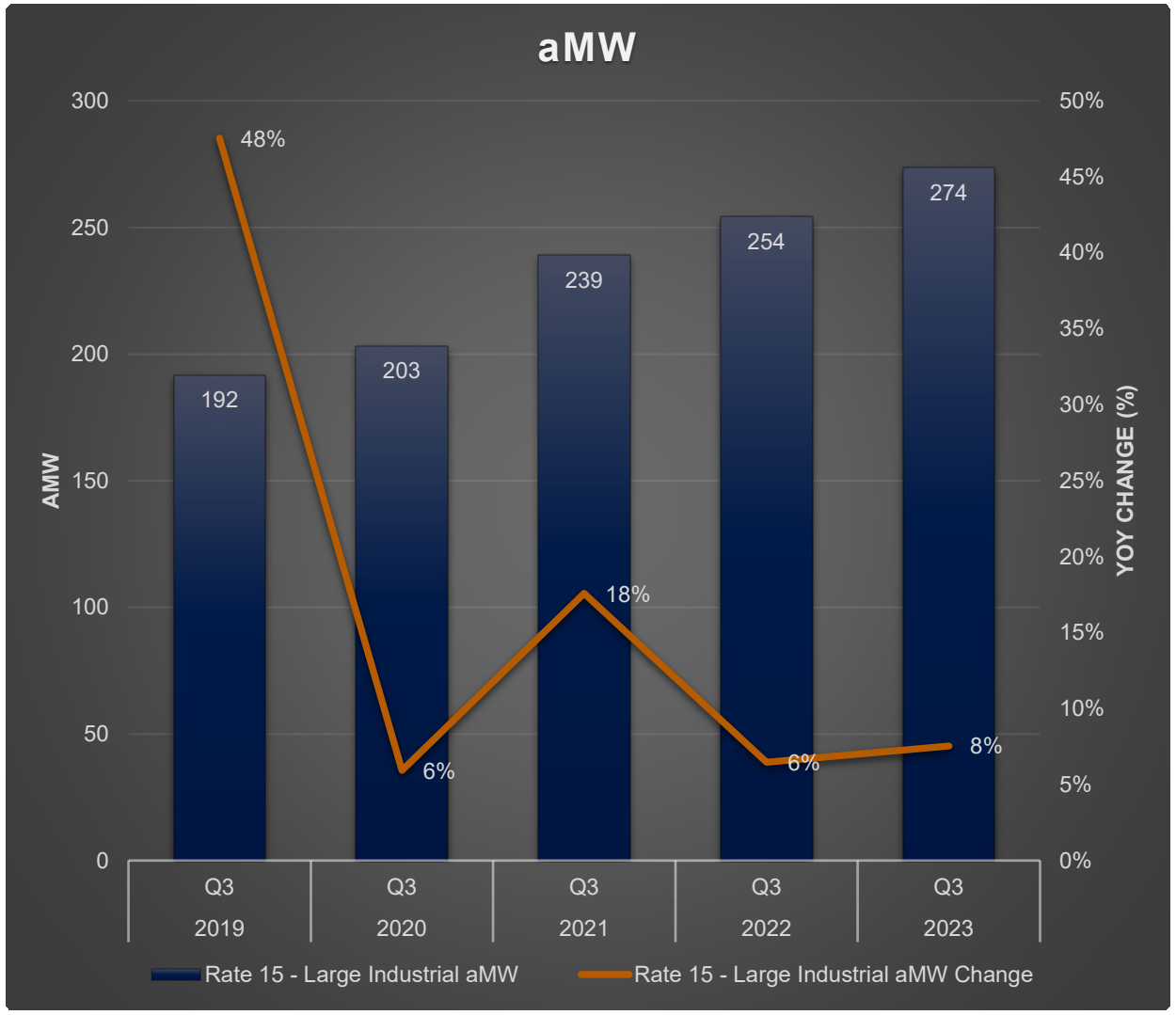


Q3 Rate Schedule 15 Large Industrial Differences

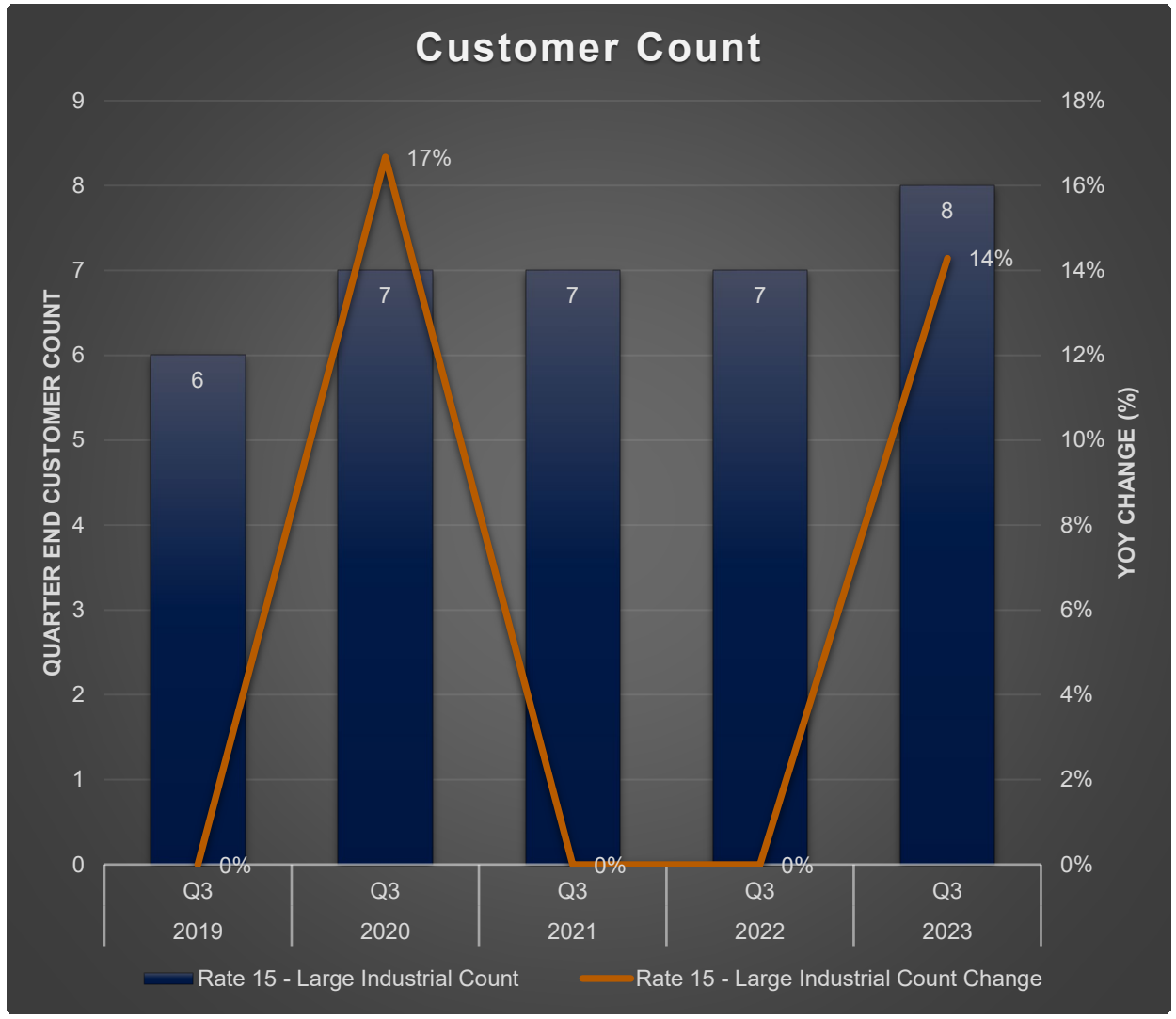
Q3 **Large Industrial (RS 15)** actual loads were **274 aMW, 12.5% below** budget forecast.

- One manufacturing customer has reduced load
- Two Data Center customers are coming in lower than forecasted

