ELDRIDGE ELECTRIC AND WATER UTILITY BOARD

February 3rd, 2026 – 5:00 pm

City Hall, 305 N. 3rd Street

1. Call to Order
2. Public Comment
3. Approval of Agenda
4. Approval of Utility Board Minutes from January 27th, 2026

5. Financial & Administrative
   A. Consideration to Approve Bills Payable
   B. Discussion on AMI metering
   C. Department Update

6. Electric Department
   A. Outages
   B. Department Update – Collin Wilson

7. Water Department
   A. Water Main Breaks
   B. Water Test Results
   C. Discussion on ROV Inspections
   D. Department Update – Cegan Long

8. Adjournment

NEXT REGULAR MEETING: Tuesday, February 17th, 2026, at 5:00 pm

Abby Petersen Mark Goodding Rachael Padavich Jeff Hamilton Michael Bristley

AGENDA

ELDRIDGE ELECTRIC AND WATER UTILITY BOARD

The regular meeting of the Board of Trustees of the Eldridge Electric and Water Utility Board was called to order at 5:00pm on 1/27/2026, at Eldridge City Hall.
The board members present were Michael Bristley, Abby Petersen, Jeff Hamilton, and Mark Goodding. Rachael Padavich was Absent. Also present were- Gage Lane, Sadie Wagner, Collin Wilson, Cegan Long, and Marty O'Boyle.
Public Comment – None
Hamilton Made Motion to Approve the agenda. Second by Petersen. All Ayes. Motion Carried.
Bristley Made Motion to Approve Utility Board Minutes from January 13th, 2026. Second By Hamilton. All Ayes Motion Carried.
Financial & Administrative-
Petersen Made Motion to Approve Bills Payable in the Amount of $81,705.12. Second By Hamilton. All Ayes. Motion Carried.
Petersen Made Motion to Approve a Return-to-Work Policy for City of Eldridge employees. Second By Goodding. All Ayes. Motion Carried.
Goodding Made Motion to Approve the City of Eldridge Personal Protective Equipment (PPE) Policy. Second By Hamilton. All Ayes. Motion Carried.
Petersen Made Motion to Approve the City of Eldridge Dress Code Policy. Second By Bristley. All Ayes. Motion Carried.
Petersen Made Motion to Approve the City of Eldridge Hold Harmless & Equipment Responsibility Agreement. Second By Goodding. All Ayes. Motion Carried.
Petersen Made Motion to Approve the City of Eldridge Donated Leave Policy. Second By Hamilton. All Ayes. Motion Carried.
Department Update- Wagner has sent out the fire protection notices and has held their budget meeting. The budget is expected to be presented at the next meeting. Bills should be sent out Friday January 30th, 26.
Electric Department-
Outages- One on January 20th, 26 at 2:00pm was back on at 2:20pm.
Department Update – Wilson said the conference that he and Stricker attended went well. While they were away, the crew was able to get some power running at Ivy Acres. budget meeting was held with Lemke, Wagner, and Northcutt. Other than that, things have been running smoothly.
Water Department
Water Main Breaks- one on January 14th, 26. Overall 9-hour repair.10,000-gallon loss.
Water Test Results- All clear and Passed.
Goodding Made Motion to approve revised resident notice to include resident interest in water main work in Fellner's Addition With additional information added- contact, phone number, and email address. Second By Petersen. All Ayes. Motion Carried.
Department Update – The ATS has been installed as well as The temporary generator cabinet. Well 4 has been pulled. Other than that, work consists of meter swaps.
Motion by Petersen to adjourn the meeting at 5:34 pm. Second by Goodding. All Ayes. Choose an item.

Abby Petersen Mark Goodding Rachael Padavich Jeff Hamilton Michael Bristley

BILLS PAYABLE

CHECK #	DEPT	FUND	VENDOR	DESCRIPTION	AMOUNT
227318	ELECTRIC	630-5-820-6340	ACCESS SYSTEMS LEASING	COPIER LEASE	$ 188.01
227319	ELECTRIC	630-5-820-6411	AHLERS & COONEY P.C.	CMPAS CONTRACT	$ 2,294.00
227320	ELECTRIC	630-5-820-6332	ALTEC INDUSTRIES INC.	BEACON LIGHT UNIT #681	$ 244.88
227321	WATER	600-5-810-6310	ALTORFER INC	TREATMENT PLANT GENERATOR MAINTENANCE	$ 703.05
227322	ELECTRIC	630-5-820-6310	ALWAYS CLEAN LLC	CLEANING SERVICES	$ 300.00
227323	ELECTRIC	630-5-820-6310	CINTAS CORPORATION	FLOOR MATS	$ 103.90
227323	ELECTRIC	630-5-820-6310	CINTAS CORPORATION	FLOOR MATS	$ 67.33
227324	ELECTRIC	630-5-820-6560	FLETCHER-REINHARDT CO.	INVENTORY	$ 650.00
227324	ELECTRIC	630-5-820-6560	FLETCHER-REINHARDT CO.	INVENTORY	$ 3,200.00
227324	ELECTRIC	630-5-820-6560	FLETCHER-REINHARDT CO.	INVENTORY	$ 1,095.40
227324	ELECTRIC	630-5-820-6560	FLETCHER-REINHARDT CO.	INVENTORY	$ 880.00
227325	ELECTRIC	630-5-820-6230	IA ASSN. MUNICIPAL UTIL.	SAFTEY TRAINING JAN-MARCH	$ 2,940.32
227326	ELECTRIC	630-5-820-6310	MERSCHMAN HARDWARE	BATTERIES	$ 39.98
227326	ELECTRIC	630-5-820-6507	MERSCHMAN HARDWARE	OPERATING SUPPLIES	$ 18.57
227327	ELECTRIC	630-5-820-6332	NAPA AUTO PARTS	GLASS ASSSEMBLY UNIT #81	$ 21.21
227327	WATER	600-5-810-6331	NAPA AUTO PARTS	FILTERS & SPARK PLUG	$ 42.54
227327	WATER	600-5-810-6331	NAPA AUTO PARTS	FILTERS UNIT #301	$ 34.55
227327	WATER	600-5-810-6331	NAPA AUTO PARTS	RADIATOR UNIT #45	$ 223.03
227328	WATER	600-5-810-6310	PLEASANT VALLEY REDI-MIX INC	N 2ND ST MAIN BREAK PATCH	$ 547.00
227329	WATER	600-5-810-6723	QUAD CITIES WINWATER CO	N 2ND WATER MAIN BREAK MATERIALS	$ 160.59
227329	WATER	600-5-810-6723	QUAD CITIES WINWATER CO	N 2ND ST WATER MAIN BREAK MATERIALS	$ 802.98
227330	WATER	600-5-810-6407	SAM, LLC	BI-ANNUAL WEB MAINTENANCE	$ 495.00
227330	ELECTRIC	630-5-820-6420	SAM, LLC	BI-ANNUAL WEB MAINTENANCE	$ 495.00
227331	ELECTRIC	630-5-820-6457	SKARSHAUG TESTING LAB	TESTING SUPPLIES	$ 248.52
227332	ELECTRIC	630-5-820-6512	STUART C IRBY CO	TOOLS	$ 652.70
227332	ELECTRIC	630-5-820-6560	STUART C IRBY CO	TRANSFORMERS	$ 3,728.95
227333	WATER	600-5-810-6310	TRI-CITY ELECTRIC COMPANY OF IOWA	OLD WATER TOWER POWER TROUBLE SHOOTING	$ 288.00
227334	WATER	600-5-810-6560	VAN WERT INC	AMERICAN FINISHINGS HOUSE METER	$ 1,487.10
227334	WATER	600-5-810-6506	VAN WERT INC	ERT REPLACEMENT MATERIALS	$ 126.75
DFT0000423	ELECTRIC	630-5-820-6503	CENTRAL MUNICIPAL POWER	ENERGY SUPPLY	$ 151,912.40
ACH	SPLIT	SPLIT	PAYROLL 01/29	PAYROLL 01/29	$ 38,991.66
				TOTAL:	**$ 212,983.42**

AGENDA

Eldridge Electric & Water
MEMORANDUM

To: Eldridge Electric & Water Utility Board of Trustees
From: Utility Administrative Manager, Sadie Wagner
Re: Recommendation to Consider Advanced Metering Infrastructure Metering Upgrade
Date: February 3rd, 2026

Utility Board of Trustees:

I am recommending that the Utility Board consider moving forward with Advanced Metering Infrastructure (AMI) metering as a potential upgrade to our current metering system.
AMI metering represents a significant modernization of utility operations by allowing meters to be read remotely through secure communication technology, rather than through manual meter reading. This upgrade would improve efficiency, accuracy, and responsiveness for both staff and customers.

Key benefits of AMI metering include:

- **Operational Efficiency:** Eliminates the need for manual meter reading, reducing labor demands and associated costs.
- **Improved Billing Accuracy:** Provides real-time usage data, minimizing estimated reads and billing errors.
- **Enhanced System Monitoring:** Allows for quicker identification of leaks, abnormal usage, and potential system issues.
- **Customer Service Improvements:** Gives customers more timely and detailed usage information, helping them better understand and manage consumption.
- **Long-Term Cost Savings:** While there is an upfront investment, AMI systems can reduce operational costs and improve asset management over time.

As part of this evaluation, staff have requested and received a preliminary quote from our current meter vendor, Van Wert, outlining costs and options for implementing AMI metering within our existing system. This quote is included for the Board's review.

At this time, no action is being requested beyond review and discussion. Staff is requesting the Utility Board's direction regarding the potential implementation of AMI metering.

I believe this upgrade is worth careful consideration as part of the utility's long-term planning and commitment to efficient, modern service delivery.

AGENDA

Tantalus Systems Inc.

1130 Situs Court
Suite 230
Raleigh, NC 27606
USA

AMI Proposal

Eldridge Municipal Utilities
Advanced Metering Infrastructure (AMI)
September 10, 2025

AGENDA

Tantalus Systems Inc.
1130 Situs Court,
Suite 230,
Raleigh, NC 27606
USA

P: 919.900.8970
F: 919.900.8978

tantalus.com

September 10, 2025

Eldridge Municipal Utilities
305 North 3rd St.
Eldridge, IA 52748

Proposal - Advanced Metering Infrastructure and Grid Modernization

Tantalus Systems Inc. is pleased to present our proposal for AMI and Grid Modernization. We appreciate the opportunity to provide you with this information.

Tantalus is dedicated to helping utilities modernize their distribution grids by harnessing the power of data across all their devices and systems deployed throughout the entire distribution grid – from the substation to the EV charger behind the meter. We offer smart grid solutions across multiple levels: intelligent connected devices, communications networks, data management, enterprise applications, and analytics.

Our proposed Tantalus Grid Modernization Platform (TGMP) offers your utility a differentiated approach that addresses each of your requirements, with the unique advantage of providing a technology architecture from one partner designed to deliver true data interoperability across new and existing devices, systems, and vendors. TGMP provides the devices and communications network to support day-to-day operations, such as activating and monitoring service connects and disconnects, while also enabling the specific grid modernization applications that your utility will need in the future.

Tantalus recognizes these are very important projects for every utility, and we look forward to discussing and demonstrating the details of our solution and how it supports all of your grid modernization goals.

Please do not hesitate to contact me at (325) 260-6717 or cchristensen@tantalus.com if you have any questions or require additional information.

We thank you for your consideration.

Best Regards,

Chris Christensen
Regional Sales Manager - Midwest

Executive Summary

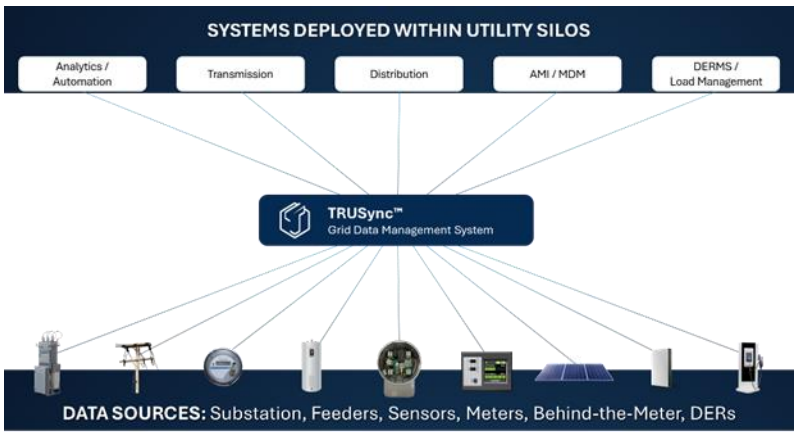
Tantalus is a technology company dedicated to helping utilities modernize their distribution grids. We do this by harnessing the power of data across all devices and systems deployed throughout the entire distribution grid – from the substation to the EV charger behind the meter. We offer smart grid solutions across multiple levels: intelligent connected devices, communications networks, data management, enterprise applications, and analytics.

The Tantalus portfolio of solutions proposed meets all the requirements of both your AMI and Grid Modernization goals. We can deliver the unique capabilities needed to develop an AMI system and related Grid Modernization applications that will meet your needs today and decades into the future with the least possible risk of obsolescence.
In a recent survey, 93% of utilities said modernizing their distribution grids was an important priority. The real challenge, however, is that utilities cannot modernize the distribution grid without truly interoperable data. To modernize the grid, utilities need to harness the power of data across every device deployed throughout the entire distribution grid — which now extends from the substation to emerging devices located behind the meter.
The Tantalus Grid Modernization Platform (TGMP) is a technology architecture that provides a secure, flexible, affordable path to grid modernization by delivering true data interoperability across new and existing devices, systems, and vendors. By accessing data from devices deployed throughout the distribution grid, TGMP delivers unprecedented visibility, command, and control levels to improve a utility's operations.

Connected devices that deliver the right data at the right time to the right system. One of our most important devices, the TRUSense Gateway™, provides substation-level power quality measurement at the electric meter socket AND control of Distributed Energy Resources (DERs), such as electric vehicle chargers, solar and storage inverters and smart appliances located behind the meter. The TRUSense Gateway ensures that no existing asset is stranded while creating a foundation for the future.

Communications, such as the TRUConnect™ Network, deliver the necessary flexibility and compatibility to evolve as the edge of the grid expands to include DERs deployed behind the meter.

Grid data management, such as the TRUSync™ Grid Data Management system, is a revolutionary system that automates data integration across every device, system, and vendor.



Software applications, such as the Insight head end / intuitive user interface and TRUFlex™ Load+DER Management, take advantage of having all a utility's data in one place.

Data analytics, such as our TRUGrid™ Transformer and TRUGrid Reliability analytics offerings, leverage Artificial Intelligence (AI) to protect assets and prioritize investments, proactively anticipate critical issues before an event occurs, and respond to problems in real-time.

Why our firm is qualified to handle this project – differentiators and strengths.

We understand that a future-ready metering infrastructure (AMI) provides robust bi-directional communications and interval-capable meters, interfaces with multiple software applications, and accommodates innovative technologies such as distributed automation, electric vehicles/fleets, and managing voltage levels. We support your mission to promote safety, improve member satisfaction and system reliability, and develop a strategic electrification plan for your communities.

We are excited about the opportunity to assist you in achieving those goals.

Our customer retention rate currently stands at 99.4%. This key proof point shows how we work with and support our clients at every engagement stage. Overall, we listen carefully to what our customers seek from the TRUConnect AMI system and Tantalus as a vendor.

With that in mind, ***key differentiators that our solution offers include:***

- **Backward compatibility:** As we develop new applications and deploy innovative technologies, Tantalus brings our customer community along, eliminating stranded assets. Each new innovative offering can be seamlessly integrated with previously deployed assets, enabling customers to enjoy new benefits without having to rip and replace.

- **Customer access to multiple meter platforms:** We want to provide you with the choice to implement a metrology platform that works best for you now and in the future. We are one of the only AMI vendors to support multiple meter manufacturers, including Itron, Landis+Gyr, and Aclara. This allows us the flexibility to seamlessly meet your needs from multiple vendors in the marketplace.

- **The TRUSense Gateway: A new, multi-purpose socket-based device that helps utilities to:**
    - Create a reliable and secure utility communications path into the premises using the same standards-based technologies that consumer-centric DERs need.
    - Monitor power quality at the socket, providing a high-resolution measurement of power delivery, transient power events, and local conditions such as sags, swells, outages, and even phase information.
    - Couple power quality monitoring with real-time communications, allowing utilities to avoid truck rolls while gaining a granular view of the distribution network.
    - Simplify the process of integrating behind-the-meter DERs onto the distribution system at scale through a translation layer to support the growing protocols and personalities involved.

The TRUSense Gateway is unique within the utility industry. It enables direct utility communications and coordination between DERs within the premises by linking with them using onboard, utility-secured Wi-Fi or HomePlug access. This enables scalable DER connectivity and management for the utility so they can be relied upon as assets for grid services. These connections allow the collection of revenue-grade metering data, operational status, configuration changes, and even active real-time control, depending on the applications chosen by your utility and the capabilities available in the DERs. Tantalus is the only vendor with the expertise and solutions to allow utilities to fully leverage their member's investment as the foundation of a modern grid.

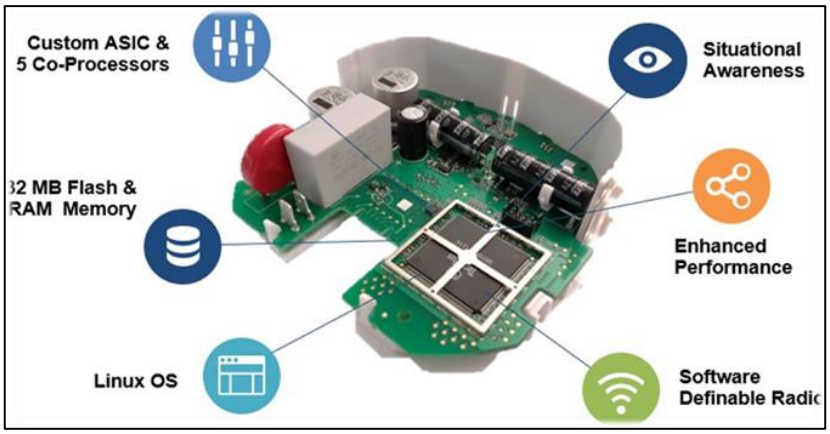
Most importantly, TRUSense provides a dedicated communications channel to the DER that is not subject to the variability of the consumers' broadband connections. Utility programs see connectivity losses of 20% per year when customer broadband is relied upon to reach smart devices, usually due to router failure and Wi-Fi password changes. Further, not all electric service customers have home broadband or Wi-Fi, so such models are inequitable to the community. TRUSense's equitable and innovative industrial-grade security and connectivity approach for behind-the-meter communications avoids the pitfalls of alternative AMI 2.0 solutions. For behind-the-meter DER communications, these other solutions depend upon the hit-or-miss communications that a utility customer's broadband service and Wi-Fi router represent compared to TRUSense.

Given the complexities associated with utilities' traditional approach to integrating and managing data across multiple systems and the compounding nature of the amount of data available to build comprehensive system plans, utilities need a single platform that gives them visibility, command, and control. By leveraging TGMP, you can become a data-driven utility without all the expertise needed to manage the flow of raw data. That means your team can focus on putting the data to good use and on strategic priorities by leveraging the data from existing assets, including AMI systems, grid optimization tools and load management programs, connectivity, grid optimization, EV infrastructure, and behind-the-meter load and DER management.

In addition to the higher-level differentiators above, ***the TRUConnect AMI solution has multiple technical differentiators, including*:**

1. **Insight –** A simple and easy-to-use interface for smart grid management. The intuitive interface lays out a clear path for users to get what they need quickly. Users can drill down from strategic macro displays to tactical component views in just three mouse clicks.
2. **TRUPush Data Delivery** - The TRUConnect AMI system utilizes a push method (TRUPush™), enabling the meters to deliver interval data as frequently as every five minutes for electric meters. Alerts, voltage events, and outages are pushed from the meters in near real-time. With TRUPush technology, data arrives sooner and will remain fresher than data provided in a batched method three or four times a day. Because of this, utilities can react faster to incoming information, and with the analytical tools available, they can preempt many undesirable situations, thus mitigating the negative impacts. Tantalus Closed Loop Voltage Reduction (CLVR) is an example of an application that utilizes TRUPush for real-time feedback across the grid edge to optimize voltage reduction.

3. **LAN Technology** - Tantalus designed TRUConnect AMI to accommodate smaller LANs to ensure effective command and control communications. Smaller LANs are more efficient, but they provide a more robust network. The frequency hopping channel management efficiency is achieved partly through the support of smaller LAN sizes, which leads to processing fewer messages per controller, thus making command and control more robust and dependable. Using smaller LANs also allows TRUConnect A.M.I. field deployments to be designed with fewer hops than most mesh-based AMI systems. This results in a more robust network with lower latency because meters rely on fewer devices to relay messages to the head end, which is especially valuable in outage and restoration reporting. Intelligent network routing and self-healing ensure the fewest hops possible without sacrificing the quality of the links.



4. **Endpoint Power** - Tantalus was the first to introduce a high-resolution real-time data processing platform, the Tantalus TRUConnect Edge module. TRUConnect Edge supports distributed intelligence across the TRUConnect AMI system with a powerful ASIC, five co-processors, 32MB RAM + 32 MB flash, and powerful computing capacity. Since its initial deployment in 2013, we have continually added capabilities and applications.

Tantalus offers the most cost-effective, efficient, and future-proof path. It is a future in which your utility becomes a playbook for utilities nationwide.

Advanced Metering Infrastructure

Tantalus is pleased to present our TRUConnect AMI solution for your consideration. Our TRUConnect AMI head end application software is offered in version 5.0.