Q3 Rate Schedule 15 Large Industrial History



Q3 Rate Schedule 15 Large Industrial History

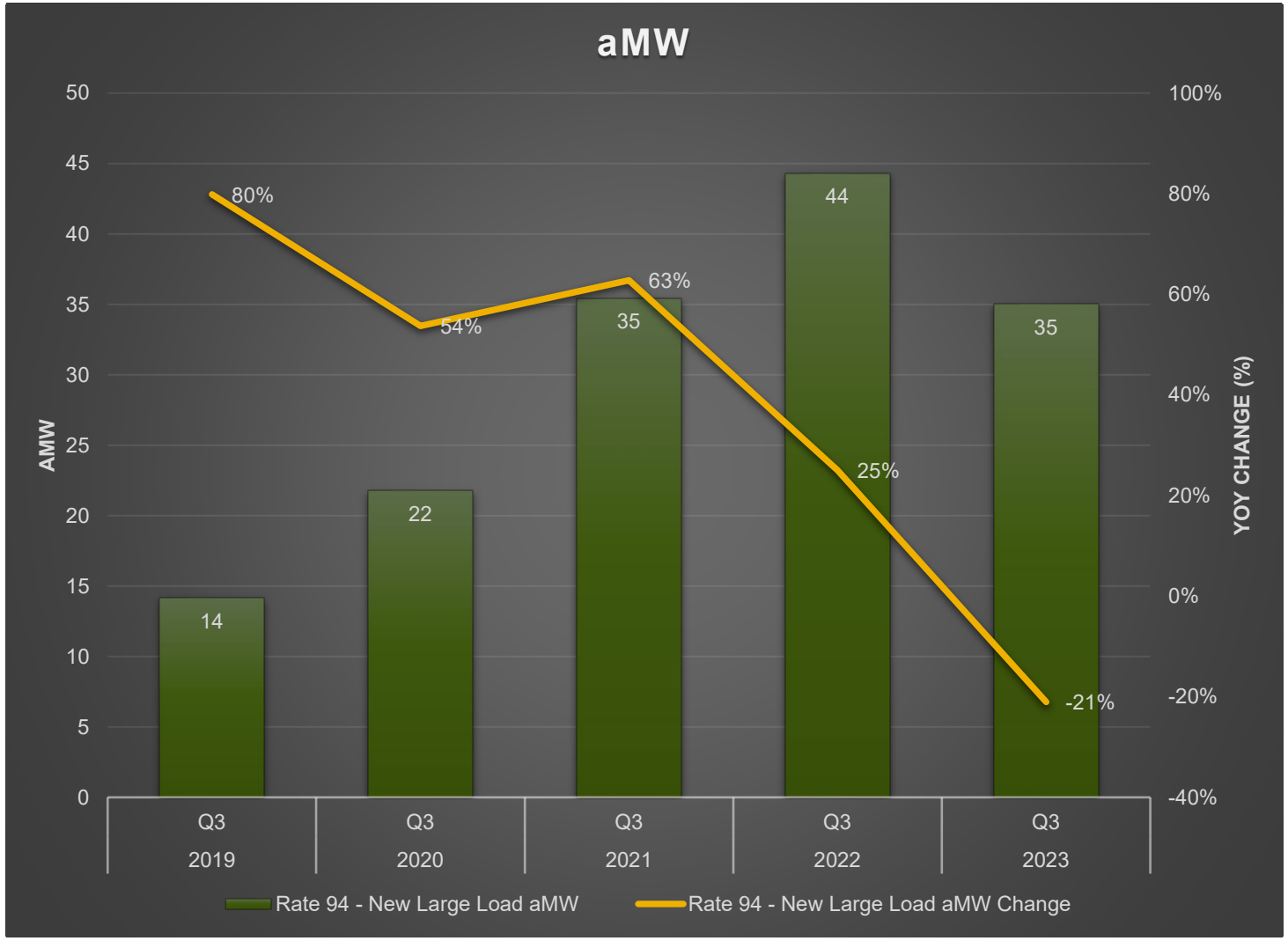


Q3 Rate Schedule 94 New Large Load Differences

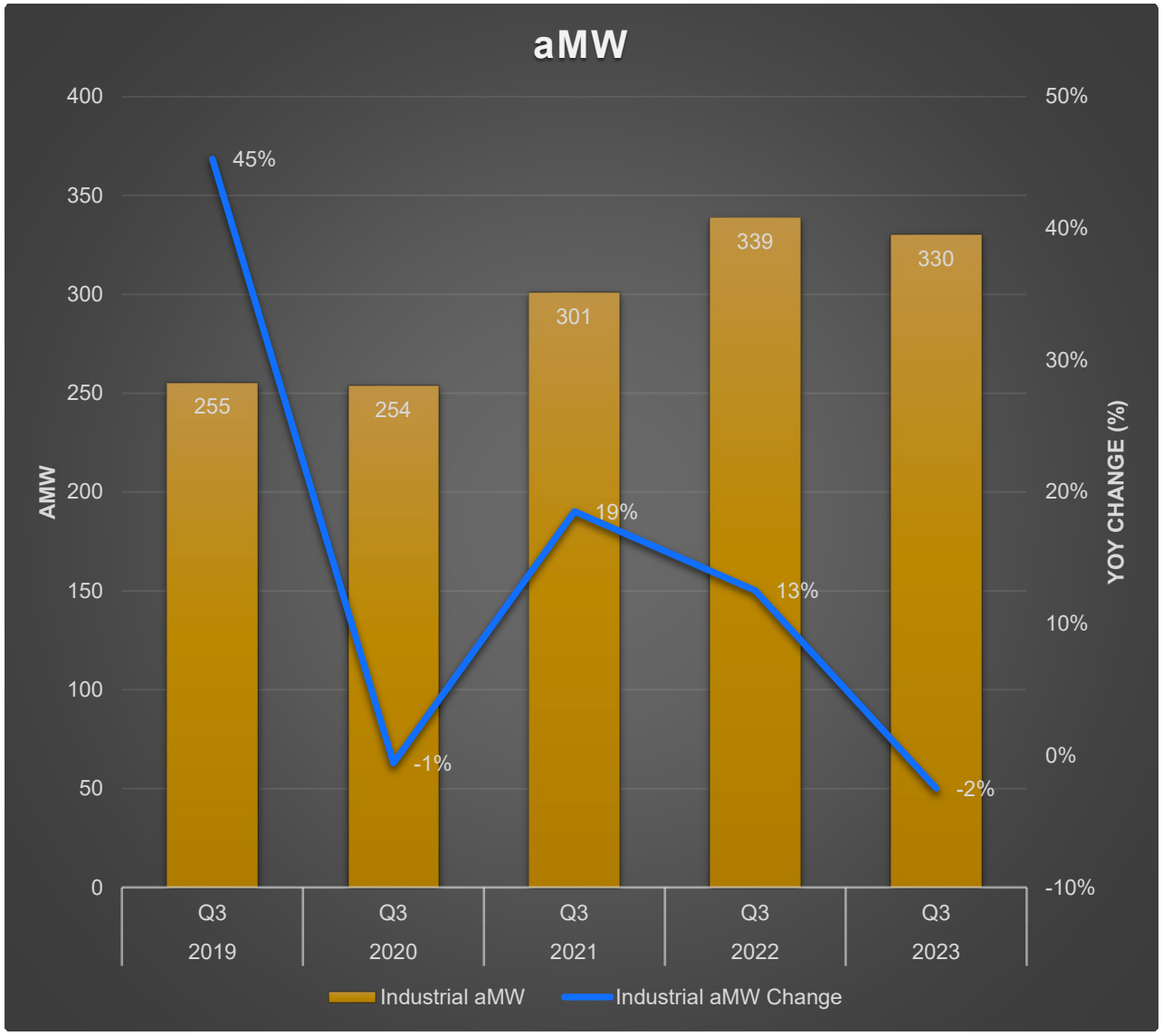
Q3 **New Large Load (RS 94)** actuals were **35 aMW, 4.3% below** budget forecast.

- Decrease in New Large Loads is arising from one customer coming in lower than forecasted

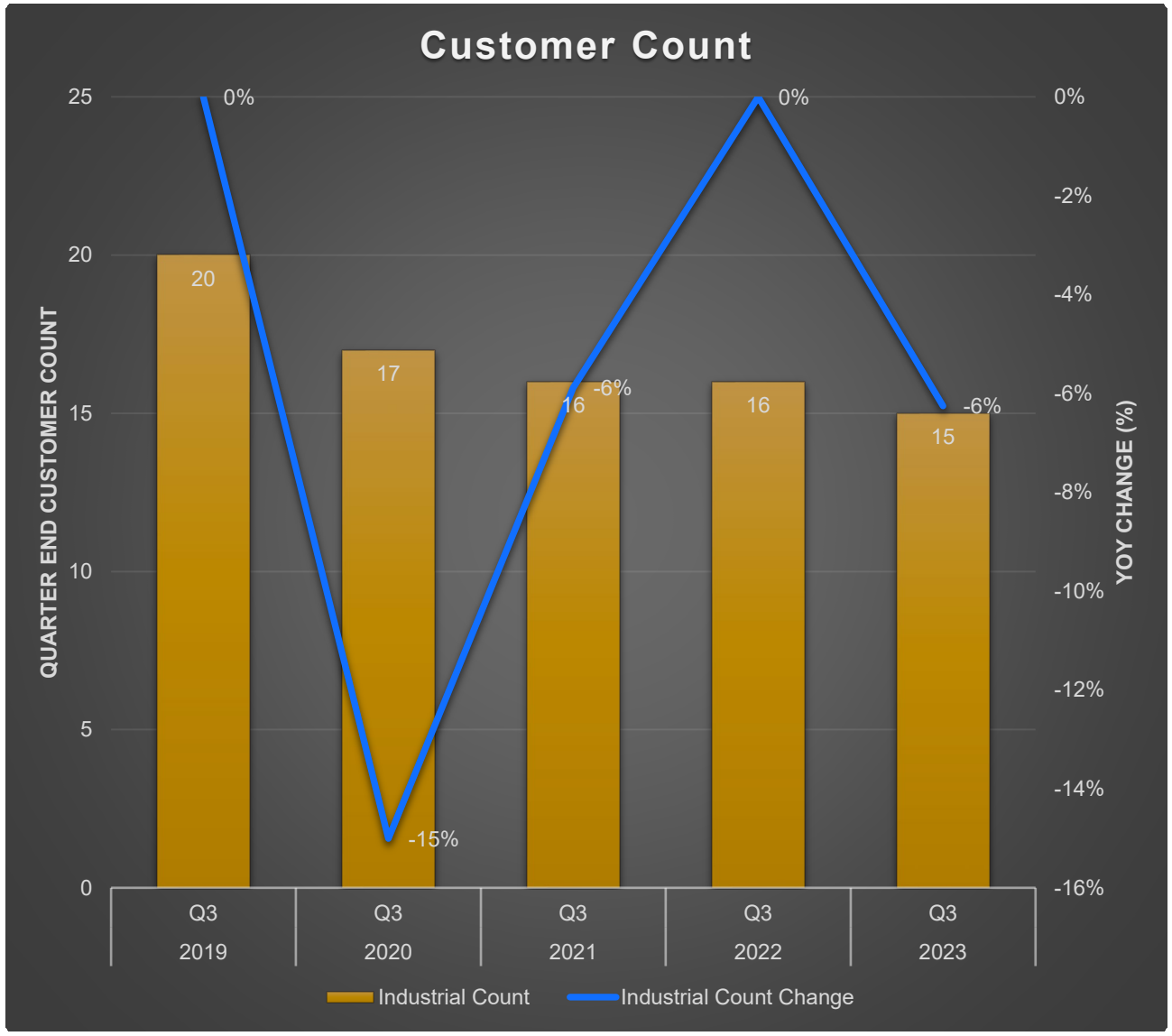
Q3 Rate Schedule 94
New Large Load History



Q3 Industrial History



Q3 Industrial History



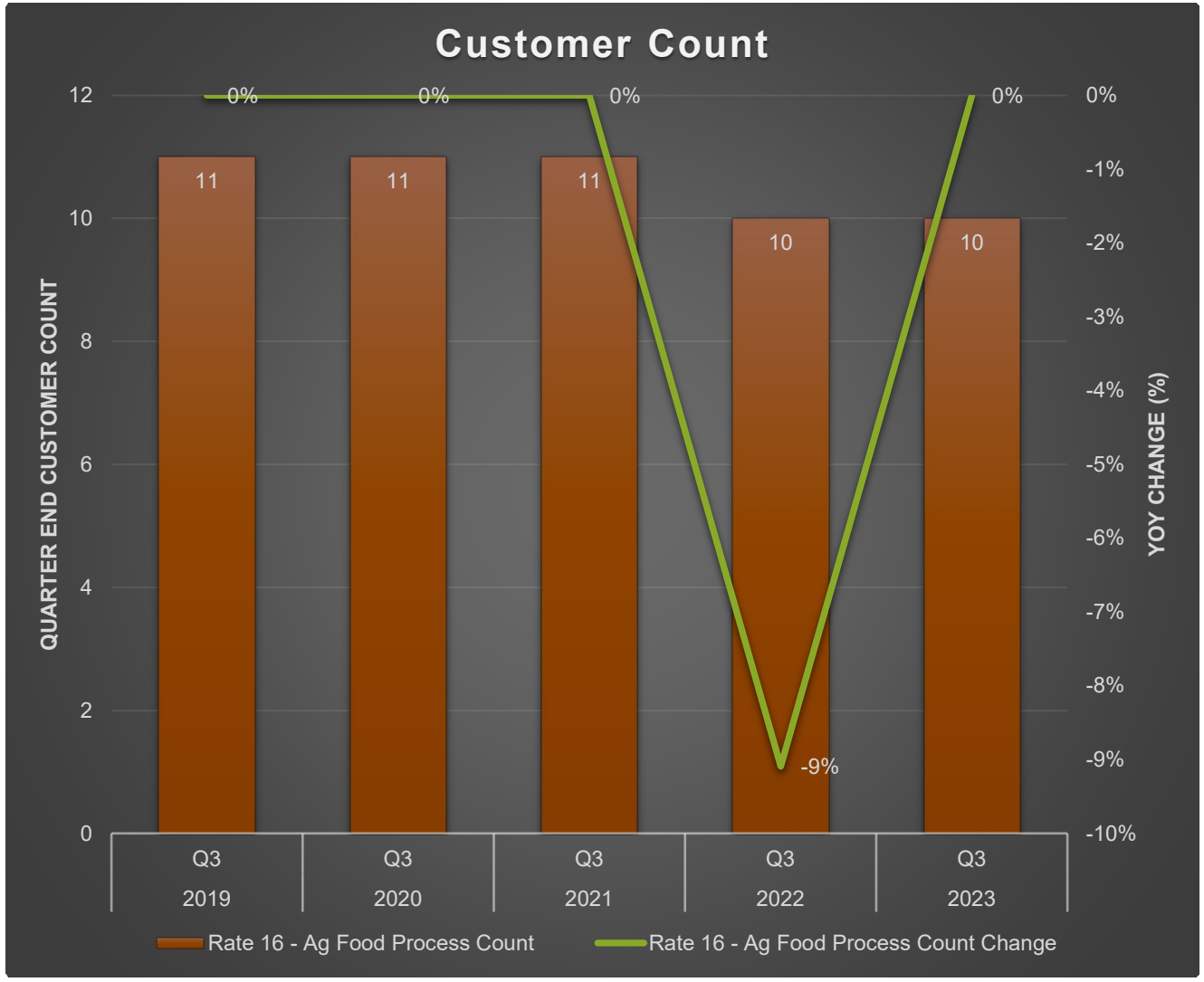
Q3 Rate Schedule 16 Ag Food Processors Differences

Q3 **Ag Food Processors (RS 16)** actual loads **were 40 aMW, 7.7% below** budget forecast.

- Some customers are coming in lower than forecasted

Q3 Rate Schedule 16 Ag Food Processors History

Q3 Rate Schedule 16 Ag Food Processors History



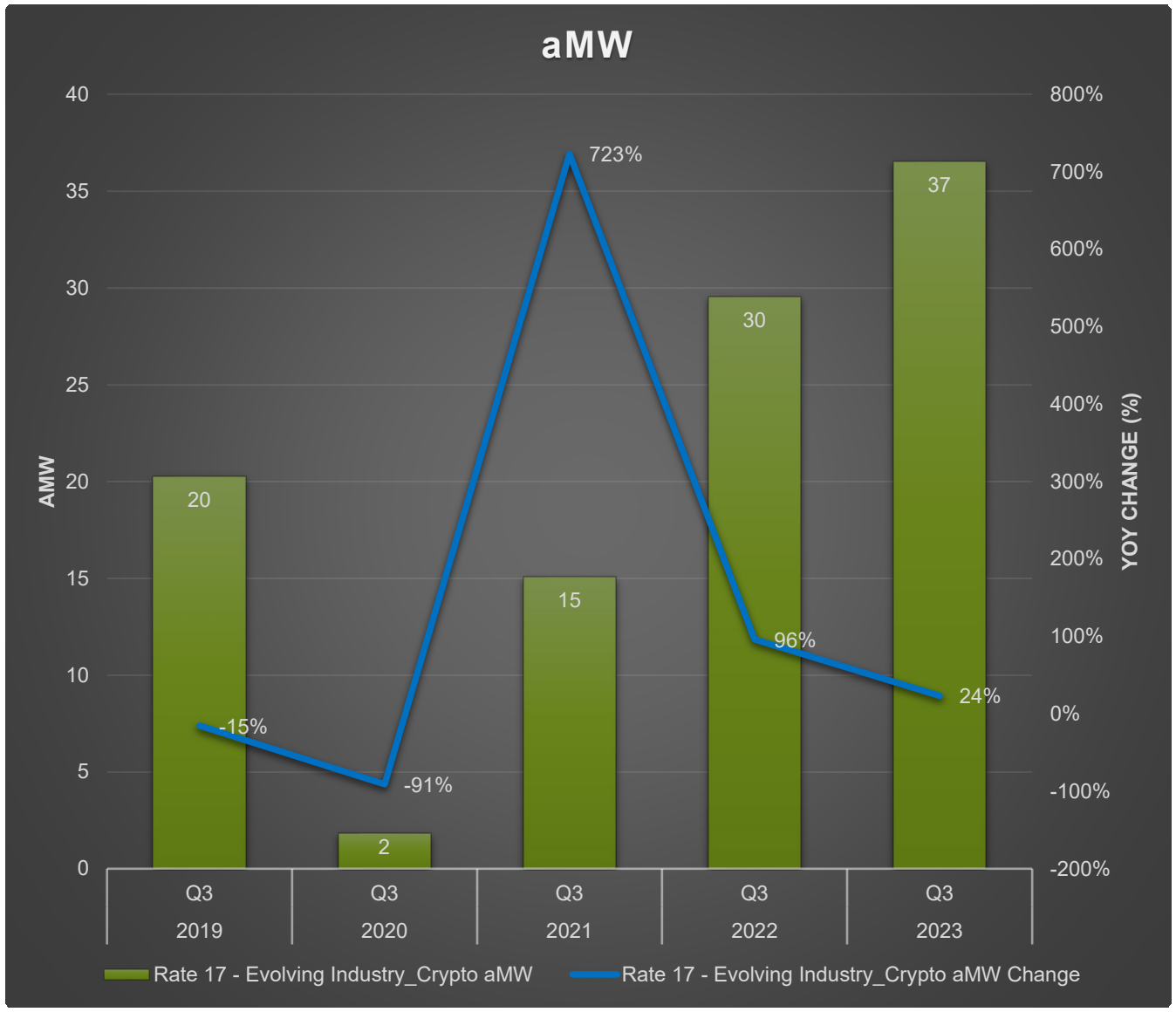
Q3 Rate Schedule 17 Evolving Industry Differences