A narrative description of the proposed AMI, system components, and capabilities:

- **Electric meters**
- **Network collectors**
- **Repeaters or other network devices**
- **Backhaul communication system**
- **Meter head end**

TRUConnect AMI (formerly known as TUNet) is a unique AMI system that will provide complete visibility to your network. We are proposing a system capable of addressing the multiple challenges you face. Our base bid includes the TRUSense Cellular Gateway, which enables visibility past the meter, specifically to distributed energy resources. TRUSense is equipped with advanced power quality measurement capability, which provides greater insight into the distribution network. In concert with the TRUGrid Reliability analytics solution, our solution includes everything necessary for you to achieve complete visibility of your network – and beyond.

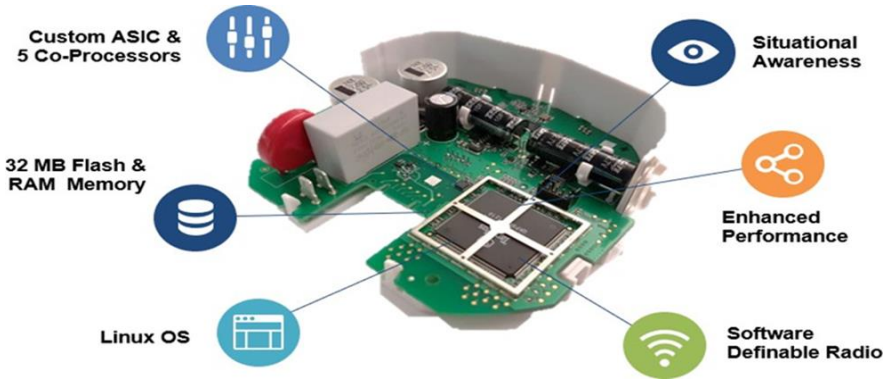
Our offer includes an option for the TRUGrid Transformer and TRUGrid Reliability analytics applications, which provide an enhanced view of general and transformer health on the grid, enabling you to work proactively in asset management. Optional applications include Closed-Loop Voltage Reduction (CLVR) and TRUFlex Load+DER Management, providing the ability to manage peak demand and a means to provide demand management. This system is purpose-built for the public power market and has been designed to meet your short- and long-term needs.

The system tailored for you includes:

- AMI head end
- Fully integrated ITRON meters equipped with Tantalus TRUConnect Edge modules; single phase standard, single phase disconnect, polyphase
- TRUSense Fiber Gateways
- TRUGrid Reliability analytics
- TRUGrid Transformer analytics

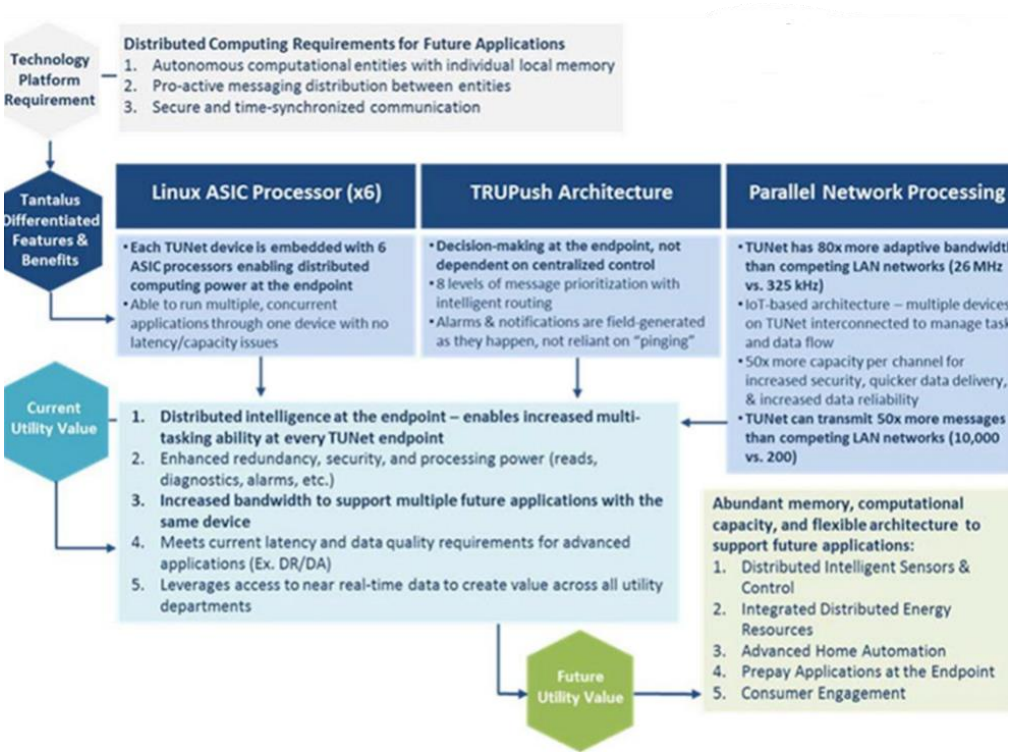
Electric Meters - Future Proof Module Capability
The TRUConnect Edge is an intelligent meter endpoint that supports edge applications and reports more granular data for your utility to leverage the power of this data in Tantalus Systems' advanced grid optimization operational and analytic applications. The resulting distributed intelligence allows your utility to analyze more granular data at the endpoint and make location-specific decisions faster without

transmitting all the data to a central server before acting. Tantalus has embedded highly parallel computing power into our Advanced Metering Infrastructure 2.0 (AMI 2.0) communication module, making smart meters and devices even smarter, which enables advanced communications and far higher-resolution data processing than other AMI systems. This platform was built in anticipation of tomorrow's bi-directional grid, predictive analytics, and applications that interact from the utility to the edge behind the meter to interact with consumer energy technologies within the premises.



TRUConnect Edge intelligent endpoint module

Security-Enhanced Linux (SELinux) OS provides a secure application platform. It also provides for rapid software development on a standardized platform that can support third-party endpoint applications. Based on work by the National Security Agency (NSA), SELinux provides enhanced security over many other systems and is utilized by the Department of Defense for critical systems.



Architectural/Processing Overview

Network Collectors - TRUSense Gateways
TRUConnect AMI can leverage multiple transport methods for the WAN/backhaul infrastructure, including cellular, fiber, broadband, etc. E ach transport method can b e used individually throughout the service territory or with others to provide the infrastructure best suited to current and evolving needs. Tantalus offers a variety of gateways to provide coverage for all types of deployments and terrain while limiting the risks associated with a single point of failure.

The TRUSense Gateway is a unique communications gateway that is a dual-purpose device that fits in the meter socket and:

- Creates a secure utility communications path into the premises that uses the same standards-based technologies that consumer-centric DERs use
- Monitors electric service at the socket, acting as a sensor that provides cutting-edge power quality, reliability monitoring, and even phase identification and measures two-way power flow
- Greatly simplifies AMI deployment by eliminating the need for pole-mounted or tower-mounted infrastructure that is complex and more difficult to maintain
- It connects directly to your Fiber-to-the-Home (FTTH) network with a single fiber strand at each point.

With this device, the utility can manage connectivity with important devices like EV chargers, solar inverters, and smart appliances so that these important resources are not reliant on the customer's Wi-Fi password or sharing bandwidth with Netflix and "Call of Duty." The consumer continues to have access to a device without any responsibility or inconvenience relating to managing its connectivity. Virtually all smart devices use standard IP-based communications like Wi-Fi and HomePlug, which the TRUSense Gateway supports. Standard protocols such as OpenADR and IEEE 2030.5 can be directly managed from Tantalus applications.

Hybrid Architecture—Tantalus' system leverages a hybrid design that combines the benefits of a point-to-multipoint system and a mesh system. Our networks make direct connections from the endpoint to the network and are intentionally designed with fewer hops. As a result, our system can outperform a mesh but has the added benefit of a self-healing network, unlike a point-to-multipoint system.

The TRUConnect Network was developed specifically to meet the needs of utilities with varied service territories and offers the best characteristics of both point-to-multipoint and hierarchical network architectures, using the most appropriate combination of technologies for a given coverage and application needs.

The TRUConnect Network leverages such technologies as:

- 900MHz non-licensed band hierarchical Neighborhood/Local Area Network (NAN)/(LAN)
- Flexible backhaul options (Fiber, cellular, satellite, microwave)

The TRUConnect Network draws from the strengths of these technologies. It improves their use by allowing them to be combined for network coverage certainty regardless of the geographic characteristics of the distribution network. The flexible backhaul options work with an unlicensed hierarchical 900MHz LAN to provide efficient coverage in low and high-density areas and full system functionality to all endpoints regardless of location. The LAN connects directly to an IP-based backhaul, such as Fiber (including Fiber to the home), cellular, and broadband, allowing the most cost-effective and reliable communications

technology deployed in each part of the utility's territory. In addition, Tantalus always looks to leverage a utility's existing IP communication infrastructure, such as your FTTH network, for efficient backhaul.

The TRUConnect Edge module in every TRUConnect AMI device also acts as a repeater, extending LAN coverage if needed, providing economical coverage in more rural deployments, and providing network redundancy. Even though we offer Repeaters that can be used to extend the reach of the LAN when needed, these are not required for your deployment.

Communications System

TRUConnect Network LANs are self-initializing, self-healing, and self-optimizing. Upon initial power-up, the meters find an optimal path to the head end and several alternate paths, which are stored in the TRUConnect Edge module in the meter. If the primary path is not viable (loss of communication between the meter and the head end), the meter will utilize one of its alternate paths to push data to the head end. The meter will search for new paths to the head end if the alternate path is unavailable. During periods of self-healing, interval and alarm data continue to be recorded in non-volatile memory so that no data is lost. The self-healing feature does not require any manual intervention.

During the design process, the capacity of the TRUSense Gateways is evaluated to ensure path redundancy and reduced hop levels. While the system can support up to 15 hops, each utility's TRUConnect Network is purposefully designed with fewer hops. The design targets fewer than three hops on average across the system to ensure effective command and control communications. Smaller LANs are more efficient, and they provide a more robust network. Lower latency results because meters rely on fewer devices to relay messages to the head end, a feature especially valuable in outage and restoration reporting functions. Intelligent network routing and self-healing capability ensure the fewest hops possible without sacrificing the quality of the links.

Other AMI systems communicate to thousands of meters through a single data collection point controller. These systems also utilize polling to bring back meter data, with many meters pouring data into one controller collection point. This bottleneck makes it difficult for high-priority messages to get through. The inefficient use of network capacity means there is either limited capacity to support basic AMI such as remote disconnect, outage, and alarms, or additional infrastructure is needed to ensure support, limiting the ability to add applications beyond AMI.

The following points are critical to successfully implementing your wider Grid Modernization Solutions and goals.

TRUConnect AMI's data delivery method is unique and significantly benefits our customers. The network utilizes a predominantly push method (TRUPush™) for data delivery, which enables the meters to deliver interval data as frequently as every five minutes without needing to be queried by control software or wait for an allotted timeslot. Bellwether meters receive one-minute reads within several seconds. Alarms and exceptions, including sag/swell and outage/restoral messages, are pushed in real-time with high priority to the head end.

With TRUPush technology, data arrives sooner and will remain fresher, enhancing a utility's situational awareness. Alternatively, most other AMI systems continue to batch data that is polled between 1 and 6 times daily. Tantalus' distinct approach to push data rather than wait for batched data allows utilities to react

faster to the incoming information and leverage analytical tools available to preempt many situations, thus mitigating potential disruptions, outages, and other operational issues that can inconvenience customers. With TRUPush, the intelligent TRUConnect Edge modules act as a community to ensure the highest value data is delivered first, dynamically utilizing available network capacity to push the highest priority data to the head end (TRUConnect AMI supports eight levels of priority with DA and Outages prioritized over statistics and interval data).

Tantalus utility customers use TRUPush technology to enable applications where near-real-time data is required, such as voltage management, checking transformer/line loading before servicing, power factor management, grid optimization (e.g., Conservation Voltage Reduction, Volt/VAR Optimization) and faster response to exceptions such as consumption on inactive accounts. Tantalus also provides more timely and robust input to enhance the value of engineering and operational tools such as Milsoft's Windmill and advanced DMS and SCADA. The TRUConnect Network's real-time data delivery enhances customer portals and enables customer service calls to be resolved effectively.

All data, including outage notifications, sags, and swells, provide a timestamp and full-scale register read and are pushed to the head end in real-time. The TRUConnect Network's TRUPush design also enables utilities to provide consumers with more detailed and timely consumption data and alerts, such as outages and water leaks (when coupled with ERT/ORION/R900 technology).

AMI Head End

The TRUConnect AMI head end provides a seamless interface for smart grid management, leveraging an intuitive user experience that allows views from strategic macro displays to tactical components with only a few clicks. Reports and analytics are easily accessible, and the user interface is supported on smartphones and tablets, allowing authorized employees secure access on the go. We have eliminated the frustration of having to click and drill down endlessly to get where you need to be. The CSR landing page is user-configurable and supports robust search capabilities to help retrieve data quickly and better serve customers.

The dashboards provide a wealth of information at a glance. Users can evaluate the entire system and easily pinpoint and address critical issues. The user interface delivers a variety of methods (slide-out menus, drop-down boxes, and expanding widgets) for the next actions, which makes an enormous amount of information instantly accessible without cluttering the screen. Information and controls presented to the user are appropriate to their role within the utility, completely configurable, and password protected (e.g., a Customer Service Representative should not be bothered with or have access to network performance statistics).

The head end supports horizontal scaling by adding more CPU cores to support additional message-handling processes. Messages are received by the head end and put into queues. The SP process handles the single-phase messages, and the PP process takes polyphase messages. As more CPU cores are added, more processes are run to utilize the additional CPU cores. In addition to adding more cores, more memory is added to support the different methods, allowing the system to scale up and down. The other major message handlers are the OEM processes for Itron ERT, ORION, Neptune MIU, and DNP3 for SCADA messages.

The optional TRUGrid Reliability analytics solution enables your team to proactively find latent issues affecting system reliability. With this tool, engineering can identify portions of their feeders that frequently experience blinks and flickers that are not detected at the substation or reported by the OMS. They can see if disturbances are due to environmental effects such as lightning, high wind gusts, freezing rain or snow, or seasonal disturbances such as known migratory animal patterns. Dispatchers and supervisors are alerted to flickering locations typically indicative of failing transformers, splices, secondaries, underground micro faults, service lines, socket corrosion, and loose lugs through the alarming and reporting system before they become larger problems.

The optional TRUGrid Transformer analytics solution is included with our offer. For the first time, utilities can monitor, anticipate, and prioritize transformer issues in near real-time before they happen. This means they can avoid the costs, disruptions in service, and safety issues that transformer failures bring. Moreover, they can proactively plan how to manage and upgrade their assets to stay one step ahead of trouble.

With visualized real-time transformer data across the grid, you will be better equipped to prevent outages, explosions, meltdowns, and major associated costs to prevent needless capital expenditures. You will preserve existing transformer assets and prioritize which aspects of your system need attention next, allowing you to forecast transformer requirements and streamline the order process for new components.

Additional/Optional Network Applications

TRUSync Grid Data Management Applications

The TRUSync Grid Data Management platform from Tantalus enables the interoperability of a wide range of devices through an emerging Institute of Electrical and Electronics Engineers (IEEE) standard. By deploying TRUSync, a utility's smart grid deployment can operate as one intelligent, interoperable system with the necessary scalability and flexibility as more electric vehicles (EVs) and distributed energy resources (DERs) are deployed at the edge of the grid. Simplifying the acquisition, transport, and integration of data over energy networks, TRUSync gives utilities and renewable energy producers the technology they need to manage and control power distribution at every point on the grid. This suite of advanced software applications acquires, transports, and presents complex energy data for analysis, action, and automated control – so utilities can keep the energy flowing to customers effectively, efficiently, and safely.

TRUFlex Load+DER Management System

TRUFlex provides aggregated management of behind-the-meter loads and DERs. Modules include participant management, device and diagnostics, event scheduling, execution, and monitoring. Application Program Interfaces (APIs) support integration with an upstream Distributed Energy Management System (DERMS) or Advanced Distribution Management System (ADMS).

The LC-2300 load controller series features a TRUConnect Edge module and works with TRUFlex to independently manage up to four loads from each device: two directly with 30A 240VAC relays, the two by controlling lower-current control circuits such as central air conditioning. TRUFlex will be a key component of our Grid Modernization Proposal.

Closed Loop Voltage Reduction (CLVR)

The Tantalus CLVR application is designed to give real visibility of voltages at the grid edge so that the system can be truly optimized. CLVR turns any TRUConnect Network-connected smart meter and TRUSense Fiber Gateway anywhere in the grid into a bellwether voltage monitoring DA device. While all TRUConnect meters send alarms when voltages cross high and low thresholds, those meters chosen as CLVR bellwethers quickly send these alarms using DNP3 to the SCADA/DMS so the voltage controls can be adjusted accordingly to bring grid edge voltages back into line. Furthermore, CLVR bellwether devices provide one-minute streaming voltage data to the SCADA/DMS for trending and advanced control logic that completes the ideal voltage management solution.

To help choose appropriate devices to designate as CLVR bellwethers, TRUConnect AMI collects and stores more than 12 months of detailed interval voltage data. By analyzing this data, an optimal set of bellwethers can be chosen that covers all seasons, times of day, and load conditions so that the set truly represents all customers on the system.

CLVR optimized voltage optimization results, whether the goal is reducing peak demand with Demand Voltage Reduction, energy consumption with Conservation Voltage Reduction, or system losses with Voltage/VAR optimization.

Insight Overview

- Provides an intuitive visualization of the system and the AMI functionality
- Manages and monitors the network
- Displays meter interval data, alarms, and events
- Provides a platform for 3rd-party applications over TRUConnect™ AMI
- It interfaces with the utility's other applications, such as billing, MDM, CIS, OMS, Prepay, DA, LMS, and SCADA. The web-based interface provides easy access to a wealth of data and functionality to facilitate customer service and improve operational efficiency. Insight supports a variety of integration methods and formats, including MultiSpeak, DNP3, and flat-file.

Insight provides a central database designed to collect and accommodate large amounts of data. Insight accumulates and processes the data pushed from the LAN (e.g., meter read data, DA devices, events, alerts ...) in real-time. The data is stored in Insight for up to 14 months and can be exported to other systems (such as an MDM or billing system) for longer retention.

Network Analysis and Troubleshooting

Insight, the graphical user interface, includes many diagnostic and troubleshooting capabilities. Please see the Insight section below, which includes a detailed description and screenshots.

- System Dashboards provide read reliability reports, active event logs, the status of networking equipment, and performance.
- TRUView is a geolocation GIS tool that displays real-time events and system performance data in a graphical format.
- Insight provides the Network and System Status snapshot as a landing screen. It includes network and system statistics such as meter read rate and communication infrastructure health.

Insight

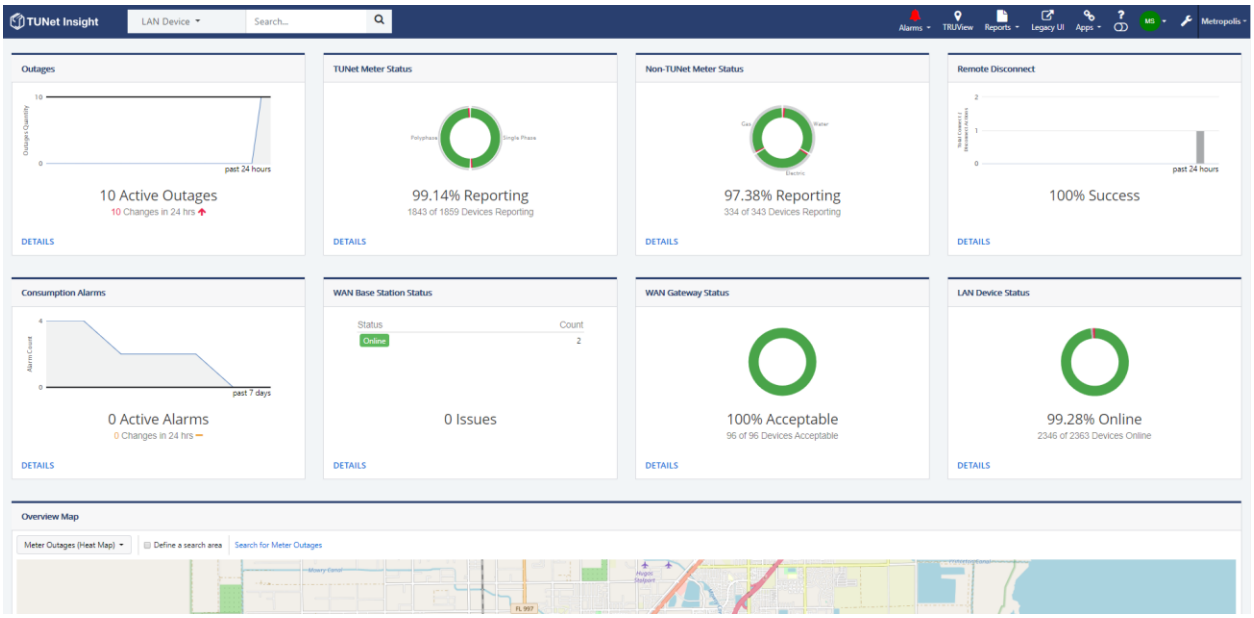
Working with a design consultant and receiving feedback from current customers, the Insight GUI is user-centric - providing more content at a glance with a configurable, intuitive design. Reports and analytics are easily accessible, and the GUI is supported on smartphones and tablets, allowing authorized employees secure access on the go.