Q3 **Cryptocurrency** actual loads were **~37 aMW**

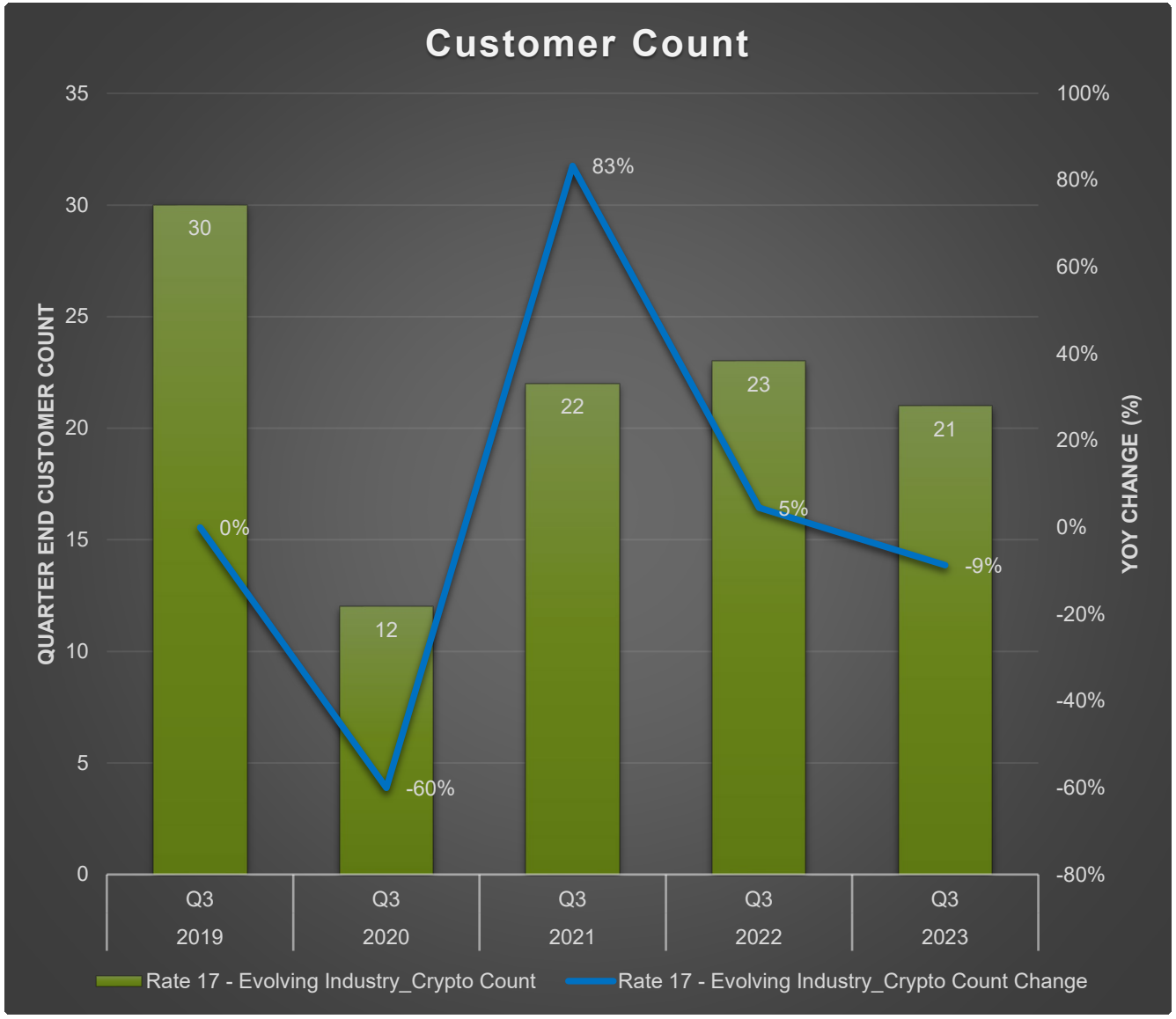
- We are expecting Crypto loads to grow a little bit more before stabilizing in Grant County.

Source: Bitcoin Difficulty vs. Price in USD Chart (bitinfocharts.com)

Q3 Rate Schedule 17
Evolving Industry History



Q3 Rate Schedule 17
Evolving Industry History



Q3 Rate Schedule 19 Com. Fast Charging EV Differences

Q3 **Commercial Fast Charging EV** actual loads were **~0.2 aMW**

- This rate did not exist when the 2023 Budget Forecast was completed
- Currently, there are 4 customers on this rate schedule

Q3 2023 Takeaways

Residential and Commercial loads are 2.1% and 3.1% below budget, on a weather adjusted basis. Irrigation was 14.8% above budget.

Net Rate Schedule 7, 14, 15, 16, 17, 19, 85, & 94 actual loads are below the budget forecast by around 54 aMW; with Rate Schedule 14, 15 and 16 having the most variance.

Cryptocurrency moved into the Evolving Industry Rate Schedule starting February 2023.

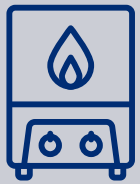
Thank You

Grant PUD

Powering our way of life.

Service	Rate	Icon	Description
Residential Service	1		Single family dwelling, individual apartment or farmhouse for single-phase service.
General Service	2		Accounts with loads not exceeding 500 kW (as measured by Billing Demand) for general service, commercial, multi-residential and miscellaneous outbuilding lighting, heating and power (excepting irrigation service) requirements.
General Service	2F		Single-phase loads not exceeding 500 watts as determined from the equipment's UL listing.
Irrigation Service	3		Customers with irrigation, orchard temperature control or soil drainage loads not exceeding 2,500 horsepower and other miscellaneous power needs including lighting.
Street Lighting Service	6		Street lighting

Service	Rate	Icon	Description
Large General Service	7		Accounts with loads not less than 200 kW or more than 5,000 kW Billing Demand for general service lighting, heating and power requirements. Service will NOT be provided under this rate schedule to process heating or boiler service loads greater than 3,000 kW unless such loads were served on this rate schedule prior to January 1, 2001.
Industrial Service	14		Industrial customers whose Billing Demand is greater than 5 MW/MVA and less than 15 MW/MVA
Large Industrial Service	15		Industrial customers whose Billing Demand is greater than or equal to 15 MW/MVA
AG Food Processing Service	16		Customers whose Billing Demand is greater than 5 MW/MVA and less than 15 MW/MVA at plants where the primary purpose is processing, canning, freezing or the frozen storage of agricultural food crops (including livestock, poultry and fish)

Service	Rate	Icon	Description
Evolving Industry	17		Retail customers whose energy load activity and/or industry meets the requirements of the Evolving Industry definition as detailed in the rate document.
Commercial Fast Charging Electric Vehicle Service	19		Retail accounts served by Grant PUD for facilities dedicated solely for direct current electric vehicle charging. Rate is only available to Level 3 (or above) fast charging stations with monthly loads of no more than 3,000 kW Billing Demand at an individual location.
AG Food Processing Boiler Service	85		Electric boilers which are separately metered and are primarily used for the purpose of processing, canning, or freezing agricultural food crops (including livestock, poultry and fish)
New Large Load	94		All New Large Loads, as defined by the District's Customer Service Policies. Service to such loads will be in accordance with the terms of this rate schedule.

Passive Optical Networks

Grant PUD

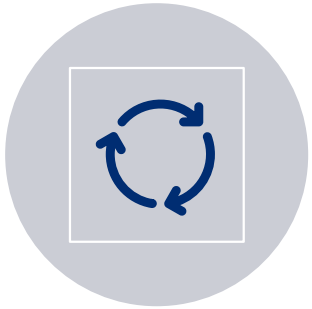
Powering our way of life.

Overview

NETWORK ARCHITECTURE

SERVICES

NETWORK SECURITY



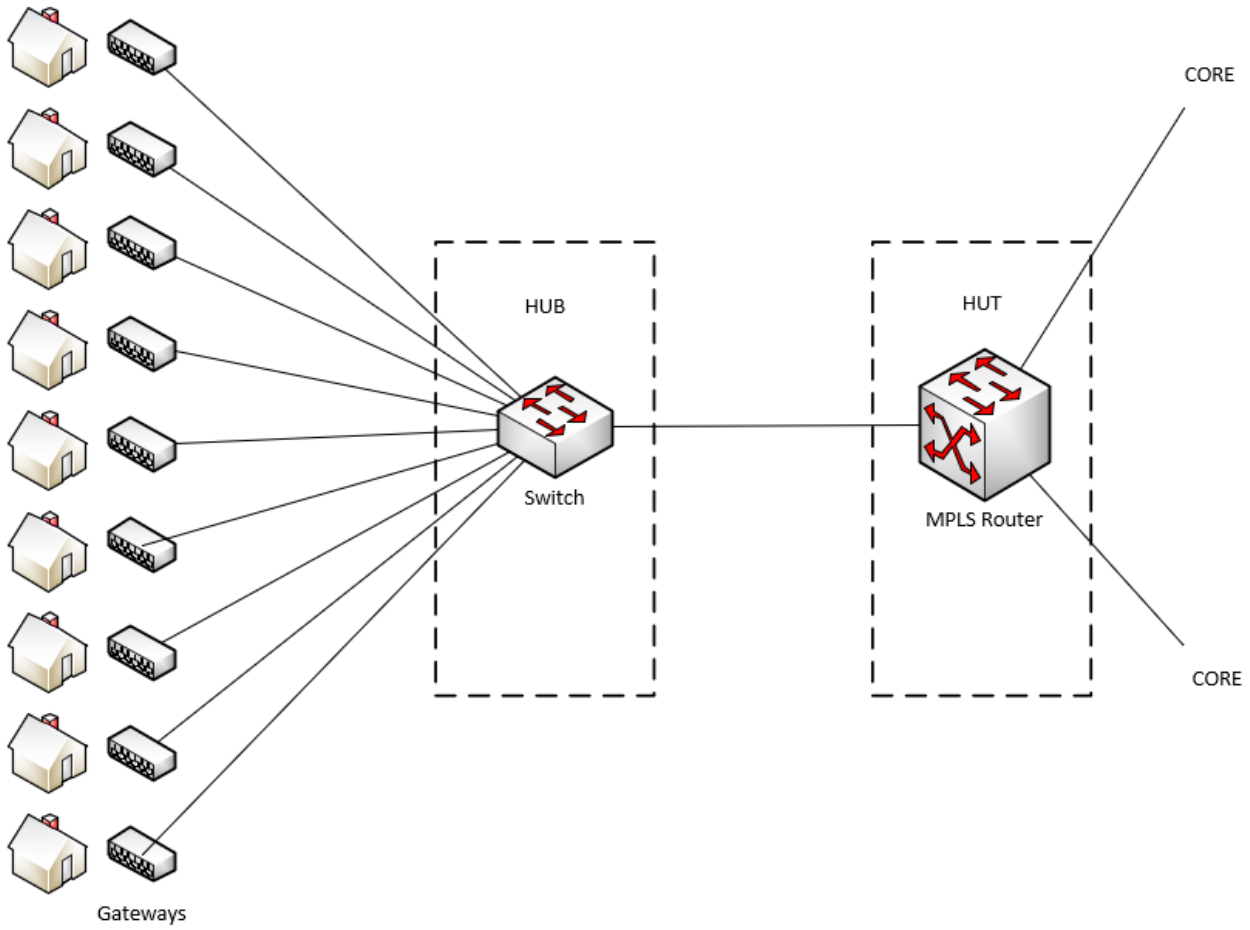
IMPLEMENTATION

1 Network Architecture

Active Ethernet Network

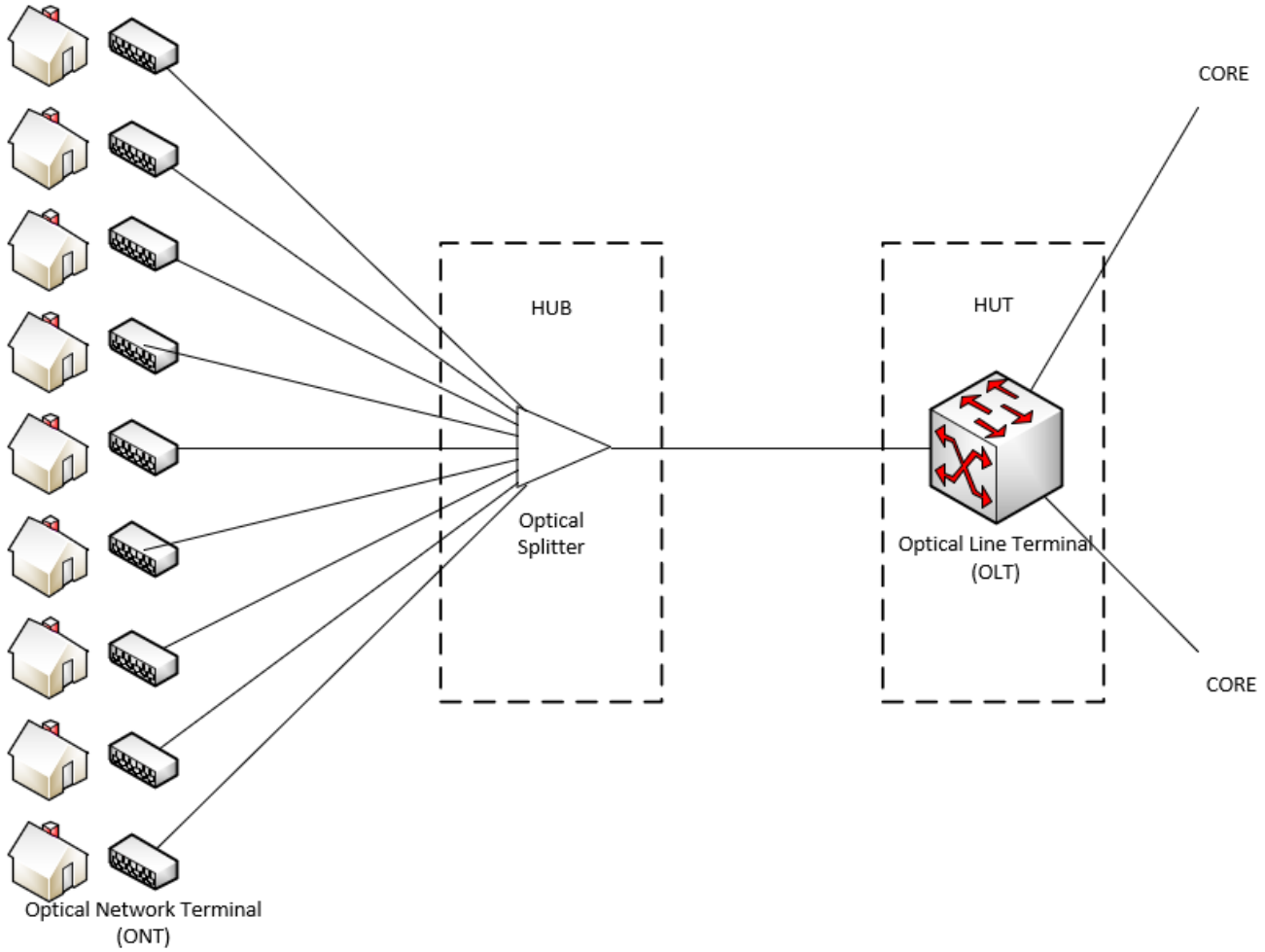
Current District design

Electricity and environmental controls (A/C) at hubs and huts



Passive Optical Network

Passive network components at the hub level



Unpowered Hubs

No requirements for electricity at the hubs

- Neighborhood hubs do not require power or environmental controls
- Switches replaced with 32-way or 64-way splitters
- Patch panels connect residential ONTs to optical splitters

Optical Network Terminal (ONT)

Equipment installed at the home

- Hardened devices are typically installed on the outside of the house and inside an enclosure
- Residential ports
  - High Speed Internet (up to 10Gb/s)
  - Telephone (POTS)
  - DS1
  - RF Coaxial for RF Overlay systems
- Powered by homeowner
- Cannot be provisioned directly

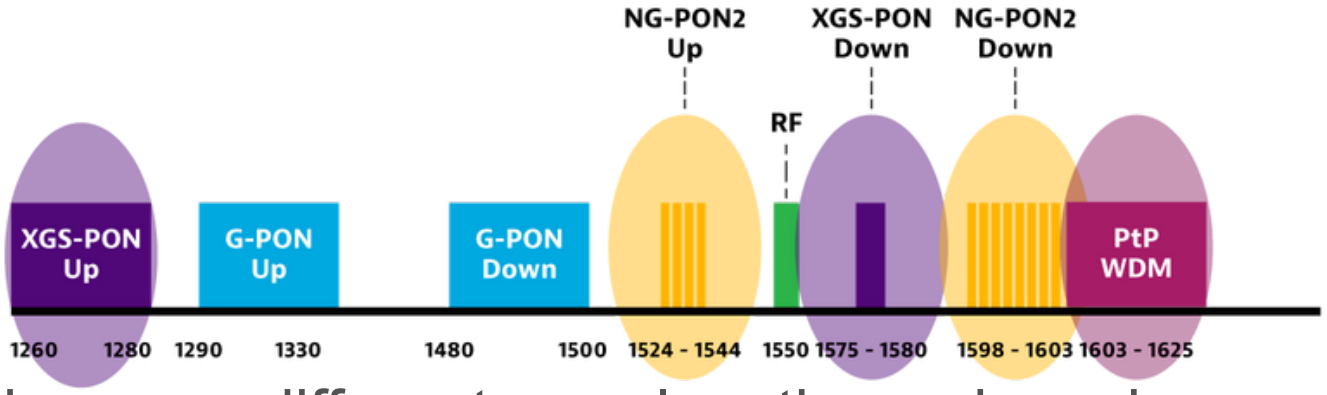
ONT and enclosure

Optical Line Terminal (OLT)

Aggregation equipment installed in the HUT

- Manages 32/64 ONTs on each PON port (8K on a single box)
- Provisions and monitors all ONTs
- Routes data back to the core network

PON versions



- PON versions use different wavelengths and can be combined on the same splitter
  - G-PON
    - 2.4 Gb/s down, 1.2 Gb/s up
    - Largest installed base. New installations surpassed by XGS-PON in 2022
  - XGS-PON
    - 10 Gb/s symmetrical
    - Highest number of new installations in 2022
  - NG-PON2
    - 40 Gb/s symmetrical using tunable optics
    - Price has kept installed numbers low
  - 25G-PON
    - 25 Gb/s symmetrical used for cell towers

2 Services

Service Challenges

Fiber-To-The-Home at a decision point

Bandwidth usage is doubling every 2-3 years

Competitors are offering >1 Gb/s HSI

Wholesale infrastructure was not designed to provide this level of service.