Starting with a deep understanding of the tasks to be accomplished and the typical utility workflow, the GUI facilitates maximum productivity. For example, the initial screen differs depending on the User's login credentials. A System Administrator will be taken to one landing page, while a Customer Service Representative (CSR) will be taken to another. The information they need differs greatly because the Administrator and CSR perform different tasks. The CSR landing page is user-configurable and supports robust search capabilities to help retrieve data quickly and better serve customers.

The intuitive interface lays out a clear path for users to get what they need - quickly. Users can drill down from strategic macro displays to tactical component views in just three clicks. This ease of use reduces the learning curve and improves productivity for users at all levels of the organization.

The dashboard provides a wealth of information at a glance. Users can evaluate the entire system and easily pinpoint and address critical issues. Balancing the format of the data content with a combination of tables, text, and graphics improves comprehension. The Insight GUI provides a variety of methods for the next actions (slide-out menus, drop-down boxes, expanding widgets), which makes an enormous amount of information instantly accessible without cluttering the screen.

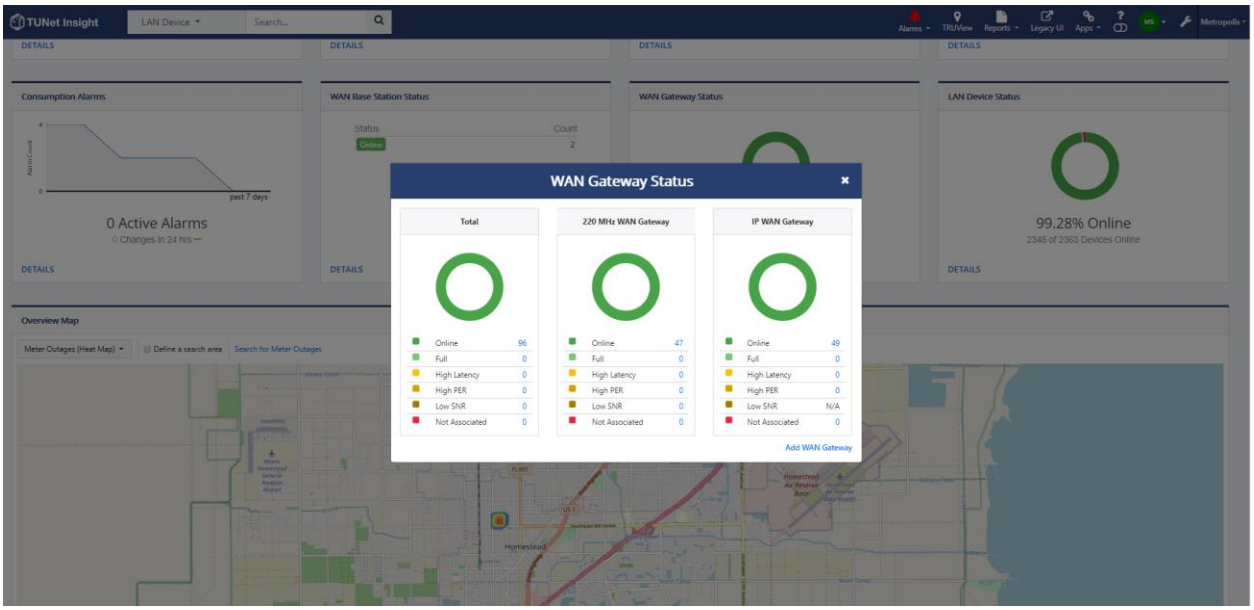
System Landing Screen for the Network Administrator



From this screen:

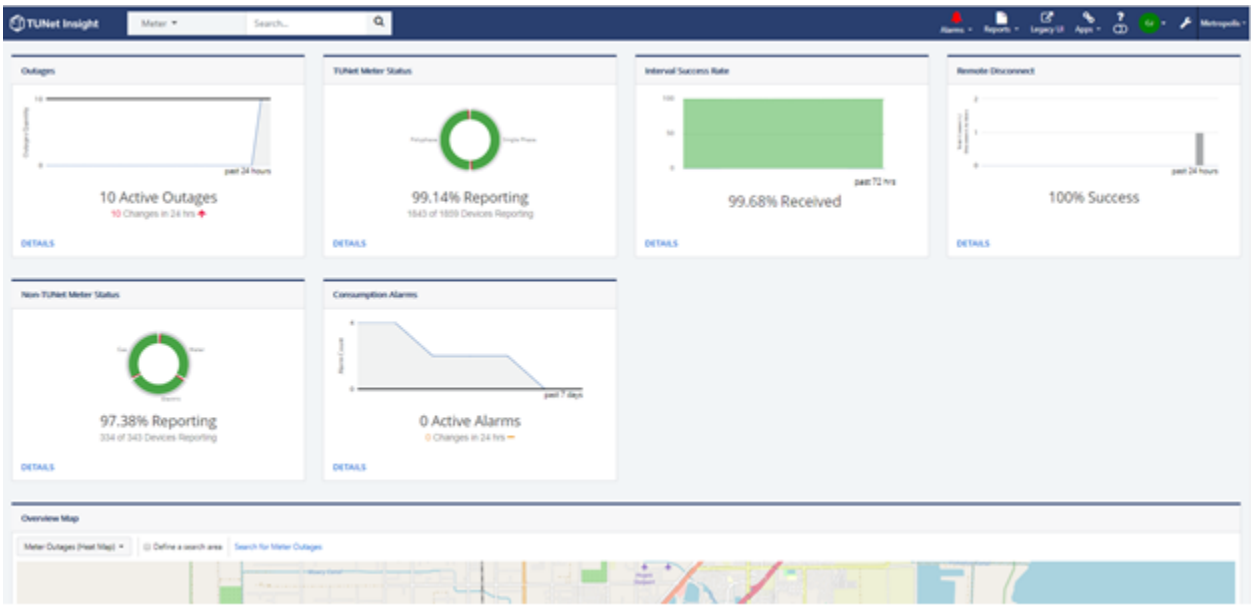
- The Network Administrator can manage User Accounts and assign privileges.
- System Dashboards provide read reliability reports, active event logs, and the status of networking equipment and performance.
- Access to system-wide meter outages
- Status of Remote Disconnect meters
- Status of Water and Gas meters and RF modules
- Access and manage specific applications for each utility and application on the headend.
- Additionally, TRUView GIS displays real-time events and system performance data in a geographical format.
- Access and notification of alarms

WAN Gateway Status Drop-down Details Screen for the Network Administrator

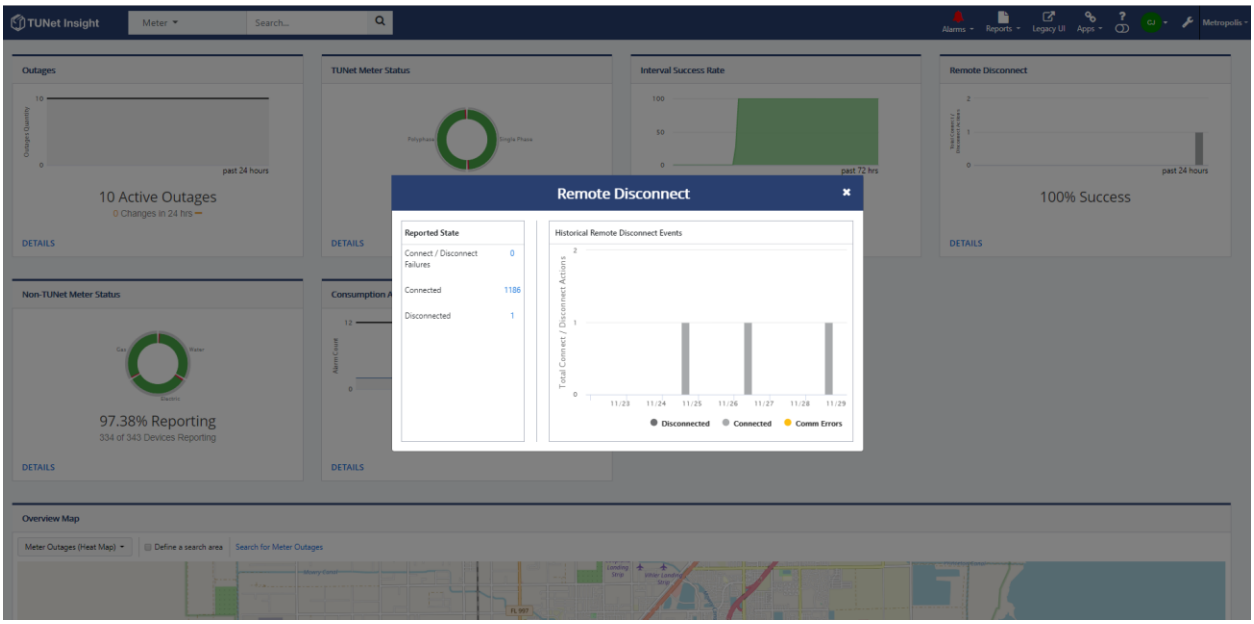


The above screen provides the status of your network infrastructure in one easy view.

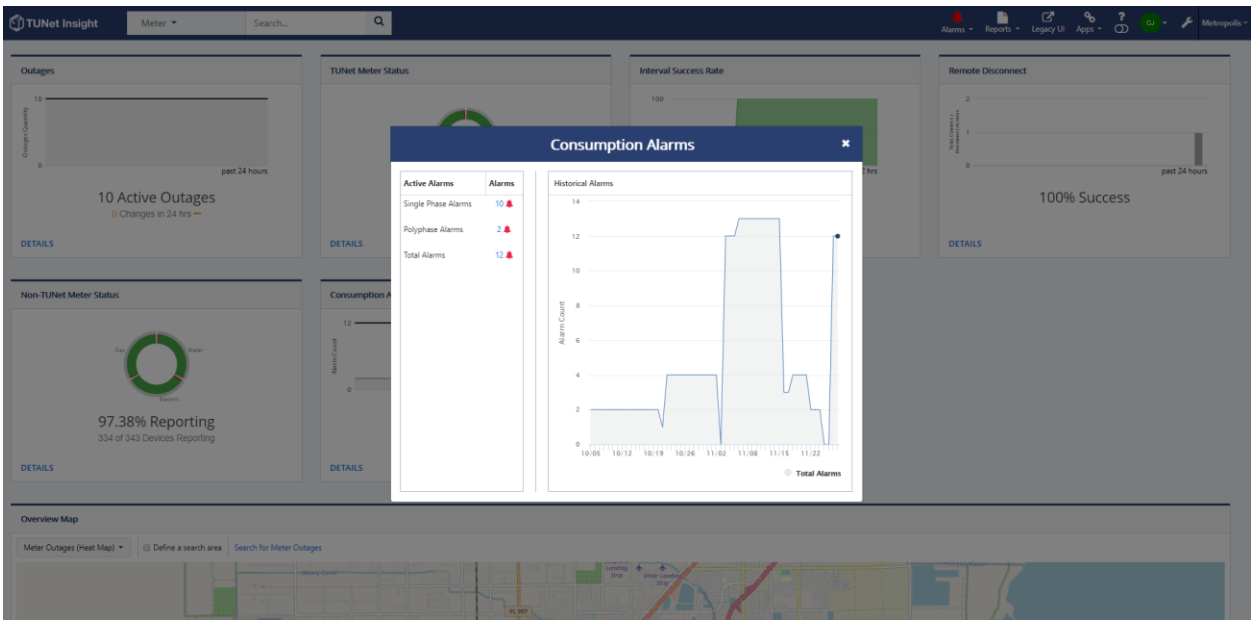
Landing Page for Customer Service Representative



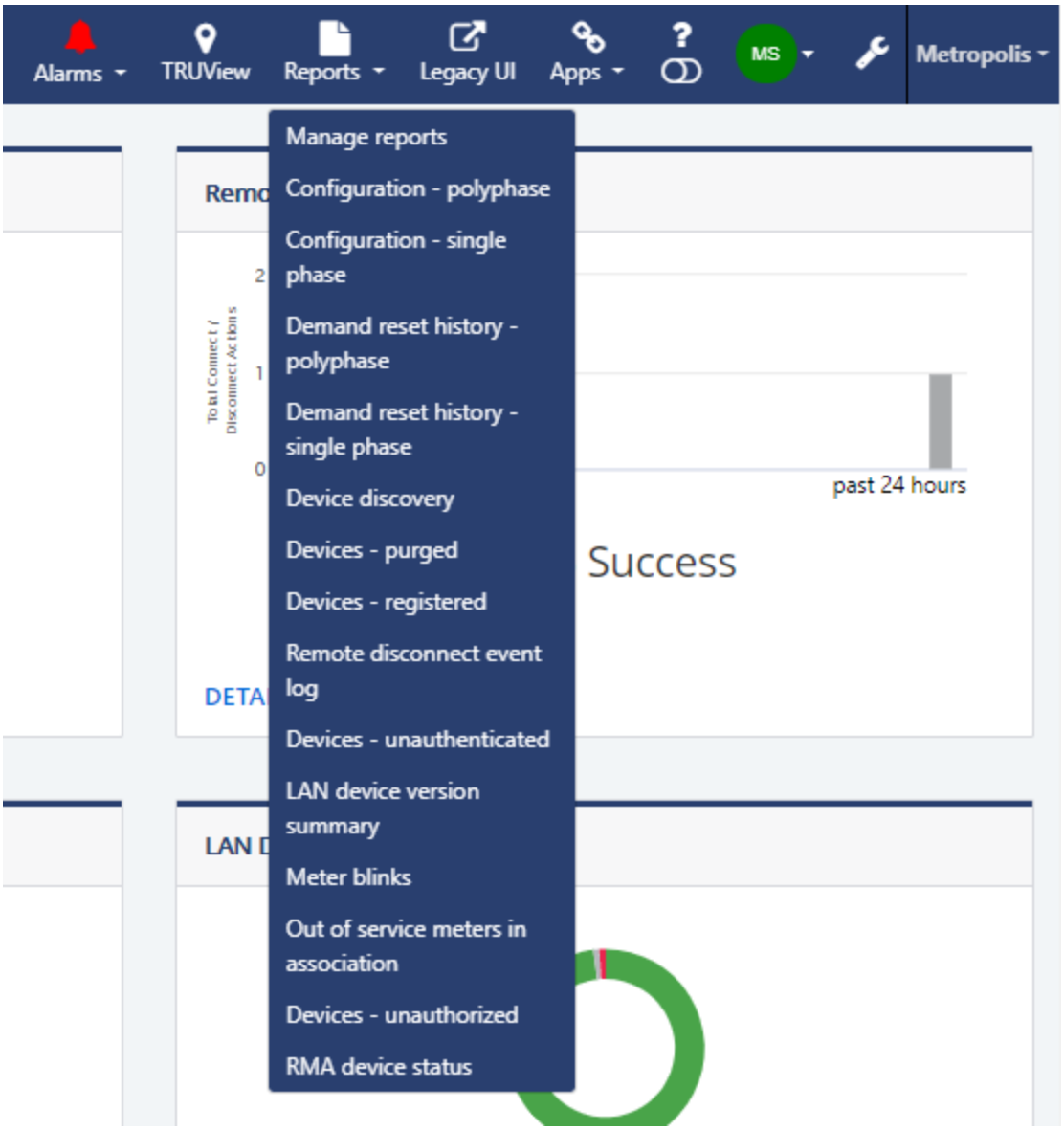
Pull Down Detail for Customer Service Representative



The above screen depicts the meters that are disconnected.

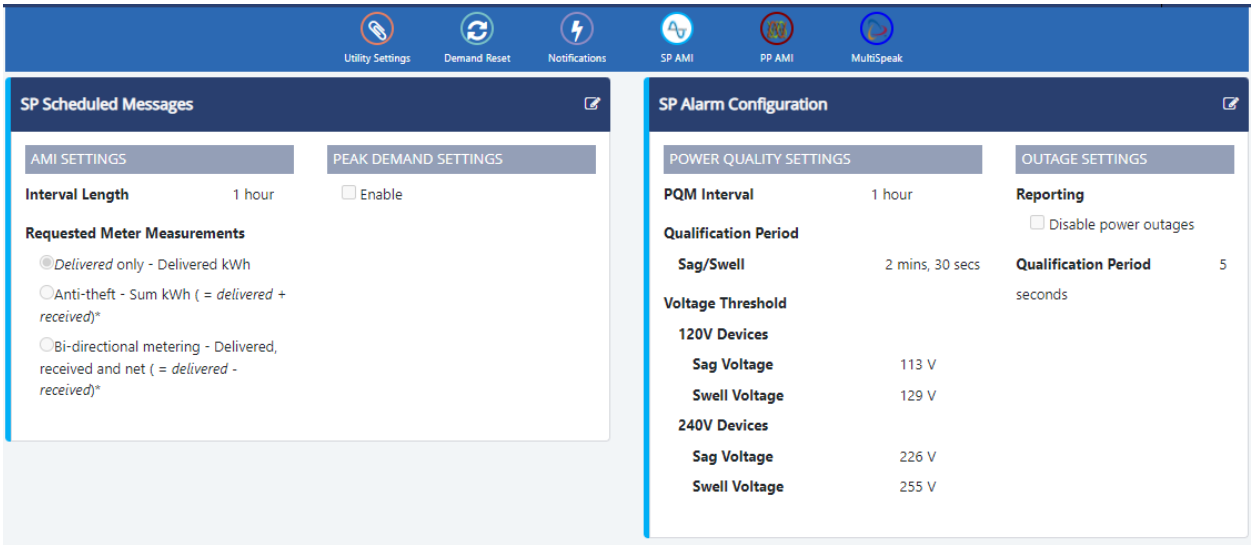


The above screen shows a detailed history of meters that violated consumption alarms for the past 60 days.



Sample of some pre-canned reports in Insight.

Utility Configuration Screen



The Utility Configuration screen provides the utility to set system defaults such as:

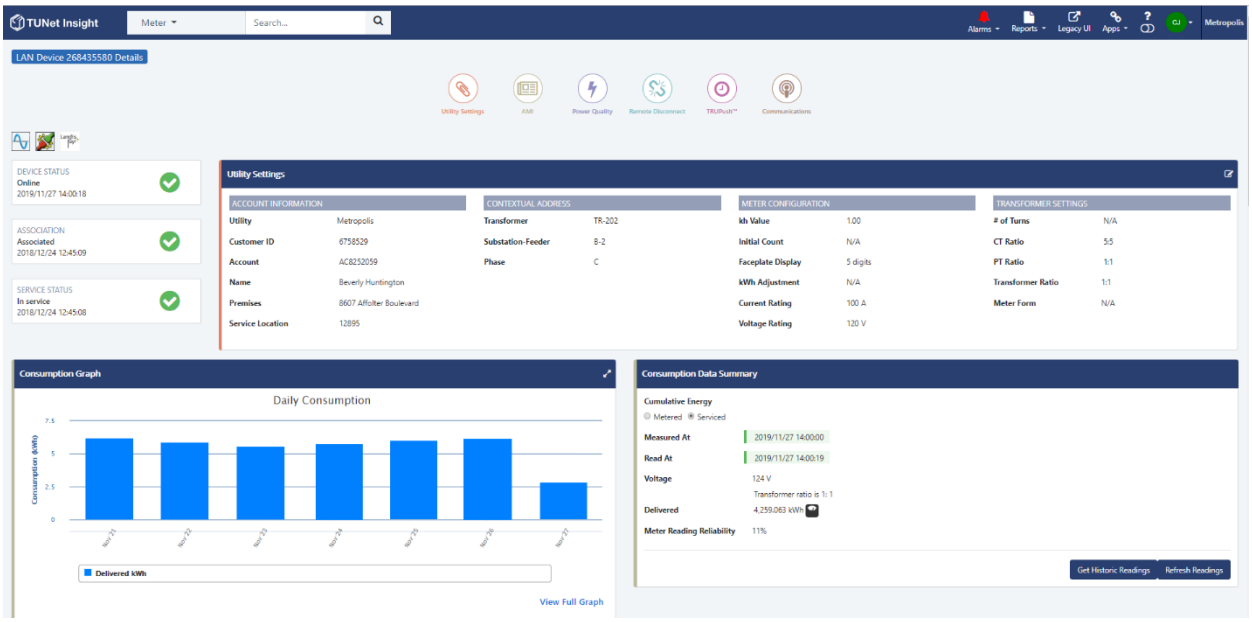
- Meter Read Interval
- Voltage Sag and Swell thresholds
- Define Contextual Address fields
- Outage and Restoration notification thresholds and alarms
- Demand Reset configuration

Meter Search Results

The meter search results page provides the ability to quickly search for information on specific meters based on certain criteria or groups based on contextual addressing (groupings). Access to detailed information is available from:

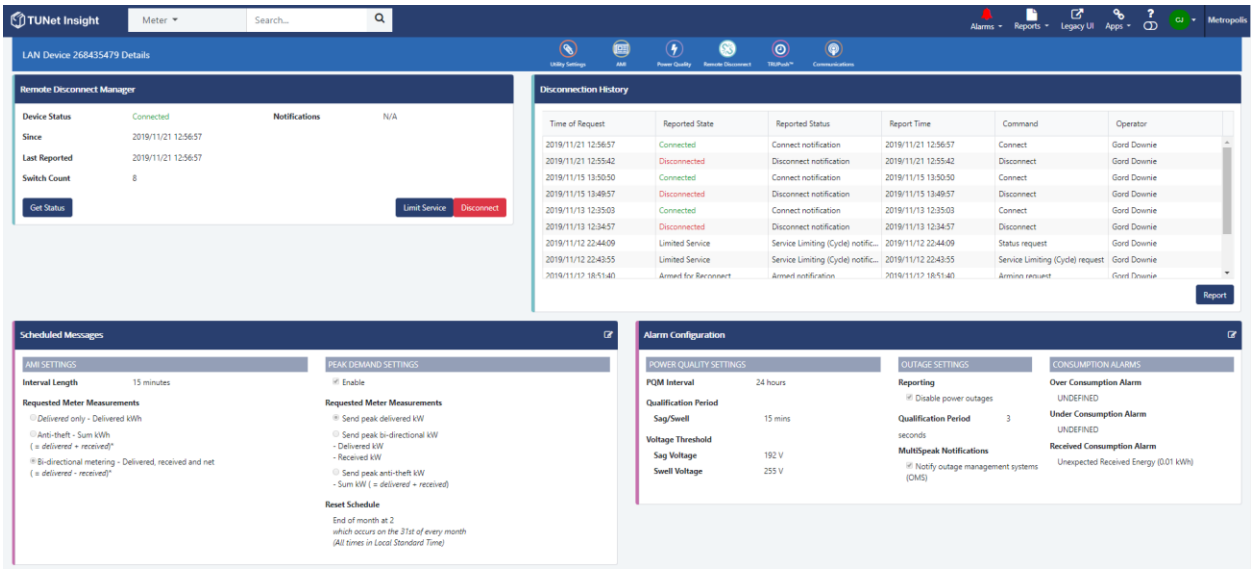
- Residential meter screen
- Commercial meter screen
- Net Meter screen
- PQM reports
- Interval consumption reports
- Meter group (multiple meters) data page
- Meter group (multiple meters) consumption report and PQM report

Residential Meter Data Screen



All device detail pages have the most important information at the top, and quick links to different sections allow users to see the information they are interested in quickly. The individual cards are shown or hidden depending on the User's privileges to give a constant UI experience for all users.

Remote Disconnect/ Reconnect



The Remote Disconnect is initiated from this screen and provides the ability to:

- Verify connectivity to the meter (ping)
- View switch status
- Disconnect and reconnect meters remotely
- Given appropriate credentials, this page enables the User to access an account for connect or disconnect functionality quickly. The screen provides a double-click process to allow the User to confirm the desired action and avoid accidental disconnect/reconnect. Upon execution of a disconnect or reconnect command, the system provides automatic verification of success. This tab also provides the ability to generate reports on individual or collective operations over time. The reconnect function queries the meter for load-side voltage before executing the command and notifies the User if voltage is present.

Residential Graphed Consumption Screen

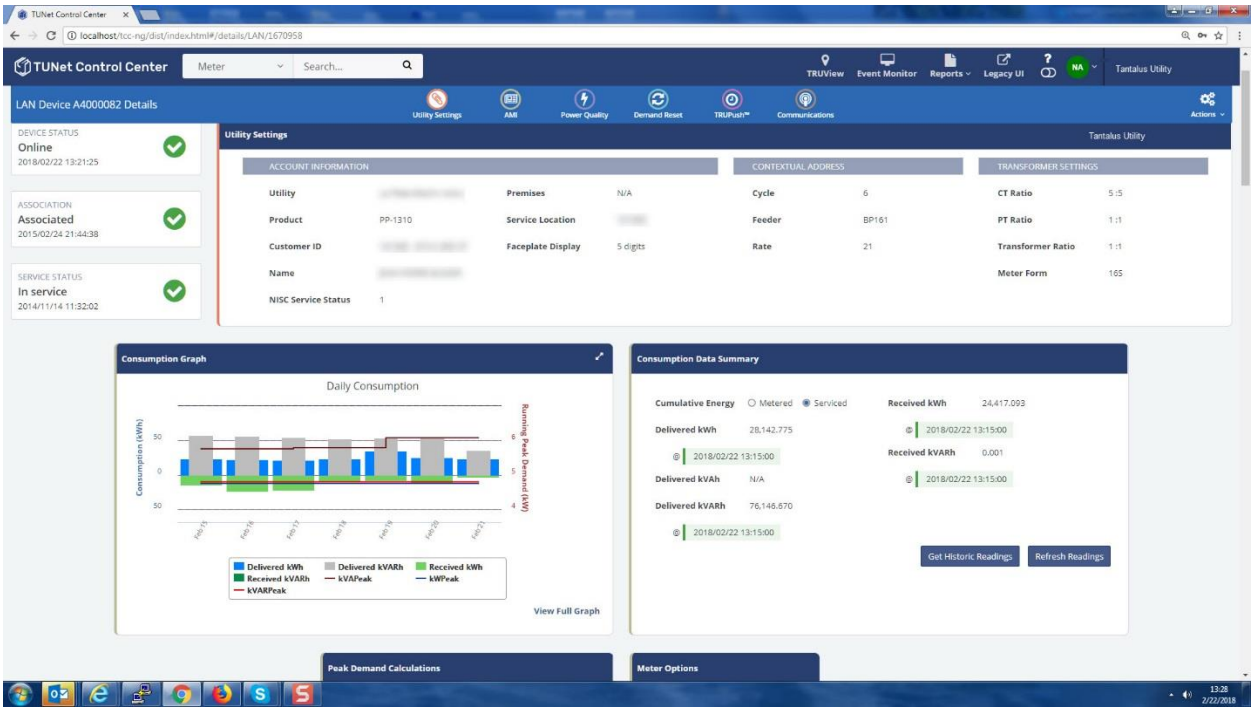
By hovering the cursor over any interval, more detailed data is provided. The detailed information associated with consumption at 7 PM is shown above. Additionally, the consumption graphs can display summary information of interval data. For example, 15-minute interval data can be displayed as a sum per hour, per day, per month. The combined interval consumption can be used to evaluate the consumption history associated with the account.

From the above pages, detailed reports and exports can be generated for:

- Power quality analysis
- Interval data reports
- Share image exports for customer distribution or interval review
- Account status and on-demand reading of measured values

TRUEdge meters support calculating TOU and Time Of Use in the meter. The TOU consumption can be displayed in a consumption graph in Insight or exported via a billing export.

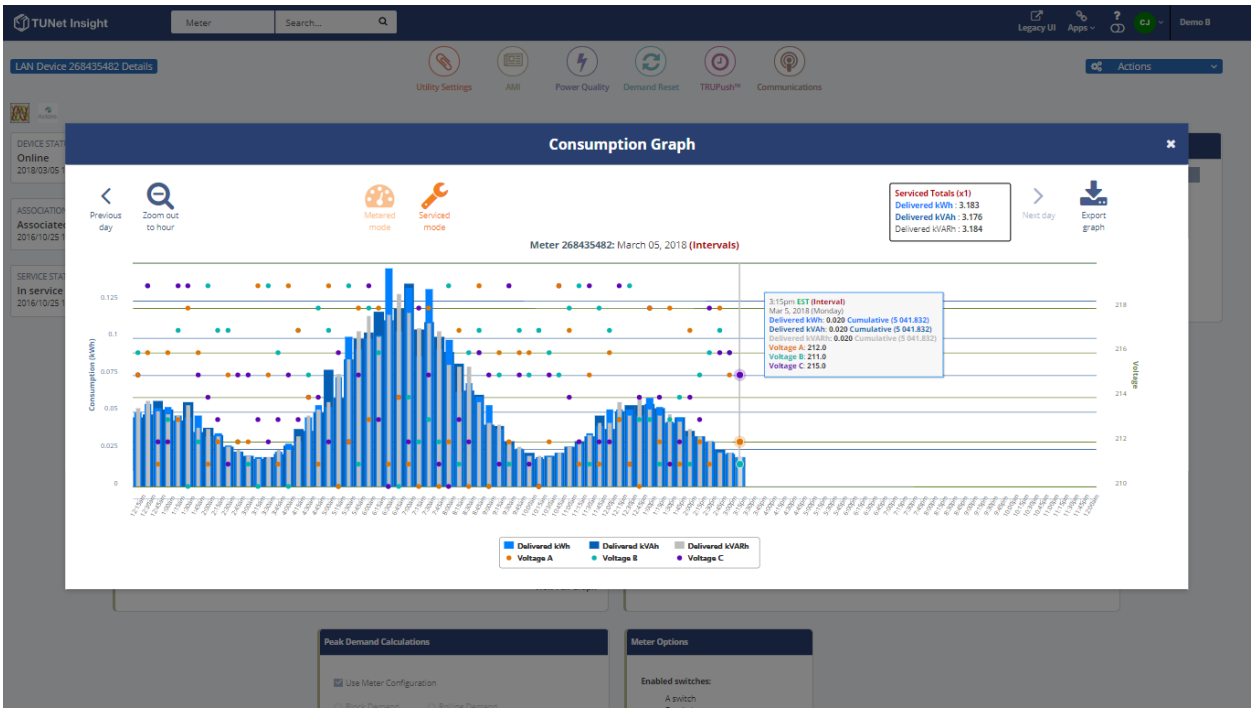
Commercial Meter Screen



The On-Request Reads are initiated and viewed from this screen.

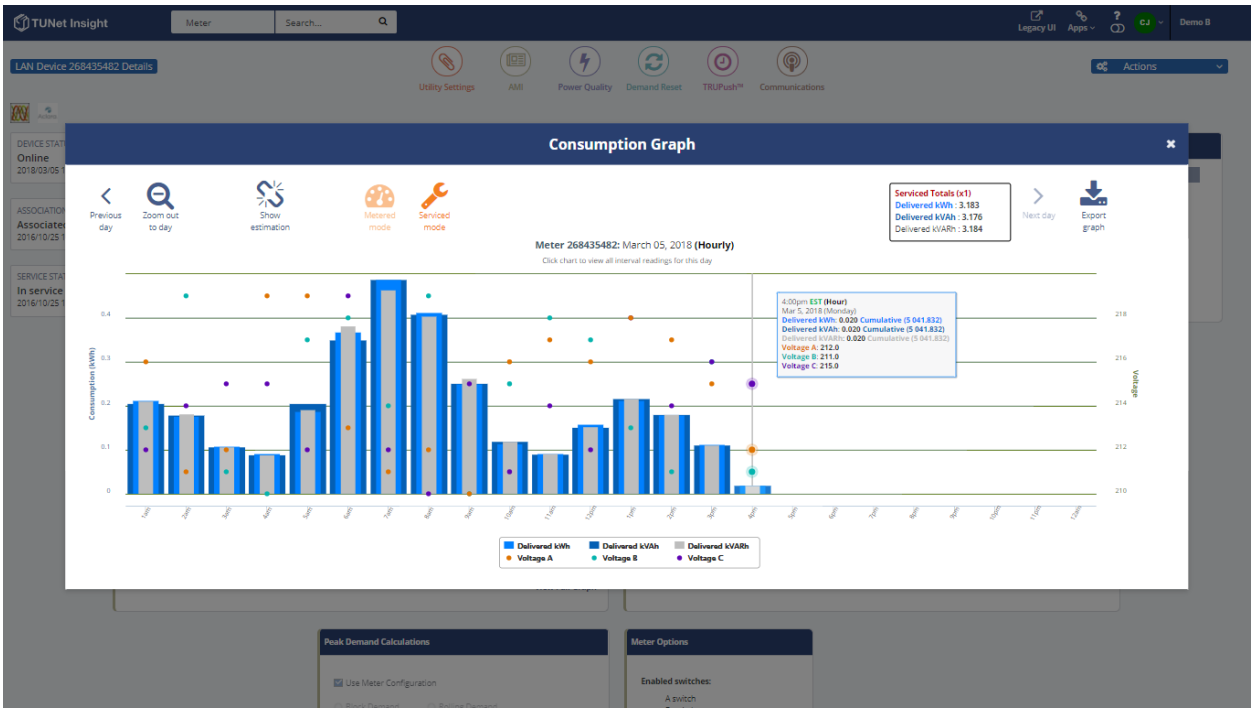
- For Users to perform On-request reads in support of move-in/move-out
- For Users to evaluate conditions in the field in real-time. Measurements include voltage, per-phase amps, KW, kVAh, kVARh, and PQM reports. (May require upgraded meters)

Commercial Meter Data Graph



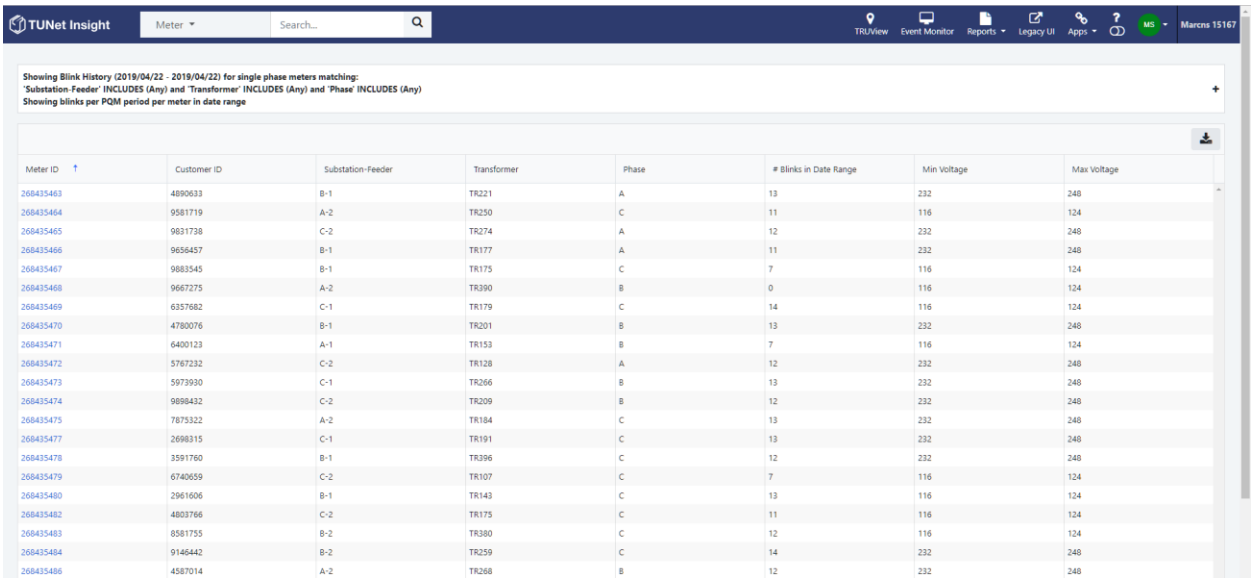
The above graph displays 5-minute interval data.

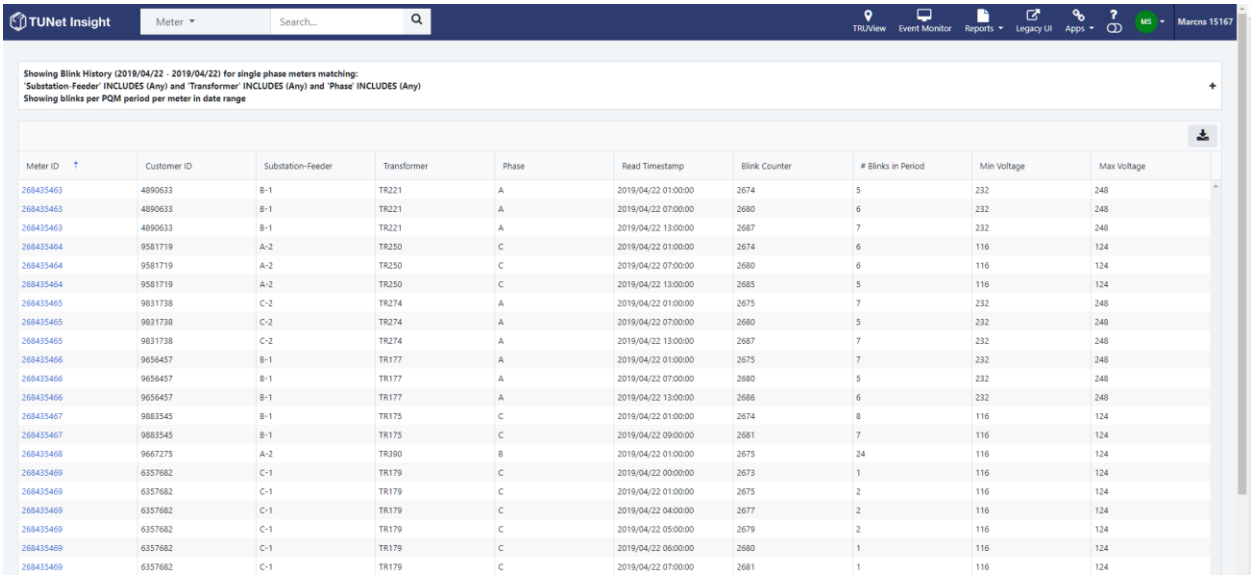
The graph below displays the same account and period with 5-minute interval data per hour.



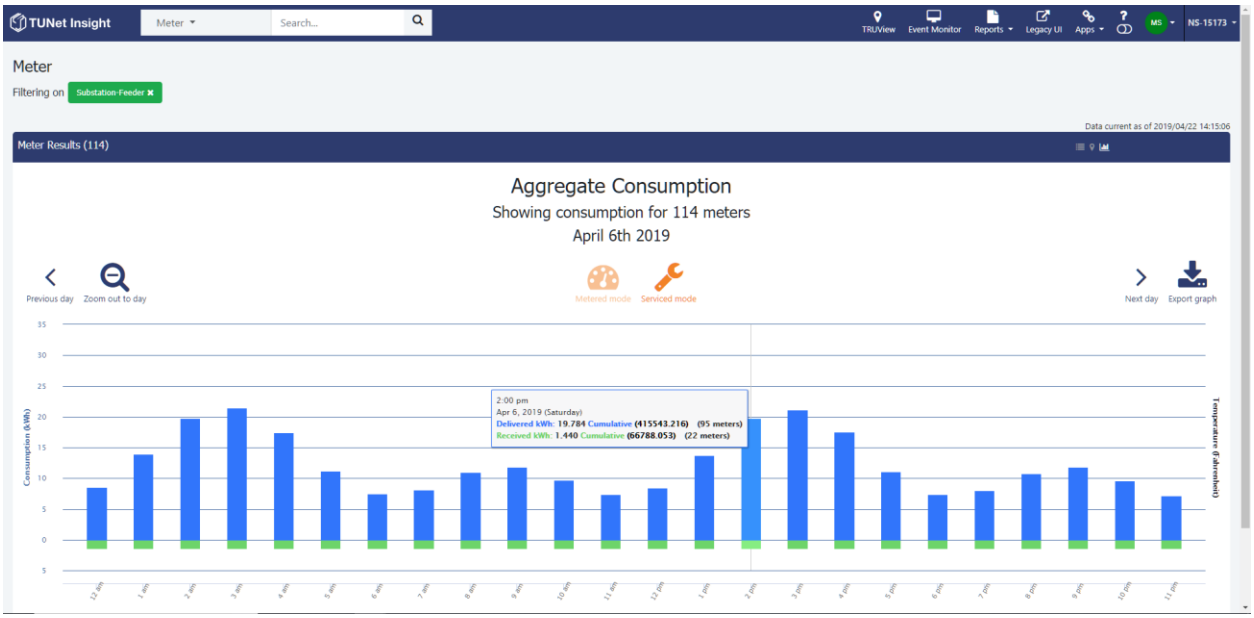
PQM Report Screen

The PQM Report can be exported in various formats to facilitate analysis.





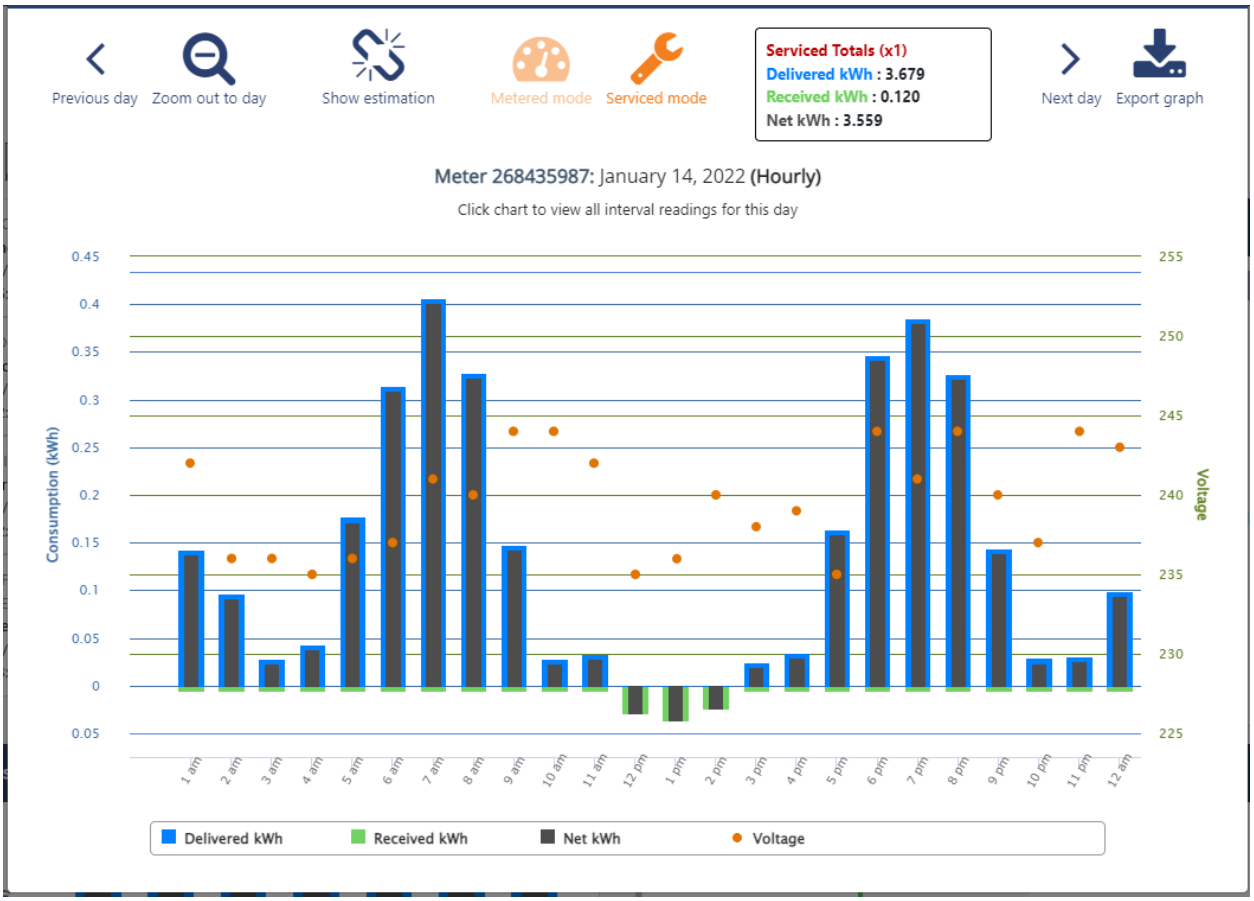
Consumption Readings Graph



The graph above shows the combined data for 114-meter accounts based on meter search results. This can be used to explore consumption anomalies by time and within a group of meters or to find the overage load of groups of meters.