The RFP will replace the core, but does not address the access switches

TP-Link Tri-Band 7 Stream AX3200 Wi-Fi 6 Wireless Router

Item 1490466 | Model AX3200

4.4 (708) Write a review

Member Only Item

Sign In to See Price

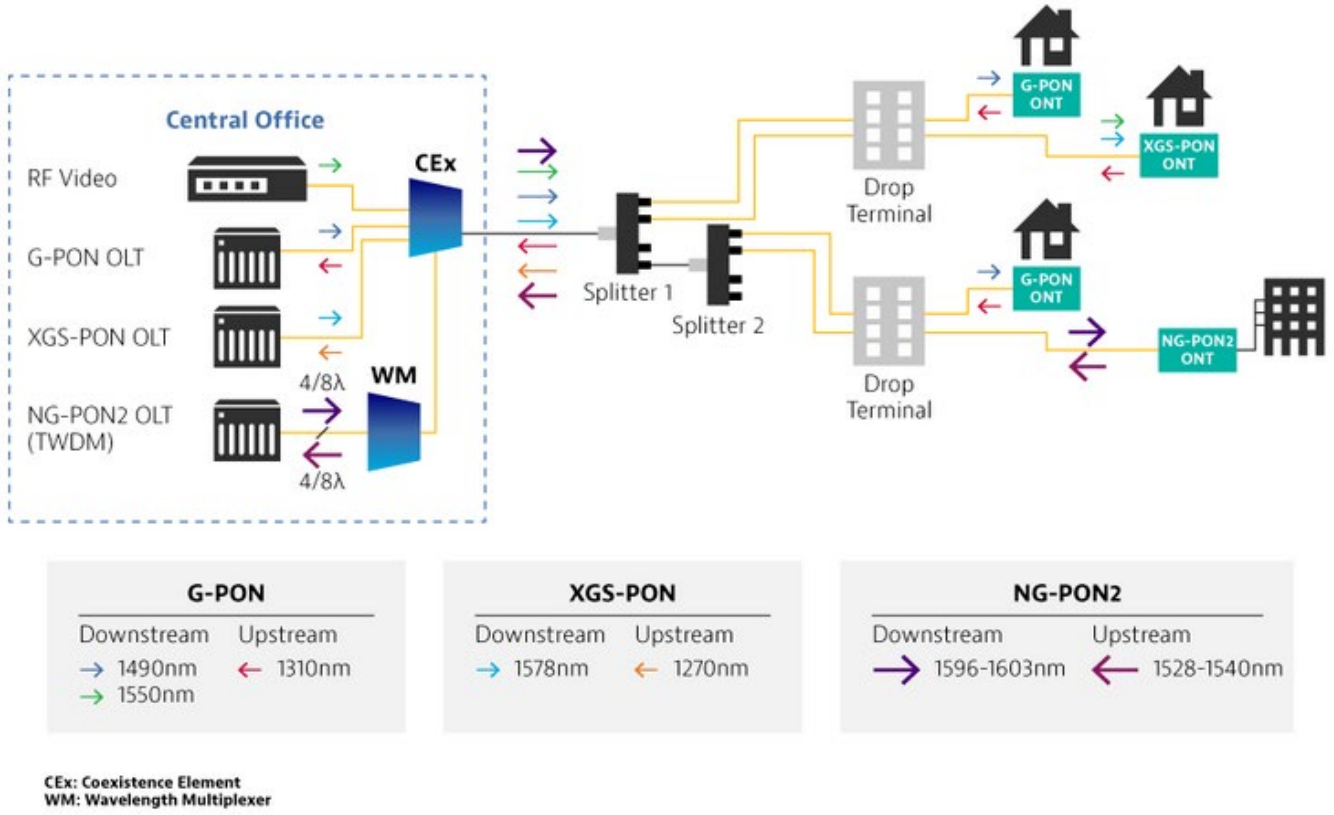
Shipping & Handling Included*

Features:

- Wi-Fi 6 Tri-band Speeds up to 3.2 Gbps
- Connect up to 4x More Devices without losing speed
- 2.5 Gbps WAN/LAN Port, for high-speed internet plans
- 1.5 GHz CPU for buffer-free 8K/4K streaming and gaming
- Easy Setup with All WiFi-Enabled Devices and Internet Service Providers

PON Services

- XGS-PON can provide 1/2.5/5 Gb/s HSI
- As PON technology improves the lightwaves can be combined on the same PON
- Dedicated 25G-PON or NG-PON can be added to provide 10G to a cell tower or data center
- PON ONTs can support HSI, POTS, DS1, and RF Video



CEx: Coexistence Element
WM: Wavelength Multiplexer

3 Network Security / Reliability

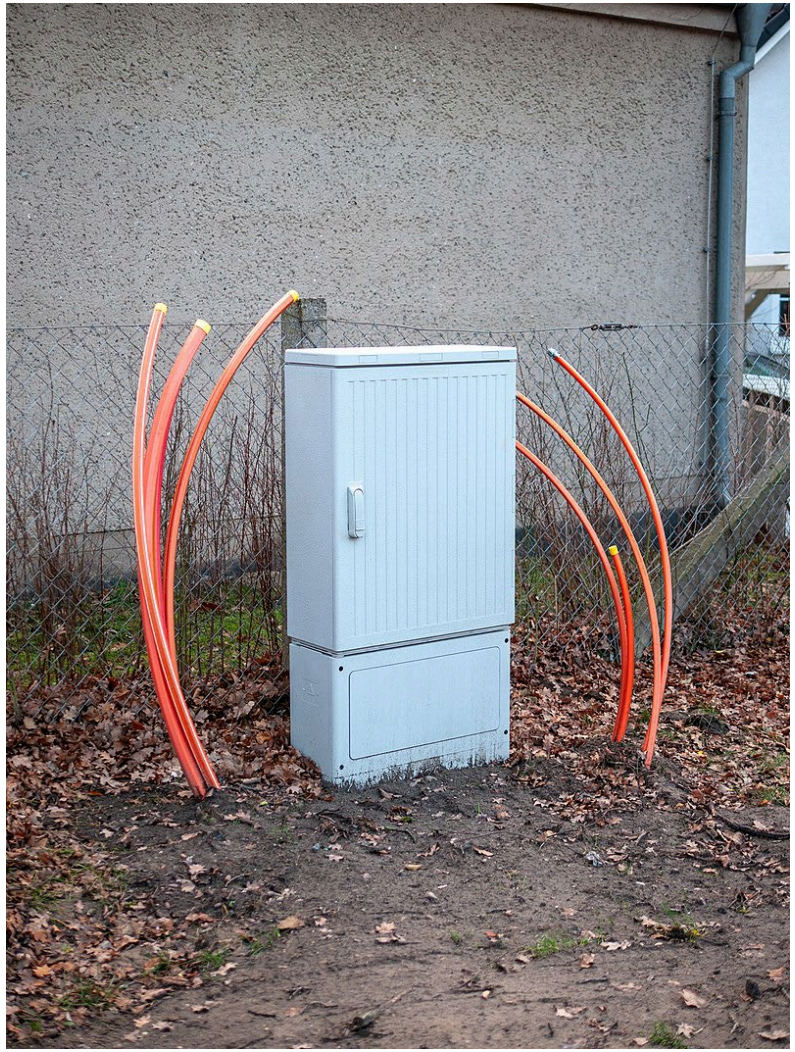
Active Ethernet Security Issues

- Security
  - HUBS
    - Located in neighborhoods and are challenging to secure or monitor physical access
    - Console port can be exploited
    - Fibers can be moved to different switch interfaces at the Hub
  - Gateways
    - Can be configured locally
    - May be replaced by a similarly configured device

PON Security

PON more secure than Active Ethernet.

- Hubs are patch panels and splitters
- Data passed through fiber connections at the Hub use GEM packets, not Ethernet
- Security risks become lower at the Hub
- ONTs are not designed to be provisioned directly. They are provisioned by the OLT and management software based on the location and serial number
- No console access to the ONT



4 Technology Comparsion

Active Ethernet

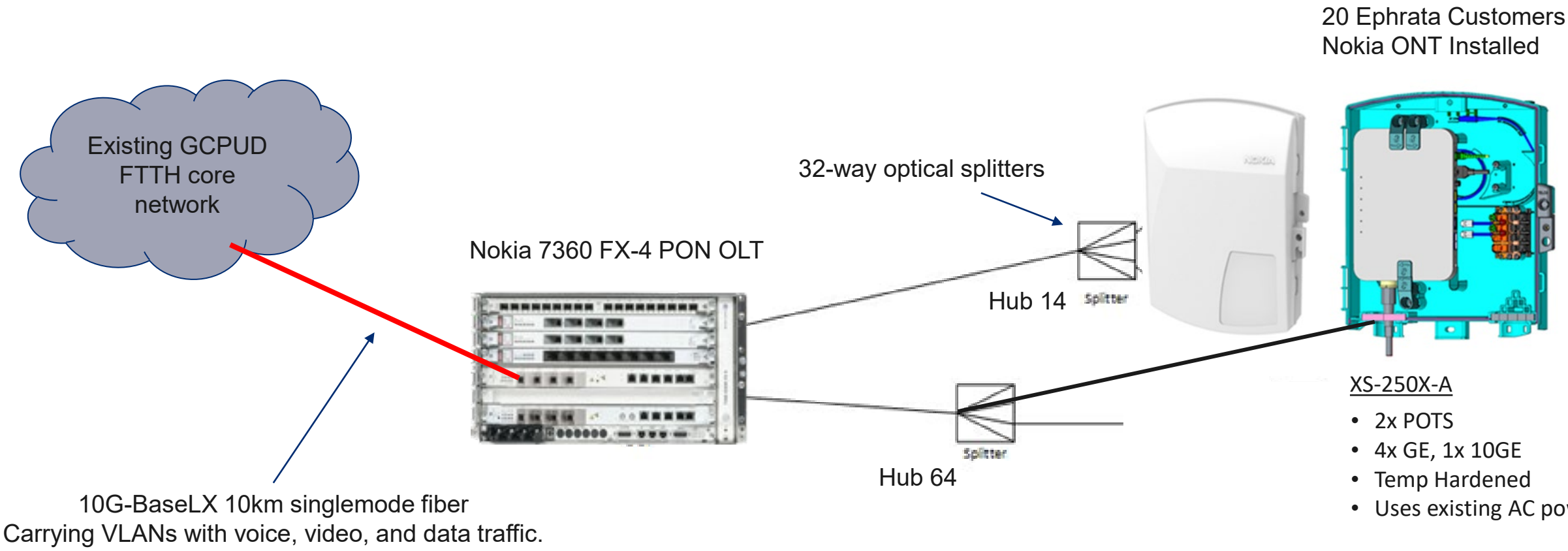
Pro	Con
• Current wholesale network has 30,000 Active Ethernet devices • Broad District knowledge of the technology	• Gateway cost is rising while availability is going down • Battery replacement and maintenance is a recurring cost • Electricity usage • A/C maintenance at 150 sites during summer heat • Less research into FTTH applications • Upgrade path beyond 1 Gbps services is very expensive

PON

Pro	Con
• Wide availability of inexpensive gateways • Industry focused R&D in the technology • Remove batteries and A/C from backyards • Increased network security • Lower cost with higher bandwidth • Provides >1Gbps services with a path to future upgrades	• District technology retraining • Maintaining two systems during the transition • Additional fiber needed between OLT and some hubs • Limited rack space at hubs and nodes for new equipment during the transition

5 Implementation

XGS-PON Proof of concept



Passive Optical Network Proof of Concept

Passive Optical Network (PON) Proof of Concept (POC)

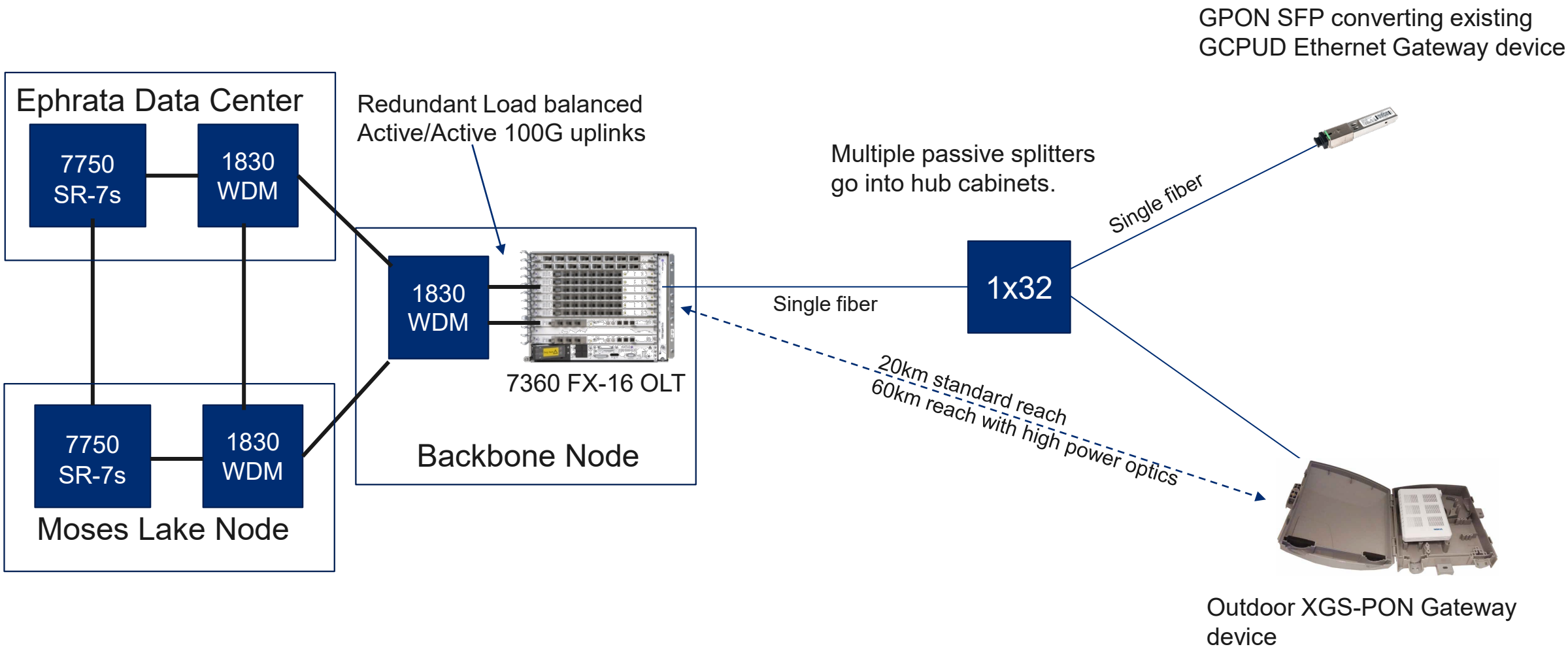
- The PON POC project commenced on August 14th through August 22nd with a total of 20 customers that participated in the replacement of gateways on at their houses with new PON ONTs (Optical Network Terminals).
- On average, each replacement took approximately 45 minutes to complete. The new ONTs have been actively monitored for just over a month, no issues with customer service have been reported.

PON POC Results

HUB 14 Neighborhood Location

- Proof of Concept completed in August using Hub 14 and Hub 64 in Ephrata.
- Hub 14 overheated and shut down during the first week of installs.
- All Hub 14 Active Ethernet services were interrupted.
- Hub 14 PON customers were not impacted

XGS-PON Network



Implementation Plan

#1 – Cap and Grow

1. PON OLTs installed at Hut/1830 locations
2. A single fiber is connected from the Hut to the Hub and connected to a 32/64-way splitter
3. When higher speed connections are requested:
    1. Customer's gateway is replaced with an ONT
    2. At the hub, the customer's fiber is disconnected from the switch and connected to the splitter
4. New customers and areas will be connected to the splitters rather than the switches
5. Failed gateways will be replaced with ONTs
6. At some point in the future, the remaining customers on a hub will transition to an ONT and the Hub's switch, electricity, and A/C can be retired.

Implementation Plan

#2 – Hub Upgrade

1. PON OLTs installed at Hut/1830 locations
2. Fiber cables are upgraded from the Hut to the Hub and connected to multiple 32/64-way splitters
3. All customers at a hub will be upgraded to PON ONTs during the same series of maintenances.
4. Active Ethernet equipment will be decommissioned and removed from the hubs

Questions?

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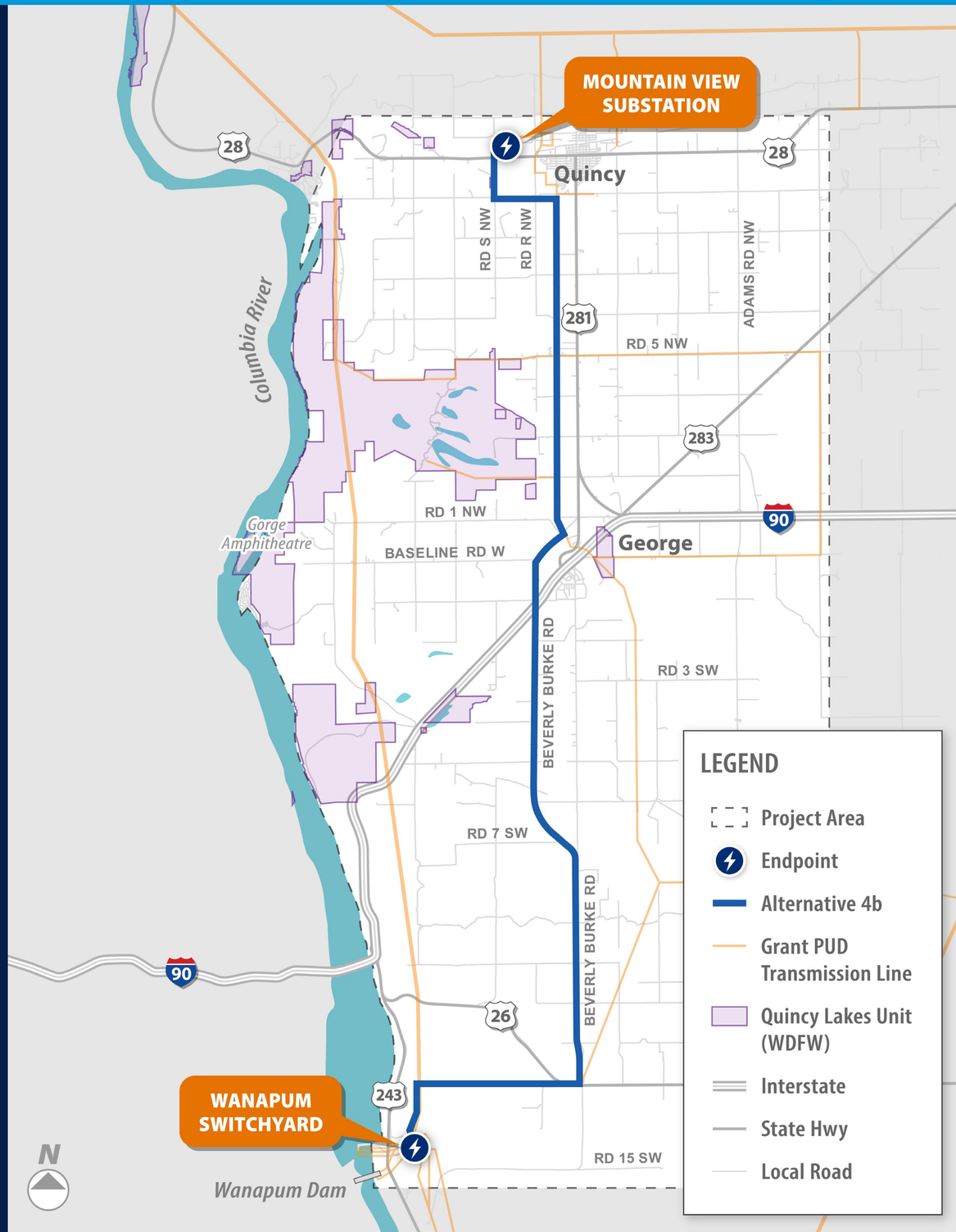
Grant PUD