This allows the utility to look at loading meter metrics by accounts on distribution assets such as Substations, feeders, control zones, transformers, governmental accounts (school boards), etc.

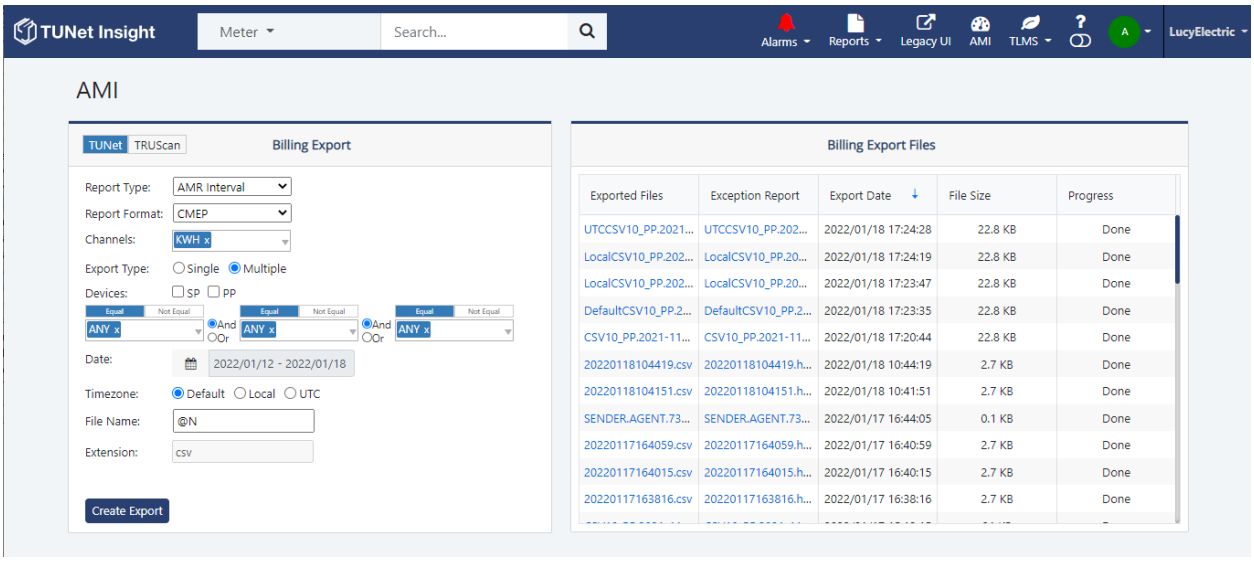
Net Metering



With the growing number of commercial and residential customers electing to generate energy via co-generation capabilities and renewables (wind and solar), the market requires that utilities support net-metering to facilitate managing and forecasting available supply from distributed generation assets as well as support net-metering tariffs.

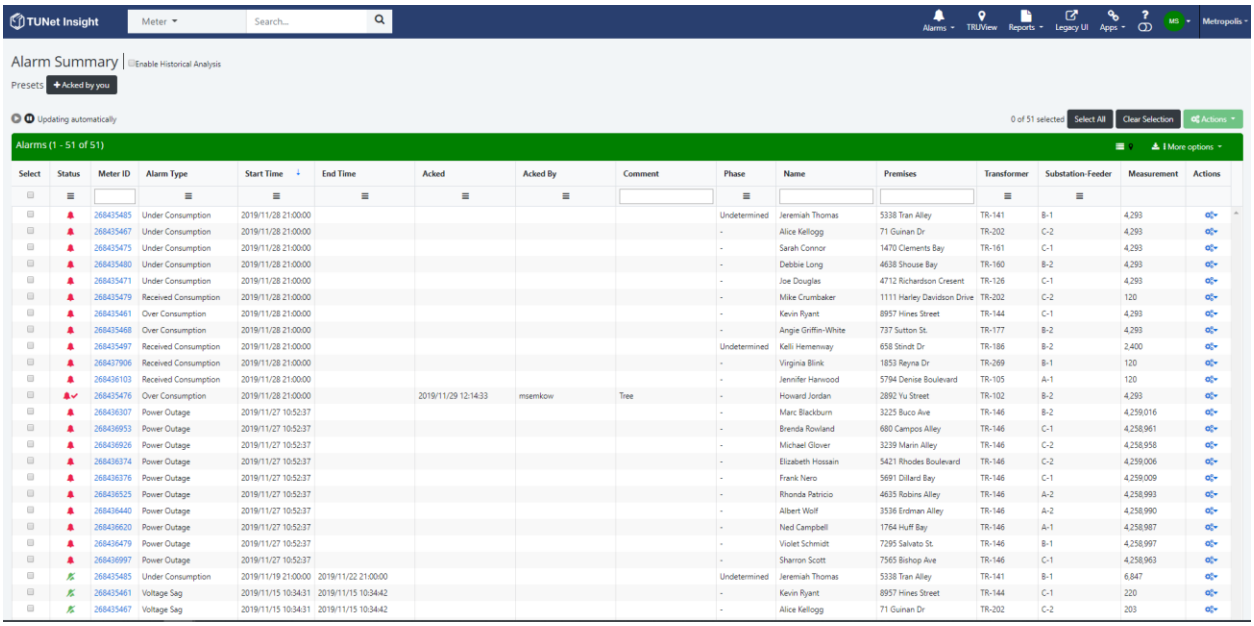
The figure above exemplifies how Insight captures delivered, received, and net-metering data and makes it available to third-party systems.

Billing Export



Most billing exports are set to automatically export daily, and the files are sent to the CIS or MDM system. Insight supports ad-hoc billing exports to verify billing or analyze a .csv file.

Alarms



Select	Status	Meter ID	Alarm Type	Start Time	End Time	Acked	Acked By	Comment	Phase	Name	Premises	Transformer	Substation-Feeder	Measurement	Actions
		268435485	Under Consumption	2019/11/28 21:00:00					Undetermined	Jeremiah Thomas	5338 Tran Alley	TR-141	B-1	4,293	
		268435467	Under Consumption	2019/11/28 21:00:00					-	Alice Kellogg	71 Guinan Dr	TR-202	C-2	4,293	
		268435475	Under Consumption	2019/11/28 21:00:00					-	Sarah Connor	1470 Clements Bay	TR-161	C-1	4,293	
		268435480	Under Consumption	2019/11/28 21:00:00					-	Debbie Long	4638 Shouse Bay	TR-160	B-2	4,293	
		268435471	Under Consumption	2019/11/28 21:00:00					-	Joe Douglas	4712 Richardson Cresent	TR-126	C-1	4,293	
		268435479	Received Consumption	2019/11/28 21:00:00					-	Mike Crumbaker	1111 Harley Davidson Drive	TR-202	C-2	120	
		268435461	Over Consumption	2019/11/28 21:00:00					-	Kevin Ryant	8957 Hines Street	TR-144	C-1	4,293	
		268435468	Over Consumption	2019/11/28 21:00:00					-	Angie Griffin-White	737 Sutton St.	TR-177	B-2	4,293	
		268435497	Received Consumption	2019/11/28 21:00:00					Undetermined	Kelli Hemenway	658 Stindt Dr	TR-186	B-2	2,400	
		268437906	Received Consumption	2019/11/28 21:00:00					-	Virginia Blink	1853 Reyna Dr	TR-269	B-1	120	
		268436103	Received Consumption	2019/11/28 21:00:00					-	Jennifer Harwood	5794 Denise Boulevard	TR-105	A-1	120	
		268435476	Over Consumption	2019/11/28 21:00:00		2019/11/29 12:14:33	msemkow	Tree	-	Howard Jordan	2892 Yu Street	TR-102	B-2	4,293	
		268436307	Power Outage	2019/11/27 10:52:37					-	Marc Blackburn	3225 Buco Ave	TR-146	B-2	4,259,016	
		268436953	Power Outage	2019/11/27 10:52:37					-	Brenda Rowland	680 Campos Alley	TR-146	C-1	4,258,961	
		268436926	Power Outage	2019/11/27 10:52:37					-	Michael Glover	3239 Marin Alley	TR-146	C-2	4,258,958	
		268436374	Power Outage	2019/11/27 10:52:37					-	Elizabeth Hossain	5421 Rhodes Boulevard	TR-146	C-2	4,259,006	
		268436376	Power Outage	2019/11/27 10:52:37					-	Frank Nero	5691 Dillard Bay	TR-146	C-1	4,259,009	
		268436525	Power Outage	2019/11/27 10:52:37					-	Rhonda Patricio	4635 Robins Alley	TR-146	A-2	4,258,993	
		268436440	Power Outage	2019/11/27 10:52:37					-	Albert Wolf	3536 Erdman Alley	TR-146	A-2	4,258,990	
		268436620	Power Outage	2019/11/27 10:52:37					-	Ned Campbell	1764 Huff Bay	TR-146	A-1	4,258,987	
		268436479	Power Outage	2019/11/27 10:52:37					-	Violet Schmidt	7295 Salvato St.	TR-146	B-1	4,258,997	
		268436997	Power Outage	2019/11/27 10:52:37					-	Sharron Scott	7565 Bishop Ave	TR-146	C-1	4,258,963	
		268435485	Under Consumption	2019/11/19 21:00:00	2019/11/22 21:00:00				Undetermined	Jeremiah Thomas	5338 Tran Alley	TR-141	B-1	6,847	
		268435461	Voltage Sag	2019/11/15 10:34:31	2019/11/15 10:34:42				-	Kevin Ryant	8957 Hines Street	TR-144	C-1	220	
		268435467	Voltage Sag	2019/11/15 10:34:31	2019/11/15 10:34:42				-	Alice Kellogg	71 Guinan Dr	TR-202	C-2	203	

An alarm summary display will show the alarms and their state. The alarm summary displays when the alarm started and ended and who acknowledged it. In addition, a comment can be included to add more information about the alarm.

All 14 months of history can be searched and downloaded for historical analysis.

Tantalus

Eldridge Municipal Utilities
Van Wert Tantalus Proposal - Overlay Deployment - Reuse Most Electric All Water

TRUConnect Equipment and Services	Full Deployment		
TRUConnect WAN/LAN Equipment	**Quantity**	**Unit Price**	**Ext. Price**
RT-4250 TRUSense Cellular Gateway	16	$ 668.00	$ 10,688.00
VC-931 Versa Collector - Pole Mounted (Water Only Area)	1	$ 2,307.72	$ 2,307.72
VC-820 Cellular Modem - Inside VC (Water Only Area)	1	$ 1,413.08	$ 1,413.08
TR-1901 Repeater - Pole Mounted (Water Only Area)	15	$ 349.04	$ 5,235.60
DT-116 Centron Reset Key	1	$ 39.68	$ 39.68
DT-410-BUN Programming Kit	1	$ 4,000.00	$ 4,000.00
TRUConnect Infrastructure Sub Total			**$ 23,684.08**
TRUEdge Endpoint			
TC-1216 Tantalus Single Phase Module - Itron	950	$ 84.54	$ 80,313.00
TC-1220RD Tantalus Single Phase Remote Disconnect Module - Itron	120	$ 90.58	$ 10,869.60
PP-1320 Tantalus Poly Phase Module - Itron CP3	0	$ 241.55	$ -
Endpoint and Meter Sub Total			**$ 91,182.60**
TRUConnect Server & Software			
SV-4001 TRUConnect AMI Hosting - **Year 1 Only**	1	$ 4,800.00	$ 4,800.00
TCC-2001 TRUConnect Insight Head End Software	1	$ 42,550.00	$ 42,550.00
SV-8002 TRUConnect Cellular Data Plan (200MB) - **Year 1 Only**	17	$ 108.00	$ 1,836.00
TXG-SW01 TRUSense Head End Software License - per Endpoint	16	$ 60.00	$ 960.00
NSE-201 TRUConnect Software License - per Endpoint	1,070	$ 3.90	$ 4,173.00
PPA-100 Polyphase Software - per Endpoint (100 endpoint license)	-	$ 1,300.00	$ -
NSE-400 TRUScan - Itron Electric ERT Reading - One Time	1,882	$ 2.00	$ 3,764.00
NSE-420 TRUScan - Itron Water ERT Reading - One Time	2,982	$ 2.00	$ 5,964.00
NSE-430 TRUScan - Neptune Water/Gas R900 Reading - One Time	-	$ 2.00	$ -
NSE-410 TRUScan - Itron Gas ERT Reading - One Time	-	$ 2.00	$ -
TAL-601-1 TRUConnect Application License - Consumption Alarms	1	$ 3,750.00	$ 3,750.00
TAL-600-1 TRUConnect Application License - Database Extraction Tool	-	$ -	$ -
TAL-530-X TRUConnect Application License - Residential Peak Demand	-	$ -	$ -
TAL-520-X TRUConnect Application License - Service Limiting	-	$ -	$ -
NSI-306 TRUConnect TRUView GIS Admin License - ESRI Integration	-	$ -	$ -
NSI-307 TRUConnect Application License - LDAP Active Directory	-	$ -	$ -
Server and Software Total			**$ 67,797.00**
TRUConnect System Services			
SV-1000 Deployment Services	1	$ 79,530.00	$ 79,530.00
-Project engineering, training, project mgt, system design, deployment prep			
-Datbase configuration, set up, and commissioning.			
-Billing integration.			
-Travel and Travel Expenses included.			
TRUConnect System Services Sub Total			**$ 79,530.00**
TRUConnect Equipment and Services - Grand Total			**$ 262,193.68**

Itron Electric Meters	Quantity	Unit Price	Ext. Price
Itron C2SXD 1S CL200 240V w/ Disconnect w/ Tantalus Installed	0	$0.00	$0.00
Itron C2SXD 2S CL200 240V w/ Disconnect w/ Tantalus Installed	120	$110.00	$13,200.00
Itron C2SXD 12S CL200 240V w/ Disconnect w/ Tantalus Installed	0	$0.00	$0.00
Itron C1SX 2S CL200 240V w/ Tantalus Installed	950	$50.00	$47,500.00
Itron C1SX 2S CL320 240V w/ Tantalus Installed	0	$0.00	$0.00
Itron C1SX 3S w/ Tantalus Installed	0	$0.00	$0.00
Itron C1SX 4S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 5S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 6S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 16S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 8/9S w/ Tantalus Installed	0	$0.00	$0.00
Itron Electric Meter - Grand Total			**$60,700.00**

Turnkey Project - Electric Meter Installation				
Turnkey Deployment Expenses - Software Set Up and Mobilization	0	$ -	$	-
Install - Electric Meters - Single Phase - 240V and Below	0	$ -	$	-
Install - Electric Meters - Poly Phase - Self Contained, Transformer Rated, & Single-Phase Transformer Rated	0	$ -	$	-
Turnkey Deployment Services - Electric Meters	0	$ -	$	-
OPTIONAL - Transformer Rated Meter Site Analysis with CT & Wiring Check (added to installation price)	0	$ -	$	-
Electric Meter Install - Grand Total			**$**	**-**

TRUConnect Project Grand Total	**$**	**322,893.68**

TRUConnect System Annual Fees - Starting Year 2 of Deployment				
SV-4001 TRUConnect Annual AMI Hosting	1	$ 4,800.00	$	4,800.00
SV-8002 TRUConnect Cellular Data Plan (200MB)	17	$ 108.00	$	1,836.00
TRUConnect Annual Maintenance	1	$ 13,023.60	$	13,023.60
SL-2001 TRUConnect Technical Support - Standard	1	$ 6,950.00	$	6,950.00
Additional products / features added to the system may increase support costs. Premium Level Support is available for an additional fee.				
GRAND TOTAL - TRUConnect System Annual Fees - Year 2 and Beyond			**$**	**26,609.60**

OPTIONS:

OPTION - Utility Hawk Customer Portal				
Customer Portal Set Up Fee - One Time	0	$ -	$	-
SV-1000 Tantalus Services - One Time	0	$ -	$	-
Customer Portal Annual Fee - **Add to Annual Fees Above**	0	$ -	$	-
MDM Set Up Fee - One Time	0	$ -	$	-
SV-1000 Tantalus Services - One Time	0	$ -	$	-
MDM Annual Fee - **Add to Annual Fees Above**	0	$ -	$	-
OPTION - Grand Total - Utility Hawk Customer Portal			**$**	**-**

OPTION - TRUFlex DER + Load Management				
LC-2325B-C1 Tantalus Load Control Switch - 1HP, 2LP Relay	0	$ -	$	-
LML-100 Load Champ License for Disconnect Meter as Load Mgt Device	0	$ -	$	-
LMS-SSS Load Management System Set Up Fee - **1 Time**	0	$ -	$	-
LMS-SSB-L TRUFlex Load Management Annual Hosting, Support & Maint - 1st 1000 Devices deployed.	0	$ -	$	-
OPTION GRAND TOTAL - DER + Load Management			**$**	**-**

OPTION - TRUGrid Analytics				
GRA-SSS TGRA SAAS Standard Set Up	0	$ 5,000.00	$	-
GRA-SSB TGRA SAAS Standard Annual Subscription - **Add to Annual Fees Above**	0	$ 9,000.00	$	-
Includes 1st 10,000 electric meters, 2 users, 14 months of history				
GRA-SSD TGRA SAAS Standard Annual Subscription / additional elec meter	0	$ 0.75	$	-
Add to Annual Fees Above				
OPTION GRAND TOTAL - TRUGrid Analytics			**$**	**-**

OPTION - TRUGrid Transformer				
Transformer Analytics - Set Up Fee	0	$ 5,000.00	$	-
GTA-SSB-X Transformer Analytics - **Annual Fee**	0	$ -	$	-
Includes Support, Maintenance, and Hosting				
Add to Annual Fees Above if Selected				
OPTION GRAND TOTAL - TRUGrid Transformer			**$**	**-**

Pricing Notes & Assumptions:

· The pricing provided is limited to the equipment, software and services as proposed in this offer. Changes to quantities, deal structure or third-party partners that are part of this proposal may change the prices contained in this offer.

· Prices quoted for Tantalus' Network Equipment and Services may contain allowances, discounts and/or promotional pricing which are available for a period of 90 days from the date of bid opening. Price does not include shipping. All products are shipped FOB Shipping Point.

· Final performance criteria and any associated guarantees will be included in the final contract and are contingent upon installation of equipment and deployment per the final AMI network design and in accordance with Tantalus' specifications. Regardless of the party performing the installation, it is the responsibility of the Utility to provide utility specific information that may have an impact on the final design and/or performance criteria

· The standard warranty terms and conditions set forth in Tantalus' Network Systems Agreement (NSA) apply unless otherwise expressly agreed to by Tantalus in the final contract.

· Acceptance terms shall be discussed, mutually agreed to and set forth in the final contract, including without limitation those terms associated with acceptance of delivery, transfer of title, invoicing, etc.

· Final commitments shall be exclusive of failures resulting from the acts, omissions or performance of systems, services or networks provided by third parties or not otherwise within the control of Tantalus; and contingent upon the Customer's taking commercially reasonable actions in connection with maintaining the system, including, without limitation, entering into and complying with the terms of End User License Agreement and Technical

· Meters are Third-Party Products. Unless otherwise specifically set forth in writing (and subject to applicable pass-through terms and conditions), Tantalus does not provide a guaranty or warranty of any type or manner with respect to Third-party Products (as defined in the NSA) and disclaims all responsibility and liability for these items. Associated price validity terms set forth herein have been provided by the third-party manufacturer, in

· Pricing includes all of work, if any component is split, Tantalus reserves the right to reprice. Additional or incremental functionalities are subject to additional fees.

· Tantalus service time will be billed at actual. If additional days are necessary, Customer wil be billed at Tantalus' then-current daily rate.

· A minimum lead time of [TBD] days is required on all Purchase Orders.

· Notwithstanding anything to the contrary in the Customer's RFP or Tantalus' response thereto, Tantalus' Response, including the pricing provided, is based upon its Network Systems Agreement (as attached) and the absence of a specific response or annotation by Tantalus to any of the specifications, the Customer's requirements or terms and conditions in the RFP does not otherwise limit Tantalus' ability and right to negotiate such

· Integration to existing vendor supported interfaces are included in the Deployment Services – Custom services, including custom integration(s) with third party applications that are not existing vendor supported interfaces, are subject to additional fees and agreement between Tantalus, Customer and any applicable third party.

· Annual System Support is available in both Premium and Standard levels. Premium level support is subject to an additional cost of $15,000.00 at the time of such election.

· Optional Equipment/Services may be subject to additional terms and conditions, including without limitation those related to use of the software.

· If Tantalus is a Prime Contractor, a markup has been applied to meters and installation services. The customer would realize cost savings by contracting directly with third party providers for installation and meter purchases.

· Tantalus does not guarantee pricing of Third-Party Products, which are quoted pursuant to and subject to the respective third-party manufacturer's terms and conditions (including warranty). Notwithstanding anything to the contrary and unless otherwise expressly and mutually agreed to in writing (including applicable pass-through terms and conditions) between the Customer, Tantalus and the third-party manufacturer, the third-party terms

· If applicable, water meters encoder registers, connectors, RF endpoint and thru the lid antenna pricing is estimated and not included in the total cost.

· Water meter pricing does not include expansion wheels. Pricing TBD if required.

· If elected, TRUGrid™ Reliability and TRUGrid™ Transformer and are subect to terms and conditions of Tantalus' Master Software Subscription Agreement.

Tantalus

Eldridge Municipal Utilities
Van Wert Tantalus Proposal - Full Deployment Electric - Reuse Water

TRUConnect Equipment and Services	Full Deployment		
TRUConnect WAN/LAN Equipment	**Quantity**	**Unit Price**	**Ext. Price**
RT-4250 TRUSense Cellular Gateway	26	$ 668.00	$ 17,368.00
VC-931 Versa Collector - Pole Mounted (Water Only Area)	1	$ 2,307.72	$ 2,307.72
VC-820 Cellular Modem - Inside VC (Water Only Area)	1	$ 1,413.08	$ 1,413.08
TR-1901 Repeater - Pole Mounted (Water Only Area)	15	$ 349.04	$ 5,235.60
DT-116 Centron Reset Key	1	$ 39.68	$ 39.68
DT-410-BUN Programming Kit	1	$ 4,000.00	$ 4,000.00
TRUConnect Infrastructure Sub Total			**$ 30,364.08**
TRUEdge Endpoint			
TC-1216 Tantalus Single Phase Module - Itron	2542	$ 84.54	$ 214,900.68
TC-1220RD Tantalus Single Phase Remote Disconnect Module - Itron	120	$ 90.58	$ 10,869.60
PP-1320 Tantalus Poly Phase Module - Itron CP3	290	$ 241.55	$ 70,049.50
Endpoint and Meter Sub Total			**$ 295,819.78**
TRUConnect Server & Software			
SV-4001 TRUConnect AMI Hosting - **Year 1 Only**	1	$ 4,800.00	$ 4,800.00
TCC-2001 TRUConnect Insight Head End Software	1	$ 42,550.00	$ 42,550.00
SV-8002 TRUConnect Cellular Data Plan (200MB) - **Year 1 Only**	27	$ 108.00	$ 2,916.00
TXG-SW01 TRUSense Head End Software License - per Endpoint	26	$ 60.00	$ 1,560.00
NSE-201 TRUConnect Software License - per Endpoint	2,952	$ 3.90	$ 11,512.80
PPA-100 Polyphase Software - per Endpoint (100 endpoint license)	3	$ 1,300.00	$ 3,900.00
NSE-400 TRUScan - Itron Electric ERT Reading - One Time	-	$ 2.00	$ -
NSE-420 TRUScan - Itron Water ERT Reading - One Time	2,982	$ 2.00	$ 5,964.00
NSE-430 TRUScan - Neptune Water/Gas R900 Reading - One Time	-	$ 2.00	$ -
NSE-410 TRUScan - Itron Gas ERT Reading - One Time	-	$ 2.00	$ -
TAL-601-1 TRUConnect Application License - Consumption Alarms	1	$ 3,750.00	$ 3,750.00
TAL-600-1 TRUConnect Application License - Database Extraction Tool	-	$ -	$ -
TAL-530-X TRUConnect Application License - Residential Peak Demand	-	$ -	$ -
TAL-520-X TRUConnect Application License - Service Limiting	-	$ -	$ -
NSI-306 TRUConnect TRUView GIS Admin License - ESRI Integration	-	$ -	$ -
NSI-307 TRUConnect Application License - LDAP Active Directory	-	$ -	$ -
Server and Software Total			**$ 76,952.80**
TRUConnect System Services			
SV-1000 Deployment Services -Project engineering, training, project mgt, system design, deployment prep -Datbase configuration, set up, and commissioning. -Billing integration. -Travel and Travel Expenses included.	1	$ 79,530.00	$ 79,530.00
TRUConnect System Services Sub Total			**$ 79,530.00**
TRUConnect Equipment and Services - Grand Total			**$ 482,666.66**

Itron Electric Meters	Quantity	Unit Price	Ext. Price
Itron C2SXD 1S CL200 240V w/ Disconnect w/ Tantalus Installed	0	$0.00	$0.00
Itron C2SXD 2S CL200 240V w/ Disconnect w/ Tantalus Installed	120	$110.00	$13,200.00
Itron C2SXD 12S CL200 240V w/ Disconnect w/ Tantalus Installed	0	$0.00	$0.00
Itron C1SX 2S CL200 240V w/ Tantalus Installed	2542	$50.00	$127,100.00
Itron C1SX 2S CL320 240V w/ Tantalus Installed	0	$0.00	$0.00
Itron C1SX 3S w/ Tantalus Installed	0	$0.00	$0.00
Itron C1SX 4S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 5S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 6S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 16S w/ Tantalus Installed	0	$0.00	$0.00
Itron Centron Poly 3 - 8/9S w/ Tantalus Installed	290	$300.00	$87,000.00
Itron Electric Meter - Grand Total			**$227,300.00**

Turnkey Project - Electric Meter Installation				
Turnkey Deployment Expenses - Software Set Up and Mobilization	0	$ -	$	-
Install - Electric Meters - Single Phase - 240V and Below	0	$ -	$	-
Install - Electric Meters - Poly Phase - Self Contained, Transformer Rated, & Single-Phase Transformer Rated	0	$ -	$	-
Turnkey Deployment Services - Electric Meters	0	$ -	$	-
OPTIONAL - Transformer Rated Meter Site Analysis with CT & Wiring Check (added to installation price)	0	$ -	$	-
Electric Meter Install - Grand Total			**$**	**-**

TRUConnect Project Grand Total	**$**	**709,966.66**

TRUConnect System Annual Fees - Starting Year 2 of Deployment				
SV-4001 TRUConnect Annual AMI Hosting	1	$ 4,800.00	$	4,800.00
SV-8002 TRUConnect Cellular Data Plan (200MB)	27	$ 108.00	$	2,916.00
TRUConnect Annual Maintenance	1	$ 11,673.50	$	11,673.50
SL-2001 TRUConnect Technical Support - Standard	1	$ 6,950.00	$	6,950.00
Additional products / features added to the system may increase support costs. Premium Level Support is available for an additional fee.				
GRAND TOTAL - TRUConnect System Annual Fees - Year 2 and Beyond			**$**	**26,339.50**

OPTIONS:

OPTION - Utility Hawk Customer Portal				
Customer Portal Set Up Fee - One Time	0	$ -	$	-
SV-1000 Tantalus Services - One Time	0	$ -	$	-
Customer Portal Annual Fee - **Add to Annual Fees Above**	0	$ -	$	-
MDM Set Up Fee - One Time	0	$ -	$	-
SV-1000 Tantalus Services - One Time	0	$ -	$	-
MDM Annual Fee - **Add to Annual Fees Above**	0	$ -	$	-
OPTION - Grand Total - Utility Hawk Customer Portal			**$**	**-**

OPTION - TRUFlex DER + Load Management				
LC-2325B-C1 Tantalus Load Control Switch - 1HP, 2LP Relay	0	$ -	$	-
LML-100 Load Champ License for Disconnect Meter as Load Mgt Device	0	$ -	$	-
LMS-SSS Load Management System Set Up Fee - **1 Time**	0	$ -	$	-
LMS-SSB-L TRUFlex Load Management Annual Hosting, Support & Maint - 1st 1000 Devices deployed.	0	$ -	$	-
OPTION GRAND TOTAL - DER + Load Management			**$**	**-**

OPTION - TRUGrid Analytics				
GRA-SSS TGRA SAAS Standard Set Up	0	$ 5,000.00	$	-
GRA-SSB TGRA SAAS Standard Annual Subscription - **Add to Annual Fees Above**	0	$ 9,000.00	$	-
Includes 1st 10,000 electric meters, 2 users, 14 months of history				
GRA-SSD TGRA SAAS Standard Annual Subscription / additional elec meter	0	$ 0.75	$	-
Add to Annual Fees Above				
OPTION GRAND TOTAL - TRUGrid Analytics			**$**	**-**

OPTION - TRUGrid Transformer				
Transformer Analytics - Set Up Fee	0	$ 5,000.00	$	-
GTA-SSB-X Transformer Analytics - **Annual Fee**	0	$ -	$	-
Includes Support, Maintenance, and Hosting				
Add to Annual Fees Above if Selected				
OPTION GRAND TOTAL - TRUGrid Transformer			**$**	**-**

Pricing Notes & Assumptions:

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· Prices quoted for Tantalus' Network Equipment and Services may contain allowances, discounts and/or promotional pricing which are available for a period of 90 days from the date of bid opening. Price does not include shipping. All products are shipped FOB Shipping Point.

· Final performance criteria and any associated guarantees will be included in the final contract and are contingent upon installation of equipment and deployment per the final AMI network design and in accordance with Tantalus' specifications. Regardless of the party performing the installation, it is the responsibility of the Utility to provide utility specific information that may have an impact on the final design and/or performance criteria

· The standard warranty terms and conditions set forth in Tantalus' Network Systems Agreement (NSA) apply unless otherwise expressly agreed to by Tantalus in the final contract.

· Acceptance terms shall be discussed, mutually agreed to and set forth in the final contract, including without limitation those terms associated with acceptance of delivery, transfer of title, invoicing, etc.

· Final commitments shall be exclusive of failures resulting from the acts, omissions or performance of systems, services or networks provided by third parties or not otherwise within the control of Tantalus; and contingent upon the Customer's taking commercially reasonable actions in connection with maintaining the system, including, without limitation, entering into and complying with the terms of End User License Agreement and Technical

· Meters are Third-Party Products. Unless otherwise specifically set forth in writing (and subject to applicable pass-through terms and conditions), Tantalus does not provide a guaranty or warranty of any type or manner with respect to Third-party Products (as defined in the NSA) and disclaims all responsibility and liability for these items. Associated price validity terms set forth herein have been provided by the third-party manufacturer, in

· Pricing includes all of work, if any component is split, Tantalus reserves the right to reprice. Additional or incremental functionalities are subject to additional fees.

· Tantalus service time will be billed at actual. If additional days are necessary, Customer wil be billed at Tantalus' then-current daily rate.

· A minimum lead time of [TBD] days is required on all Purchase Orders.

· Notwithstanding anything to the contrary in the Customer's RFP or Tantalus' response thereto, Tantalus' Response, including the pricing provided, is based upon its Network Systems Agreement (as attached) and the absence of a specific response or annotation by Tantalus to any of the specifications, the Customer's requirements or terms and conditions in the RFP does not otherwise limit Tantalus' ability and right to negotiate such

· Integration to existing vendor supported interfaces are included in the Deployment Services – Custom services, including custom integration(s) with third party applications that are not existing vendor supported interfaces, are subject to additional fees and agreement between Tantalus, Customer and any applicable third party.

· Annual System Support is available in both Premium and Standard levels. Premium level support is subject to an additional cost of $15,000.00 at the time of such election.

· Optional Equipment/Services may be subject to additional terms and conditions, including without limitation those related to use of the software.

· If Tantalus is a Prime Contractor, a markup has been applied to meters and installation services. The customer would realize cost savings by contracting directly with third party providers for installation and meter purchases.

· Tantalus does not guarantee pricing of Third-Party Products, which are quoted pursuant to and subject to the respective third-party manufacturer's terms and conditions (including warranty). Notwithstanding anything to the contrary and unless otherwise expressly and mutually agreed to in writing (including applicable pass-through terms and conditions) between the Customer, Tantalus and the third-party manufacturer, the third-party terms

· If applicable, water meters encoder registers, connectors, RF endpoint and thru the lid antenna pricing is estimated and not included in the total cost.

· Water meter pricing does not include expansion wheels. Pricing TBD if required.

· If elected, TRUGrid™ Reliability and TRUGrid™ Transformer and are subect to terms and conditions of Tantalus' Master Software Subscription Agreement.

TRUConnect™ AMI

TRUConnect AMI is a multi-commodity, purpose-built industrial IoT network comprised of advanced smart meters and a wide range of intelligent connected devices to improve a utility's resiliency, reliability and efficiency in a secure and affordable manner.

Description

TRUConnect AMI delivers the necessary visibility and corresponding command and control of assets managed by utilities across the distribution grid – from the substation to distributed energy resources (DERs) located behind the meter – by harnessing the power of data.

By deploying TRUConnect AMI, utilities are empowered to coordinate their operations, control costs and enhance customer satisfaction while preparing for the adoption and integration of DERs.

TRUConnect AMI Solution components include:

TRUConnect Edge, an intelligent device integrated into meters manufactured by Itron, Landis+Gyr and Aclara with a powerful system-on-chip to support edge applications.

TRUConnect Network, a network of communications infrastructure devices that delivers unmatched reliability through a combination of "right-sized" field devices that includes:

The TRUSense Gateway™, a next-generation meter socket-based computing device

The VersaComms Gateway™ (VC), pole-mounted gateways that support multiple communications technologies (fiber, cellular, RF)

Insight, a common user interface designed by utilities to manage all aspects of an AMI deployment and Tantalus' suite of software applications and data analytics.

TRUConnect AMI offers a differentiated approach:

- Multi-commodity support through our TRUScan™ technology that is capable of reading and integrating data from a wide range of existing ERTs and MIUs to transform legacy one-way AMR systems into next-generation, robust AMI systems.
- Extending the life of existing assets by delivering reverse-compatibility through our system-on-chip to ensure utilities avoid the expense of stranded assets while future-proofing their investments.
- Flexibility in our networking capabilities that provides utilities the unique ability to migrate between communication technologies as advancements in those technologies are delivered and adopted.
- Unparalleled Data Management, through our TRUSync™ Grid Data Management system that offers utilities a truly interoperable solution that is capable of integrating data captured by any device, any system and any vendor into other mission-critical systems.

Benefits

- Supports the safety, prosperity and autonomy of the local communities served by IOUs, public power and electric cooperative utilities
- Helps these communities thrive by helping our utility customers power their economic prosperity, environmental sustainability and social progress
- Ensures these communities are empowered to shape the future of their smart grids as the adoption of Distributed Energy Resources such as solar panels, distributed storage and electric vehicles transform distribution grids
- Provides our customers with the flexibility and expandability they need to serve their communities today and well into the future

TRUConnect™ Edge

Intelligent endpoint and AMI communication module for the Itron CENTRON® C1S Meter

Description

TRUConnect Edge provides Itron CENTRON C1S meters with two-way wireless communications through the TRUConnect Network - the Tantalus utility network that connects the entire distribution system so a utility can gather better information and achieve a new level of operational, business and customer service control and efficiency.

TRUConnect Edge equipped meters provide utilities with accurate billing data as well as grid edge analytics such as peak demand tracking and voltage analytics.

For utilities looking to upgrade their Itron, Neptune or Badger AMR system to a fixed network, TRUConnect Edge equipped meters will actively collect and relay Itron ERT™ electricity, water and gas data; and Neptune R900® and Badger ORION® CE water and gas readings back to the head office, prolonging the useful life of those assets.

Features/ Benefits

- All consumption and voltage data is pushed to the head end every interval; this is vital for grid edge optimization
- TRUPush™ technology for instant, field-initiated event notifications such as outage alerts and load shed confirmations
- Two-way, 24/7 wireless communications to Itron C1S meters
- Highly granular interval data for flexible rate designs
- On-request reads allow customer service to respond to inquiries and to closely monitor endpoints remotely
- Over-the-air meter configuration and firmware updates for future enhancements
- Peak Demand
- Net Metering
- TRUScan reading capability for Itron ERT, Neptune R900 and Badger ORION CE MIUs

TRUConnect™ Edge

Product Specifications

Data Reported	
	• kWh • Net Metering (delivered, received, sum, net) • Voltage on configurable intervals (Min, Max, Instantaneous, 85 - 130V, 170 - 260V, ± 1%) • Optional 15/5 Rolling kW Demand • User defined interval data: 5, 10, 15, 30, 60 minutes • Blink Counts, Sag & Swells Alerts
Meter Forms Supported	
C1S (120V)	• 1S (Class 100) • 3S (Class 20) • 12S / 25S (Class 200)
C1S (240V)	• 1S (Class 200) • 2S (Class 200, 320) • 3S (Class 20) • 4S (Class 20)

Environmental	
	• Operating temperature range: -40° to +158° F (-40° to +70° C) • Humidity: 5% to 95% non-condensing
Approvals/ Standards	
	• ANSI C12.1 & C12.20 • FCC for CFR Title 47 Part 15b
Radio	
	• Frequency range: 902 - 928 MHz Unlicensed • TRUConnect Network TRUPush Technology • Vectored Channels: 64,000 • Transmit power: 1.0 watt
Ordering Information	
TC-1116	• TRUConnect Edge for Itron C1S 120V Meter
TC-1216	• TRUConnect Edge for Itron C1S 240V Meter

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Tantalus
HARNESS THE POWER OF DATA

Harness The Power of Data and Modernize Your Distribution Grid

Tantalus is a technology company dedicated to helping utilities modernize their distribution grids. We help our customers harness the power of data across all their devices and systems deployed throughout the entire distribution grid – from the substation to the EV charger. We offer smart grid solutions across multiple levels: intelligent connected devices, communications networks, data management, enterprise applications and analytics.

TRUConnect™ Edge

Intelligent endpoint and AMI communication module for the Itron CENTRON® C2S Meter

Description

TRUConnect Edge provides Itron CENTRON C2S meters with two-way wireless communications through the TRUConnect Network - the Tantalus utility network that connects the entire distribution system so a utility can gather better information and achieve a new level of operational, business and customer service control and efficiency.

TRUConnect Edge equipped meters provide utilities with accurate billing data, innovative disconnect, prepay, load management and load limiting features as well as grid edge analytics such as peak demand tracking and voltage analytics. The unique service limiting feature can cycle electricity service off and on every 30 minutes, providing an alternative to full disconnection when a disconnect moratorium is in effect.

For utilities looking to upgrade their Itron, Neptune or Badger AMR system to a fixed network, TRUConnect Edge equipped meters will actively collect and relay Itron ERT™ electricity, water and gas data; and Neptune R900® and Badger ORION® CE water and gas readings back to the head end, prolonging the useful life of those assets.

Features/ Benefits

- All consumption, voltage data is pushed to the head end every interval; this is vital for grid edge optimization
- TRUPush™ technology for instant, field-initiated event notifications such as outage alerts and load shed confirmations
- Two-way, 24/7 wireless communications to Itron C2S meters
- Highly granular interval data for flexible rate designs
- On-request reads allow customer service to respond to inquiries and to closely monitor endpoints remotely
- Over-the-air meter configuration and firmware updates for future enhancements
- Optional remote disconnect with arming button for safe reconnection
- Peak Demand
- Net Metering
- Service Limiting
- Theft detection, tampers
- TRUScan reading capability for Itron ERT, Neptune R900/R900i and Badger ORION CE MIUs

TRUConnect™ Edge

Product Specifications

Data Reported	
	• kWh, Instantaneous kW • Net Metering (delivered, received, sum, net) • Voltage on configurable intervals (Min, Max, Instantaneous, 85 - 130V, 170 - 260V, ± 1%) • Optional 15/5 Rolling kW Demand • User defined interval data: 5, 10, 15, 30, 60 minutes • Blink Counts, Sag & Swell Alerts
Meter Forms Supported	
C2S	• 1S (Class 200) • 2S (Class 200, 320) • 12S/25S (Class 200)
C2S-RD with Remote Disconnect	• 1S (Class 200) • 2S (Class 200) • 12S/25S (Class 200)
Environmental	
	• Operating temperature range: -40° to +158° F (-40° to +70° C) • Humidity: 5% to 95% non-condensing

Approvals/ Standards	
	• ANSI C12.1 & C12.20 • FCC for CFR Title 47 Part 15b
Radio	
	• Frequency range: 902 - 928 MHz Unlicensed • TRUConnect Network TRUPush Technology • Vectored Channels: 64,000 • Transmit power: 1.0 watt
Ordering Information	
TC-1120	• TRUConnect Edge for Itron C2S 120V Meter
TC-1220	• TRUConnect Edge for Itron C2S 240V Meter
TC-1120-RD	• TRUConnect Edge for Itron C2S-RD 120V Meter with Disconnect
TC-1220-RD	• TRUConnect Edge for Itron C2S-RD 240V Meter with Disconnect

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Tantalus
HARNESS THE POWER OF DATA

Harness The Power of Data and Modernize Your Distribution Grid

Tantalus is a technology company dedicated to helping utilities modernize their distribution grids. We help our customers harness the power of data across all their devices and systems deployed throughout the entire distribution grid – from the substation to the EV charger. We offer smart grid solutions across multiple levels: intelligent connected devices, communications networks, data management, enterprise applications and analytics.