WANAPUM – MOUNTAIN VIEW 230KV TRANSMISSION LINE PROJECT

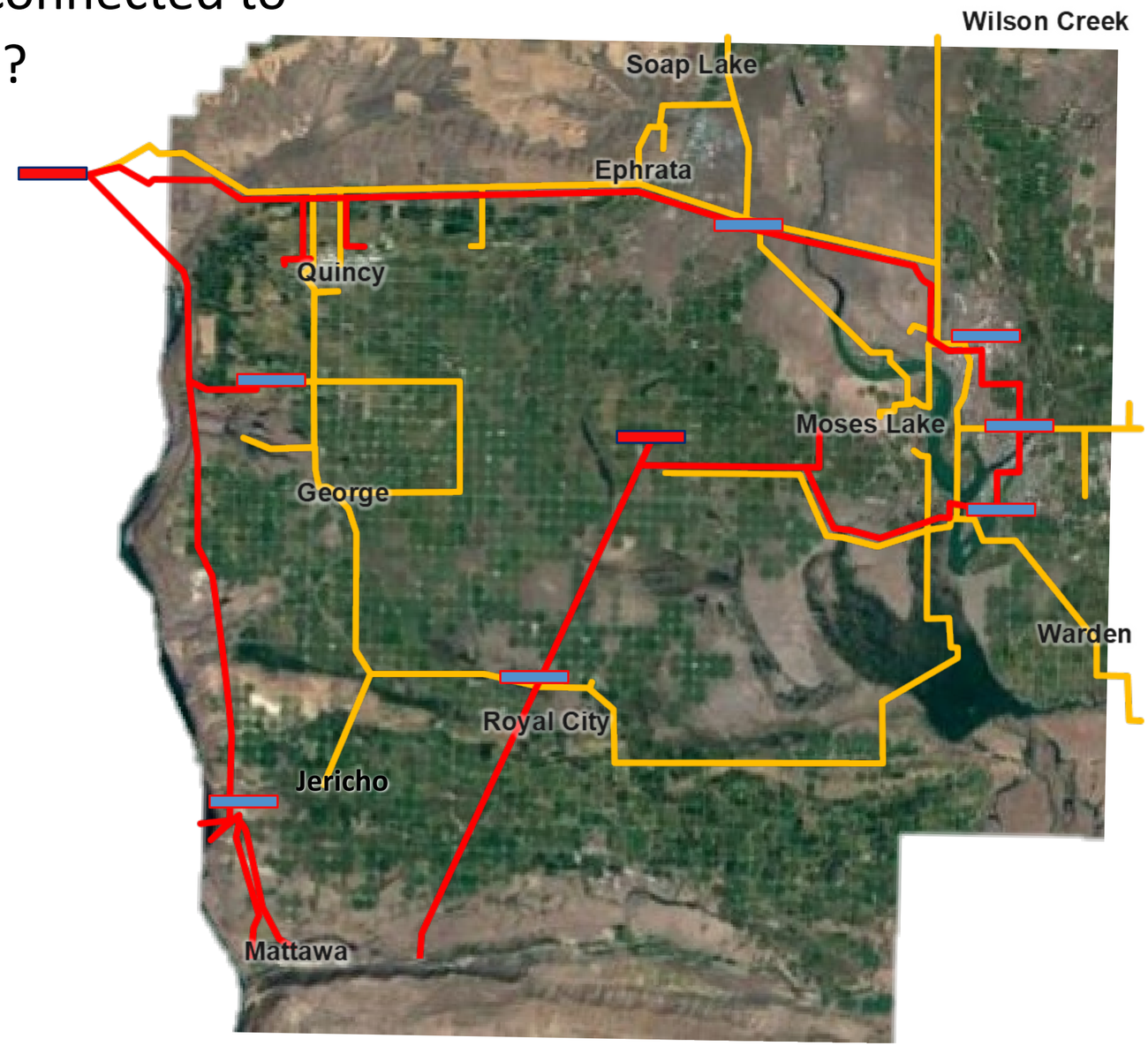
Jericho Substation & Transmission Tap

October 24, 2023
Commission Meeting



Question

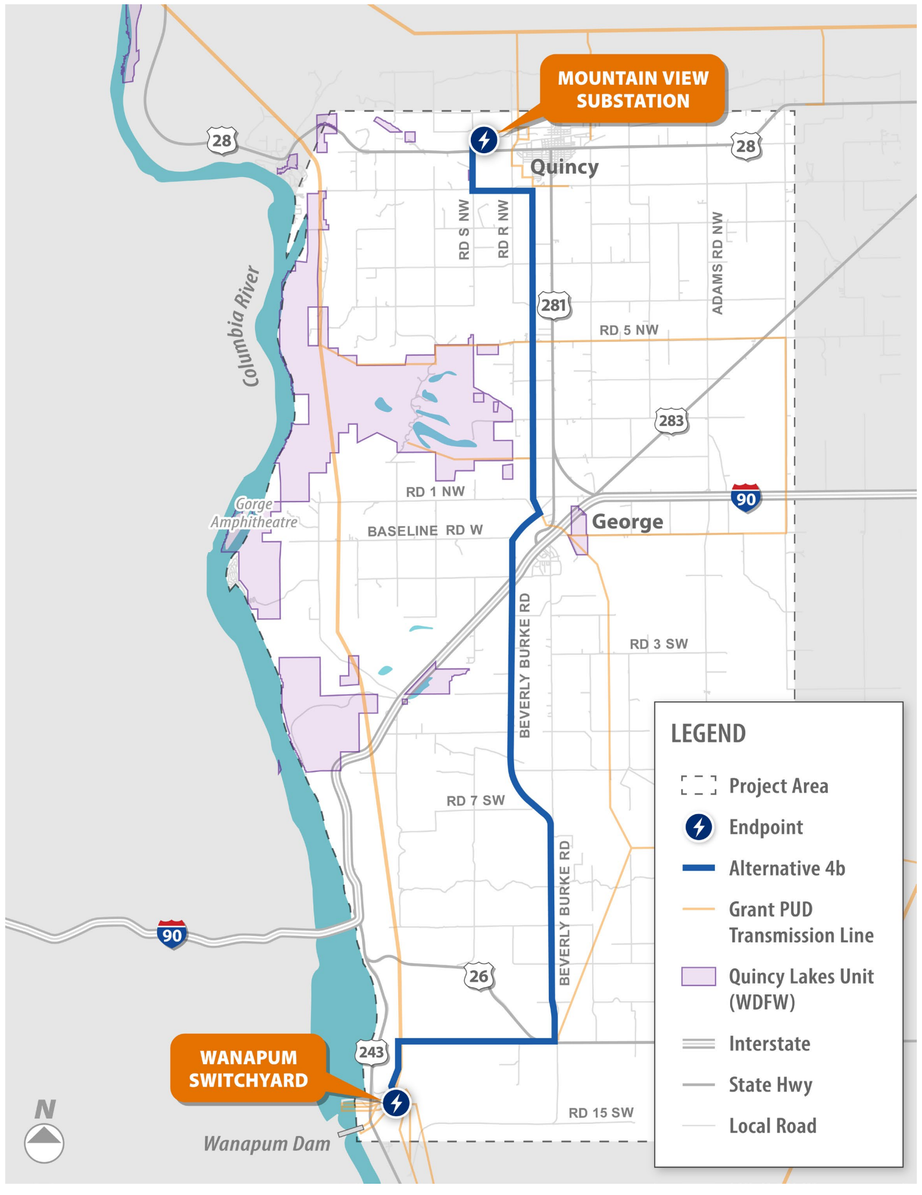
- Is Jericho Substation connected to Wanapum Switchyard?



WANAPUM – MOUNTAIN VIEW 230KV TRANSMISSION LINE PROJECT

Question

- Would a build/rebuild of transmission along Jericho Substation be feasible?



Considerations (from June 21, 23 Commission Meeting)

- Building adjacent to Jericho Tap does not appear practical due to the center pivots and other agricultural practices surrounding a significant portion of the existing line.
- Rebuilding the Jericho 115kV Tap to double circuit 115/230 would require a significant outage to Jericho Substation. Over 500 customers are sourced from Jericho Substation including a USBR Pumping Site.
- This option would have been the longest option (approx. 1 mile longer than 4b) and travel further east than all other options
- This option would have a bare minimum distance along existing road right-of-way providing less direct access from established roadways for construction and future maintenance.