AGENDA

TRUConnect™ Edge

Intelligent endpoint and AMI communication module for the Itron CENTRON® Polyphase III Advanced OEM-Ready Meter

Description

TRUConnect Edge provides Itron CENTRON Polyphase III Advanced OEM-Ready meters with two-way wireless communications through the TRUConnect Network - the Tantalus utility network that connects the entire distribution system so a utility can gather better information and achieve a new level of operational, business and customer service control and efficiency.

TRUConnect Edge factory integrated meters provide utilities with data from high consumption C&I meters, for accurate billing, power quality monitoring, forecasting, load profiling and flexible rates such as TOU, CPP and dynamic pricing, as well as grid edge analytics such as peak demand tracking and voltage analytics.

Features/ Benefits

- All consumption, voltage and current data is pushed to the head end every interval; this is vital for grid edge optimization
- TRUPush™ technology for instant, field-initiated event notifications such as outage alerts and load shed confirmations
- Two-way, 24/7 wireless communications with Itron CENTRON Polyphase III Advanced OEM-Ready meters
- Highly granular interval data for flexible rate designs
- On-request reads allow customer service to respond to inquiries and to closely monitor endpoints remotely
- Over-the-air configuration and TRUConnect Edge firmware updates for future enhancements
- Peak Demand
- Net Metering
- Theft detection, tampers
- TRUScan reading capability for Itron ERT™, Neptune R900®/R900i® and Badger ORION® CE MIUs

TRUConnect™ Edge

Product Specifications

Data Reported	
	• kWh, kVAh and kVARh • Peak kW and coincident kVAR • Peak kVA and coincident kW • Peak kVAR and coincident kW • Voltage, Current: Phases A, B & C • User defined interval data: 5, 10, 15, 30, 60 minutes • Power factor, frequency • Sags, Swells (PPA license required) • Net Metering (delivered and received)
Power	
	• 120-480VAC, 50/60Hz
Meter Forms Supported	
Self-contained	• 1S (CL100) • 2S (CL200, CL320) • 12S (CL200, CL320), • 16S (CL200,CL320)
Transformer-rated	• 3S • 4S • 9S • 9/36S • 45S (CL20)

Environmental	
	• Operating temperature range: -40° to +158° F (-40° to +70° C) • Humidity: 5% to 95% non-condensing
Standards	
	• ANSI C12.1 & C12.20, Class 0.2 accuracy • FCC for CFR Title 47 P art 15b • Measurement Canada AE-2576
Radio	
	• Frequency range: 902 - 928 MHz Unlicensed • TRUConnect Network TRUPush Technology • Vectored Channels: 64,000 • Transmit power: 1.0 watt
Ordering Information	
PP-1320	• TRUConnect Edge for Itron CENTRON Polyphase III Advanced OEM-Ready Meter
PP-1320C	• Measurement Canada approved TRUConnect Edge for Itron CENTRON Polyphase III Advanced OEM-Ready Meter

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Tantalus
HARNESS THE POWER OF DATA

Harness The Power of Data and Modernize Your Distribution Grid

Tantalus is a technology company dedicated to helping utilities modernize their distribution grids. We help our customers harness the power of data across all their devices and systems deployed throughout the entire distribution grid – from the substation to the EV charger. We offer smart grid solutions across multiple levels: intelligent connected devices, communications networks, data management, enterprise applications and analytics.

Solution Sheet

TRUSense Gateway™

To modernize and digitize the grid, you have to harness the power of data not only from the substation to the meter, but also access devices located behind the meter. TRUSense Gateway™ is a multi-purpose device that creates a secure utility communication path into the premise to extend the edge of the grid to include behind-the-meter DERs.

Description

The TRUSense Gateway is one of the most valuable solutions in the Tantalus Grid Modernization Platform (TGMP™). The edge of the grid has moved to behind the meter, and without the TRUSense Gateway, utilities are flying blind without mission-critical data.

The TRUSense Gateway accelerates grid modernization for utilities of all kinds by delivering broadband data connectivity all the way to edge of the grid, including behind-the-meter. It's installed in a standard meter socket, between the socket and the meter, and delivers:

- Streaming substation-quality grid-edge power measurements
- Power quality issue detection, waveform capture, diagnosis and mitigation
- Vendor-agnostic approach to DER integration
- AMI infrastructure for electric, water and gas metering
- Connectivity available via Fiber, Ethernet or Cellular

More and more utilities are turning to TRUSense Gateway to achieve a cost-effective way to harness the power of data and enhance the reliability and resilience of their distribution grids.

Applications

The TRUSense Gateway represents a first-to-market offering that supports the convergence of four major initiatives across the utility industry:

Delivering next-generation AMI by accessing the benefits of AMI 2.0 without having to replace existing metering infrastructure

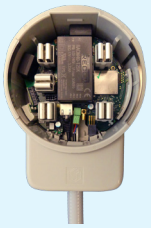
Providing grid optimization by capturing and analyzing granular power quality data to improve the distribution grid and prioritize infrastructure that needs to be upgraded

Integrating DERs located behind-the-meter, such as electric vehicle chargers, solar and storage inverters and smart appliances

Enhancing broadband initiatives by leveraging fiber investments to connect meters for communications and powering optical network terminals delivering broadband services to the home

In short, the Tantalus TRUSense Gateway makes it easier for utilities to become more reliable, resilient, and innovative.

TRUSense Fiber Gateway:
Connects directly to fiber by use of a Small Form-factor Pluggable (SFP) Optical Network Terminal (ONT)

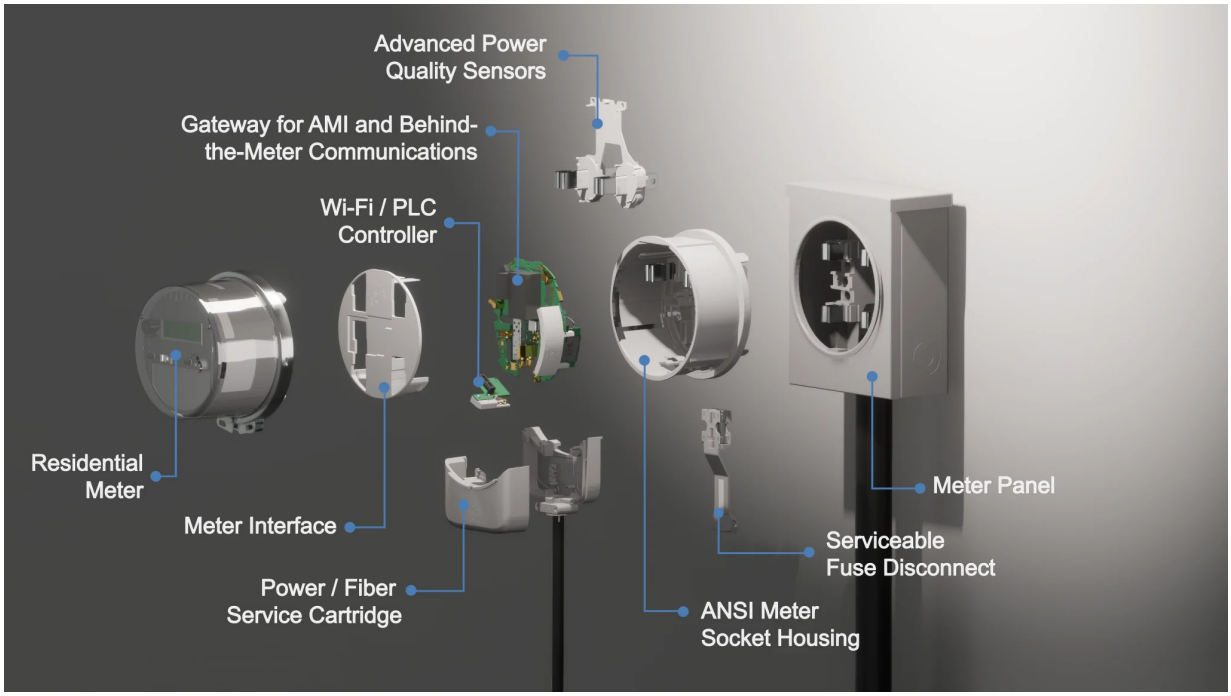


TRUSense Ethernet Gateway:
Supports an outdoor ONT deployment (providing power to the ONT and connecting via an ethernet cable)

TRUSense Cellular Gateway:
Leverages an embedded LTE modem for those utilities not deploying fiber to the home (FTTH) to leverage public or private LTE for AMI and/or DER integration

Solution Sheet

TRUSense Gateway™



Benefits

- Deploy a next-generation AMI system without needlessly ripping and replacing existing meters. Specifically, we help utilities extend and augment existing AMI and AMR investments—including electric, water and gas—to provide a foundation for future innovation and insights at lower costs.
- Create a secure utility communications path into the premises using the same standards-based technologies that control consumer-centric DERs and appliances to build demand-side programs to offset peak demand.
- Monitor power quality at the socket, providing substation-level power quality sensing and measurement to track transient power events and local conditions such as sags, swells, outages and even phase information.
- Provide real-time communications over fiber and cellular networks, allowing utilities to avoid truck-rolls while gaining a granular view of the distribution network.

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VersaComms Gateway™

VC-93x Broadband IP Gateway

Description

The VC-93x VersaComms Gateway ensures fast and flexible data communications via Ethernet. It is designed as a flexible, high capacity network communications device for utilities to support network coverage where required.

The VersaComms Gateway product line serves as a backbone for the Tantalus Grid Modernization Platform™ including TRUConnect™ AMI, TRUFlex™ Load+DER Management, TRUGrid™ Automation and TRUSync™ Grid Data Management. Its mix-and-match modular design allows utilities to customize each device with the optimal mix of WAN/FAN/LAN communications.

The VersaComms Gateway's rapid, reliable communications with TRUConnect-enabled endpoints enables TRUPush™, the push-based delivery of metering data to the utility headend in near real-time. This improves operational response time and customer satisfaction through features such as 5-minute interval data, on-request reads, outage and restoration alerts/notifications and remote disconnect/reconnect. The VersaComms Gateway also relays Itron ERT®, Neptune® and Badger Orion® metering data, collected by TRUConnect endpoints, and delivers it to the utility's headend.

The VersaComms Gateway product series is the most versatile gateway available in the TRUConnect portfolio. It provides lightning-fast connectivity and virtually limitless Smart Grid scalability. The VersaComms Gateway includes a low voltage power delivery system used for power provisioning and backup for externally-mounted telecommunications equipment such as ONTs (Optical Network Terminals), Ethernet routers, WiMAX, cable routers, and UPS modules.

Features/ Benefits

- Provides high-capacity communications in challenging rural and urban environments
- Supports advanced TRUConnect applications such as Demand Response, DA-Grid Optimization, and Streetlight Control
- Compact, rugged weather-proof construction; secure, lockable enclosure
- Supports multiple protocols TRUConnect, Itron ERT®, Neptune® and Badger Orion®
- Can be used for power provisioning to externally-mounted telecommunications equipment such as ONTs, Ethernet and cable routers, and UPS modules
- TRUConnect WAN options (wireless RF, Fiber, LTE/cellular, Ethernet, WiFi, WiMAX, satellite) can be combined to meet economic, coverage and redundancy needs

VersaComms Gateway™

Product Specifications

LAN Radio	
	• Frequency range: 902 - 928 MHz; unlicensed • Transmitter power: 1 .0 watts (EIRP +33 dBm) • Antenna: Up to 4 chassis-mounted, 1 internal
Power Input	
	• Supply: 90 to 305 VAC at 50/60 Hz • Quiescent consumption: 6 - 18 watts steady state • Battery backed up for receiving extended outage reports
Physical	
	• Dimensions: 18”H x 12”W x 8”D • (46cm H x 31cm W x 20cm D) • NEMA 4X construction
Auxiliary Load Supported	
	• 20 - 30 W at 11 - 15 VDC

Environmental	
	• Operating temperature range: -40° to +149° F (-40° to +65° C) when installed with optional extended temp range battery • Humidity: 5% to 95%
Alarms/Indicator Options	
	• Power Outage • Discreet External Power Indicator • Low Battery (future) • Tamper/Cover Open (future)
Battery Uptime without Auxiliary Load	
	• 6 - 16 hours
Battery Uptime at Max Auxiliary Load	
	• 3 hours

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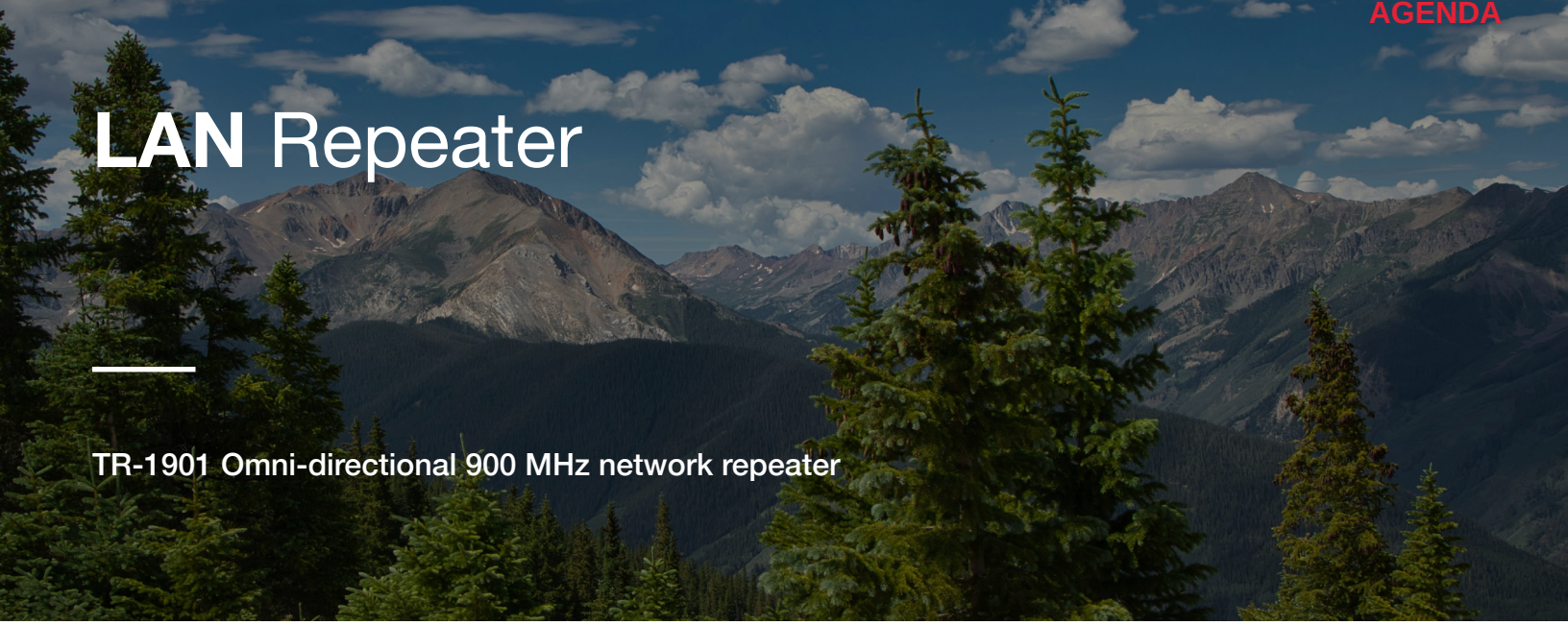

LAN Repeater

TR-1901 Omni-directional 900 MHz network repeater

Description

The TR-1901 LAN Repeater extends the reach of the TRUConnect™ LAN communications into hard-to-reach locations and over challenging terrain. It provides superior omni-directional radio coverage enabling connectivity to larger clusters of LAN endpoint devices at greater distances. This enables a utility to add range and functionality without re-engineering the network.

The LAN Repeater improves radio broadcast range and penetration to ensure that distant sites or those located in challenging urban and rural environments receive reliable communications. It facilitates two-way, near real-time communications between the utility and TRUConnect-enabled endpoints as well as with Itron ERT®, Neptune® and Badger Orion® modules.

With its sensitive receiver capabilities and easy to mount design, the TRUConnect LAN Router is a valuable component in an AMI system.

Features/ Benefits

- Provides long-range communications coverage in both challenging rural and urban environments
- Enables a utility to surgically deploy endpoints anywhere without substation constraints
- Multiple installation options
- Small size, rugged weather-proof construction; secure, lockable enclosure
- Features Tantalus TRUPush™ technology for instant, field initiated event notifications such as outage alerts or load shed success; no device polling required
- Communicates directly with Itron ERT® and Badger Orion® modules

LAN Repeater

Product Specifications

LAN Radio	
	• Frequency range: 902 – 928 MHz; unlicensed • Transmitter power: 0.9 watts (+29.5 dBm) • Antenna: 5 dBi external omni-directi
Power Input	
	• Supply: 100 to 240 V at 50/60 Hz • Quiescent consumption: 4 watts
Physical	
	• Dimensions: 11”W x 13.25”H x 5”D • (28cm W x 33cm H x 12.5cm D)(excludes external antenna) • Weight: 4.1 lbs (1.9 kg)

Environmental	
	• Operating temperature range: -40° to +149° F (-40° to +65° C) • Humidity: 5% to 95%
Approvals/Standards	
	• FCC for CFR Title 47 Part 15b • NEMA 3R enclosure

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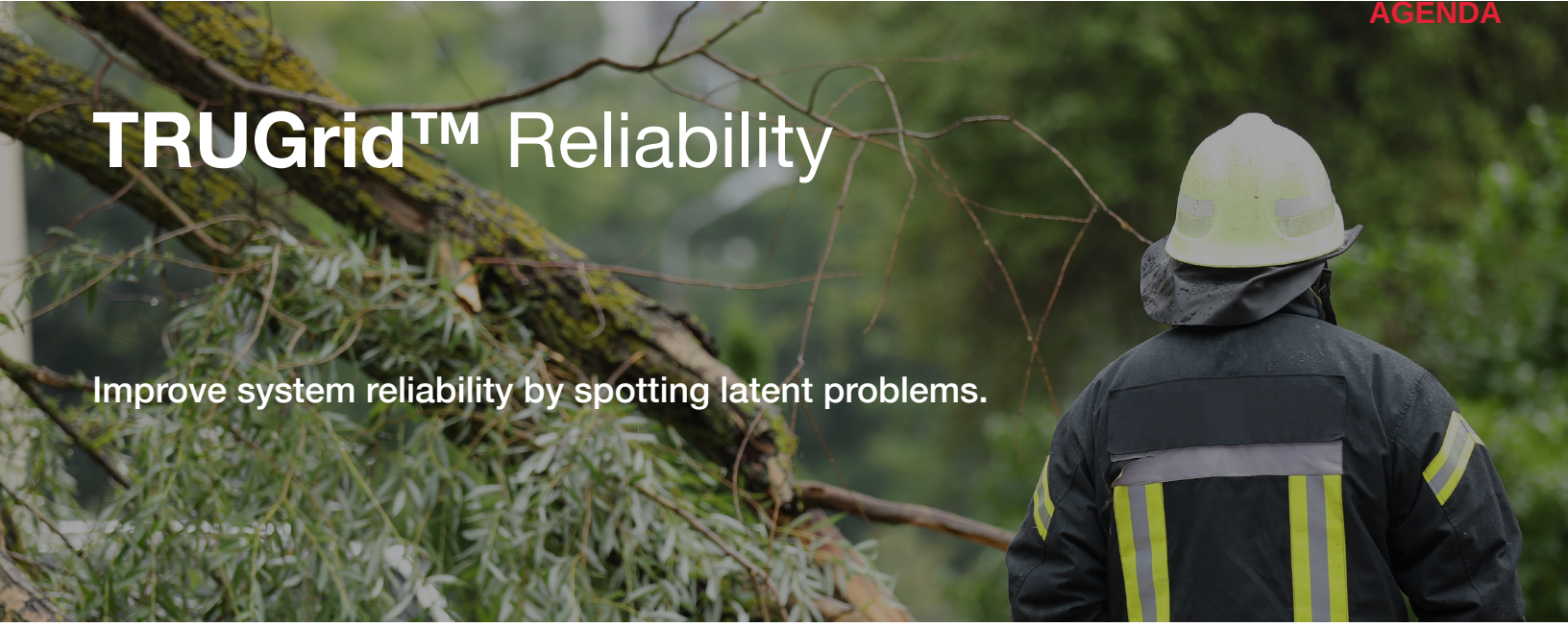
AGENDA

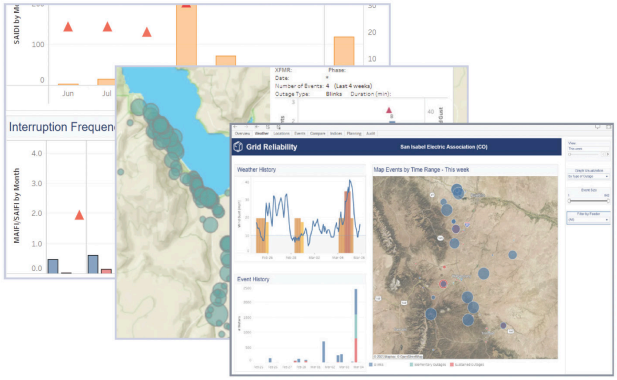


TRUGrid™ Reliability

Improve system reliability by spotting latent problems.

Description

TRUConnect™ Network is a highly efficient Smart Grid platform that enables you to monitor, control and respond to events anywhere and at any time across your distribution network. It serves as the communications backbone that makes Smart Metering, Power Quality Monitoring, Outage Reporting, Load Control, and Distribution Automation practical and cost-effective. The result is more efficient operations, more accurate billing, and the ability to deliver a high level of customer service.



TRUGrid Reliability leverages the interval data from TRUConnect to perform deep analytics and identify issues on the distribution system that may have been overlooked. By continually analyzing power-quality data behind the scenes it alerts you to failing transformers, corroded meter sockets and splices, cracked insulators, and other latent equipment problems.

With wildfire risks at an all-time high, many utilities are searching for proactive solutions. TRUGrid Reliability lets you know whenever vegetation comes into contact with power lines. With built in weather statistics, the tool can prioritize tree and limb removal in preparation for fire season.

TRUGrid Reliability enables proactive planning and decision-making. It provides a new perspective of your distribution network that is inherently forward-looking. Historical-data visualizations demonstrate the before-and-after effects of capital projects.

Features/ Benefits

- Increase customer satisfaction
- Save on equipment and operating costs
- Gain true operational awareness
- Reduce regulatory and hazard risks
- Fortify the distribution system against extreme weather events
- Reduce overtime by fixing emerging problems during business hours
- Prioritize work by tracking MAIFI and CEMI scores for individual feeders
- Set it and forget it with automated alerts for emerging blinks and flickers
- Perform quick investigations through seamless integration with Insight
- Collaborate efficiently by assigning reports for investigation or resolution
- Quickly find problems in the field with geospatial mobile support
- Avoid “phantom” truck rolls by easily validating meter groupings

Simplifying the acquisition, transport and integration of data over energy networks, Tantalus gives utilities and renewable energy producers the technology they need to manage and control power distribution at every point on the grid. Our suite of advanced software applications acquires, transports and presents complex energy data for analysis, action, and automated control – so you can keep energy flowing to customers effectively, efficiently, and safely.

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AGENDA

TRUGrid™ Transformer

Addressing transformer issues before they happen.

Description

With increasingly extreme weather events, accelerating growth in EVs, aging infrastructure and supply chain issues, transformers everywhere are at risk. And when transformers go down, utilities face catastrophic outages, safety issues, costs and supply chain delays. It's a question of when, not if, these costly disruptions hit.

A single power interruption caused by transformer issues can cost a community hundreds of thousands of dollars in lost economic revenue. In order for utilities to enable their customers' success amidst these challenges, the time to invest in real-time insights is now.

With Tantalus' TRUGrid Transformer solution, for the first time ever utilities can monitor, anticipate and prioritize transformer issues in near-real time, before they happen. This means they can avoid the costs, disruptions in service and safety issues that transformer failures bring. What's more, they can proactively plan ahead on how best to manage and upgrade their assets to stay one step ahead of trouble.

Real-Time Transformer Data Across the Grid

- Track how many hours a transformer has been under- or over-loaded
- See when it is time to replace or repair a transformer and prevent the next catastrophic outage
- Map visualization lets utilities select and view individual transformers, identifying the most at-risk units that are likely to cause a problem
- The solution's deep diagnostic tools allow utilities to see exactly how hard they're pushing their transformers, and when they absolutely have to swap out for a new one

Benefits

- Reduce expenses from damaged or broken units
- Prevent outages that could cost your community revenue or lives
- Plan ahead for sags or swells in demand
- Allows for quicker decision making
- Decide where best to position your transformers to ensure uninterrupted, reliable service to your customers
- Gain revenue awareness to capture lost revenue from large customers
- Eliminate guesswork

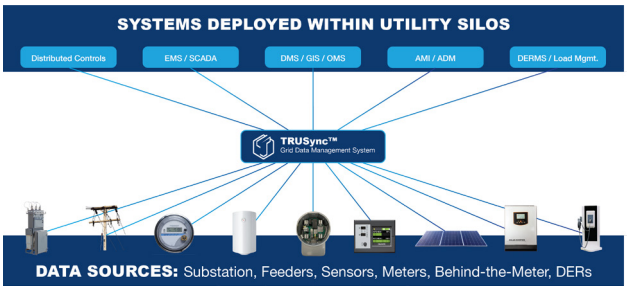
AGENDA

TRUSync™ Grid Data Management

Automate the integration of data across any device, any system or any vendor with TRUSync

Description

Grid data management is mission critical for grid modernization. That is why Tantalus is offering TRUSync Grid Data Management (TRUSync), a revolutionary grid data management system that automates the integration of *all* utility data across any device, any system or even any vendor. TRUSync provides visibility, command and control across all devices and systems, including devices located behind-the-meter such as electric vehicle chargers and solar inverters.



TRUSync acts as a middleware by interconnecting systems to connected devices and managing the flow of data across the entire utility. TRUSync was purpose-built to harness the power of data and help utilities accelerate grid modernization. Today, TRUSync is included as part of all solutions offered by Tantalus and can also be purchased as a standalone solution.

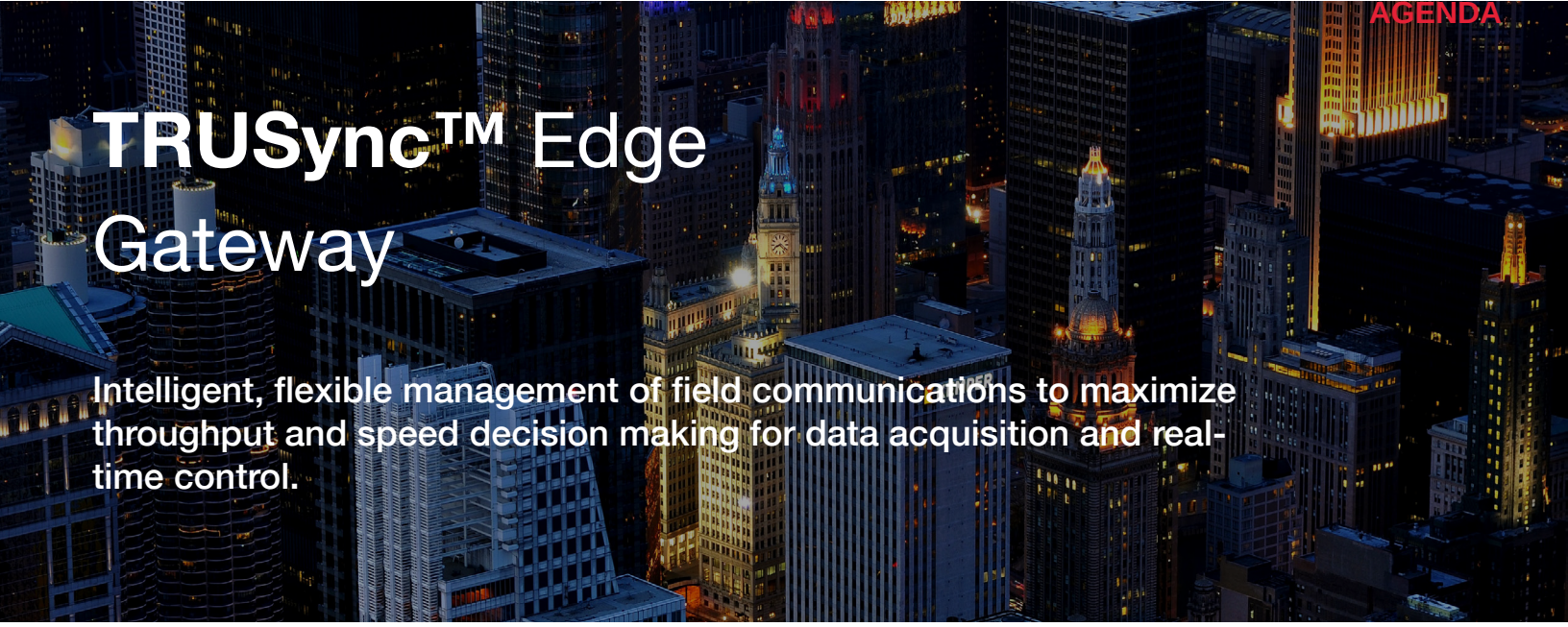
Connectivity types include one-to-one, one-to-many, many-to-one and many-to-many. Across devices and applications, TRUSync enables communications from:

- Device to Application
- Application to Application
- Application to Device (control/parameters)

TRUSync provides an advanced grid data fabric that holds all the utility's grid data, whether acquired from devices or produced by applications. TRUSync is implemented as a data federation. A data federation is a software process that allows multiple, distributed databases to function as one. The TRUSync database is distributed across a series of data nodes. There is a central node that contains the present value and state of all data points known to the system. In addition, there are outlying nodes at data collection and data serving locations that contain partial copies of the data needed and cached at each location. This virtual database takes data from a range of sources and converts it to a common model. This provides a single source of data for utility applications. TRUSync uses high performance memory-resident database technology for performance. This eliminates the latency introduced by writing to and reading from a disk-based database. The distributed memory-resident databases, plus an event-driven architecture results in high-speed operation with no wasted CPU cycles.

Benefits

- Automating the integration of all grid data for visibility, command, and control across the entire grid, including devices located behind-the-meter
- Eliminating costly and complex integration projects
- Avoiding needless rip-and-replace costs and mitigating the impact of stranded assets through unparalleled reverse-compatibility across generations of edge-devices
- Providing total flexibility through true data interoperability across any device, protocol and data model
- Generating a single version of the truth that bridges the gap between Operational Technologies (OT) and Information Technologies (IT)
- Delivering unparalleled scalability in terms of memory, processing power, and servers



TRUSync™ Edge Gateway

Intelligent, flexible management of field communications to maximize throughput and speed decision making for data acquisition and real-time control.

Description

TRUSync Edge Gateway can be configured via a drag-and-drop graphic editor or plug-and-play, to communicate via any standard protocol, while providing protocol and data model translation that allow applications direct access to the data they need. Whether integrating DERs, distribution equipment, or anything else, the TRUSync Edge Gateway is designed for seamless integration.

Our Edge Gateway's advanced protocol support and data handling, combined with robust communications management tools provide you unparalleled ability to connect with all your field devices over any network – even your AMI system.

TRUSync Edge Gateway uses multi-acquisition data polling methods and optimized TCP/IP parameters to stream line the flow of operational data through your field area and AMI networks. In addition, TRUSync Edge Gateway supports channel grouping for advanced throughput management on any IP network.

Combine all your data from many devices into one gateway-enabled node, reducing integration costs. TRUSync Edge Gateway supports advanced interfaces for integration into other systems, increasing the business value of your data.

Data Acquisition & Communications Management

- Supports simultaneous, multi-channel polling
- Support for standard protocols (e.g. DNP3, Modbus, MultiSpeak, ICCP etc.) and advanced protocols (e.g. IEEE 2030.5, IEC-61850, Tesla Energy API)
- Multi-Protocol Support on a single communications channel
- Multi-acquisition method support over a single channel (i.e. static polling and report by exception)
- Manage throughput of multiple IP enabled end devices through a single access point (for mesh or point to multi-point RF systems)

Cyber Security & Reliability

- Support for SSL and TLS (levels 1.0-1.3)
- Supports NERC CIP compliant data acquisition and transport
- Full redundancy for disaster recovery; high availability options available

Data Concentration, Transposition and Service

- Supports time tagging down to millisecond resolution, add time tags when necessary
- Perform full protocol and data model translation
- Pub/sub architecture for efficient data serving
- Supports the capability combine many devices into a single slave device or multiple slave devices for master systems

Interface Standards & System Management

- REST / Web Services
- California Independent System Operator (CAISO) – ADS and AGC
- Full Remote Management
- Fully integrated RF system monitoring and protocol analyzer

Simplifying the acquisition, transport and integration of data over energy networks, Tantalus gives utilities and renewable energy producers the technology they need to manage and control power distribution at every point on the grid. Our suite of advanced software applications acquires, transports and presents complex energy data for analysis, action, and automated control – so you can keep energy flowing to customers effectively, efficiently, and safely.

TECHNICAL SUPPORT PLAN SUMMARY

This document is Addendum B-1 to Exhibit B - Technical Support of Tantalus' Network Systems & Services Agreement (the "**Agreement**"). Unless otherwise defined in this Addendum or elsewhere in Exhibit B, defined terms will have the respective meaning set out in the Agreement.

The Technical Support Plans available are as follows:

STANDARD[1]	PREMIUM [2]
Standard Support Includes: Technical Support 7:00 AM – 7:00 PM, 5 days per week excluding U.S.A. and Canadian holidays (as applicable) Response to queries within 4 hours of initial contact.	Premium Support Includes: Technical Support 7:00 AM – 9:00 PM, 7 days per week excluding U.S.A. and Canadian holidays (as applicable) Response to queries within 4 hours of initial contact. 7 x 24 Extended Customer Support based on exception-based monitoring* *Exception Based Monitoring is defined as alarms related to head end server and/or NC issues
Consolidated Invoices (TSA/Annual Support) - Licensed Software Annual Maintenance - Endpoint Annual Maintenance	Consolidated Invoices (TSA/Annual Support) - Licensed Software Annual Maintenance - Endpoint Annual Maintenance
Quarterly Training Sessions - Remote [non-certification]	Quarterly Training Sessions - Remote [non-certification]
Customer Community access	Customer Community access
	Annual Users Conference - Admission for 2
	Priority email premiumsupport@tantalus.com - Response in 4 hours
	Priority Support Line
	Online Technical Support Chat
	Annual Certification Training - Tantalus University - Admission for 2
	Custom Billing Exports - Includes annual support
	48-hour Part Replacement - M-F (excluding U.S.A. and Canadian holidays), cutoff by 3:00 PM
	Advance RMA replacements - Shipment within 48 hours after reported issue
	Remote System Health Check - Annual investigation with reported customer action plan - WAN Assessment - LAN Assessment - Dashboard Health Check
	Assigned Project Manager (PM)

[1] Standard level technical support is required for all Customers.
[2] Premium level technical support is available for an additional fee.

Individual features of each plan are as described below:

CUSTOMER SUPPORT

Standard Level – Technical Support 7:00 AM – 7:00 PM, 5 days per week excluding U.S.A. and Canadian holidays (as applicable).

Premium Level - Technical Support 7:00 AM – 9:00 PM, 7 days per week excluding U.S.A. and Canadian holidays (as applicable).

- Response to queries within 4 hours of initial contact.
- 7 x 24 Extended Customer Support based on exception-based monitoring*
- *Exception Based Monitoring is defined as alarms related to the head end server and/or base station issues.

CONSOLIDATED INVOICES

Consolidated invoices for Licensed Software Maintenance and Technical Support, and hosting fees (as applicable).

QUARTERLY TRAINING SESSIONS

Remote Training

The training sessions are flexible and can be broken up into multiple sessions, depending on the required participants. Training sessions are designed as 60 - 90-minute web-based discussion groups, held once per quarter based upon the subject matter generated at Tantalus' Annual Users Conference. Recorded non-certification training sessions and webinars are made available in Customer Community.

COMMUNITY ACCESS

Community Access includes the following:

- Tools to track the status of current and previous equipment orders and enter and track Return Material Authorization ("**RMA**") orders for Tantalus equipment.
- A library provides technical product documentation and installation guides.
- A project information section including tracking of project related meetings and action items.
- A knowledge-based forum for open discussion of current issues in the deployment and concerns of the project team.
- An issue creator allows the Customer to create feature requests and other issues for the Tantalus project team in the event that the issue is not already covered in the standard system documentation. Once created, issues are evaluated, resourced, and reported based on resource availability.

Time sensitive and urgent issues should be raised by Customer via Tantalus' Technical Support Line at +1- 877-886-3848.

Routine Documentation Updates

Routine updates to operational material will be provided to all Customers. Examples of these documents include network server operations manuals, endpoint product manuals, Insight operations manuals and other manuals, as applicable. Updated versions of all Customer documentation will be available in Customer Community.

STANDARD TECHNICAL SUPPORT CONTACT INFORMATION

If you have an URGENT issue, call: +1-877-886-3848

For non-urgent issues, please email:

Standard Support Email Address - tantalustechsupport@tantalus.com

NOTE: THE REMAINING TECHNICAL SUPPORT FEATURES BELOW ARE ONLY AVAILABLE WITH THE PURCHASE OF PREMIUM SUPPORT PACKAGE.

ANNUAL TANTALUS USERS CONFERENCE

With the purchase of a Premium package, the Customer receives admission for two (2) representatives to the Annual Tantalus Users Conference ("**TUC**").

The annual TUC provides an excellent opportunity for the Tantalus community to gather for education, sharing, networking, and social events. The TUC is a knowledge-driven event with heavy focus on the customer experience, technical training, and collaboration with Tantalus, utility peers, and our extensive network of partners.

*Admission includes the cost of registration for two (2) representatives only. Travel and living expenses are not included and are the responsibility of Customer. Customers with Standard packages will be responsible for costs associated with attendance, separate and apart from this Agreement.

DESIGNATED PRIORITY SUPPORT EMAIL

With purchase of a Premium package, Customer will receive a priority email address which directs email messages to the Field Operations team during non-core business hours, thereby allowing the issue being reported to receive attention prior to the start of the next business day.

Priority Support Email Address: premiumsupport@tantalus.com

PRIORITY SUPPORT LINE

With purchase of a Premium package, once available, Customer will have direct access to Tantalus' Field Operations team for placing high priority calls during non-core business hours. Upon receipt of such calls, Tantalus staff will take action, either by solving the problem directly, or by contacting other expert individuals to assist depending on the nature of the call.

Tantalus will apply commercially reasonable efforts to promptly deliver the described services in a professional and workman-like manner and in accordance with generally recognized commercial practices and standards. The promptness and utility of our response may vary from time-to-time, depending upon the accuracy and completeness of the information provided, our ability to reproduce the problem, the scope of work required to address an issue, and the volume of support service traffic at the time.

ONLINE TECHNICAL SUPPORT CHAT

Premium Support Customers will be able to access Tantalus' Online Technical Support Chat ("**Live Chat**") to have a personalized one-on-one, real time, text-based interactive conversation with a Tantalus Field Service representative.

- Live Chat is available through Customer Community and will be queued on a on a first come- first-serve basis.
- Hours of operation - 8:00 am to 5:00 pm, Monday – Friday, excluding U.S.A. and Canadian holidays.

ANNUAL CERTIFICATION TRAINING

With purchase of a Premium package, Customer receives admission for two (2) Tantalus Users to attend Tantalus University™. This comprehensive training and certification series is designed to provide a full range of advanced training opportunities to Tantalus Users across all departments and roles.

Please see https://tantalus.com/training/ for more detail.

*Admission includes the cost of registration for two (2) representatives only. Travel and living expenses are not included and are the responsibility of Customer. Customers with Standard packages will be responsible for costs associated with attendance, separate and apart from this Agreement.

CUSTOM BILLING EXPORTS

With purchase of a Premium package, Customer has access to a billing function that summarizes meter data and presents it directly to Customer's billing or CIS system from Insight.

Insight can be used to bill utility customers based on end of day readings, interval readings, for both single-phase and polyphase meters.

Includes customized extraction scripts of Customer data from the Insight database and maintenance.

48 HOUR PART REPLACEMENT

Applicable to non-warranty parts, excluding base station / head end servers, during the times listed below.

Only includes the cost associated with outgoing expedited shipping of component. Does not include the cost of material or shipping charges incurred by Customer.

Monday – Friday (excluding U.S.A. and Canadian holidays), cutoff by 3:00 pm. Shipment within 48 hours after reported issue.

ADVANCE RMA REPLACEMENTS

Most endpoint devices have a unique Network ID (NID) in a bar code on each unit. You can use the Customer Community to request an RMA for any of these devices (TCs, RTs, LMs, XRs, etc.). The Customer Community will help you through the process of submitting your request.

Inquiries about equipment that does not have a NID should be directed to your Project Manager.

With the purchase of a Premium package and subject to a written Customer request, equipment repairs conducted under the applicable equipment warranty may include advance replacement of the failed components, if such components are available in Tantalus inventory, to afford greater responsiveness to the Customer. Otherwise, Tantalus will require the failed component be received prior to shipping a replacement under warranty. Where advance replacement is provided for failed components under warranty, Customer must return the failed component, within 30 days of shipment of advance replacement, freight prepaid by Customer to Tantalus at its designated depot, together with Tantalus' return material authorization number ("**RMA**") and completed on-line problem sheet. Where advance replaced failed components are not returned by Customer within 30 days, Tantalus will invoice Customer for the price of the advance replaced component supplied and Customer hereby agrees to make payment to Tantalus within 30 days of the invoice date.

REMOTE SYSTEM HEALTH CHECK

With purchase of a Premium package, Customer receives:

- Annual investigation with reported customer action plan
- WAN Assessment
- LAN Assessment
- Dashboard Health Check

A remote system health check provides a summarized report identifying Customer actions that need to be performed in order to improve system performance.

ASSIGNED PROJECT MANAGER

With purchase of a Premium package, Tantalus will assign a specific Project Manager to the Customer's project.

TANTALUS TECHNICAL SUPPORT CONTACT INFORMATION

If you have an URGENT issue, call: +1-877-886-3848

For non-urgent issues, please email:

Standard TSA - tantalustechsupport@tantalus.com

Premium TSA - premiumsupport@tantalus.com

CONFIDENTIALITY STATEMENT

This proposal, including all copies, exhibits, attachments, related materials and subsequent amendments (collectively, the "**Materials**"), contains information that is confidential and proprietary to Tantalus Systems Inc. ("**Tantalus**"). The Materials are provided in confidence for use solely by the recipient to whom it is addressed and only for the purpose for which the Materials are supplied.

The unauthorized use, access or disclosure of the Materials would cause injury to Tantalus and the loss of competitive advantage and is strictly prohibited. The recipient shall safeguard the Materials from unauthorized use, access or disclosure using at least the degree of care it uses to protect its most sensitive information and no less than a reasonable degree of care.

To the extent allowed by law, the recipient, by its receipt of this document, acknowledges that it is the Materials are confidential information and contain proprietary information belonging to Tantalus.

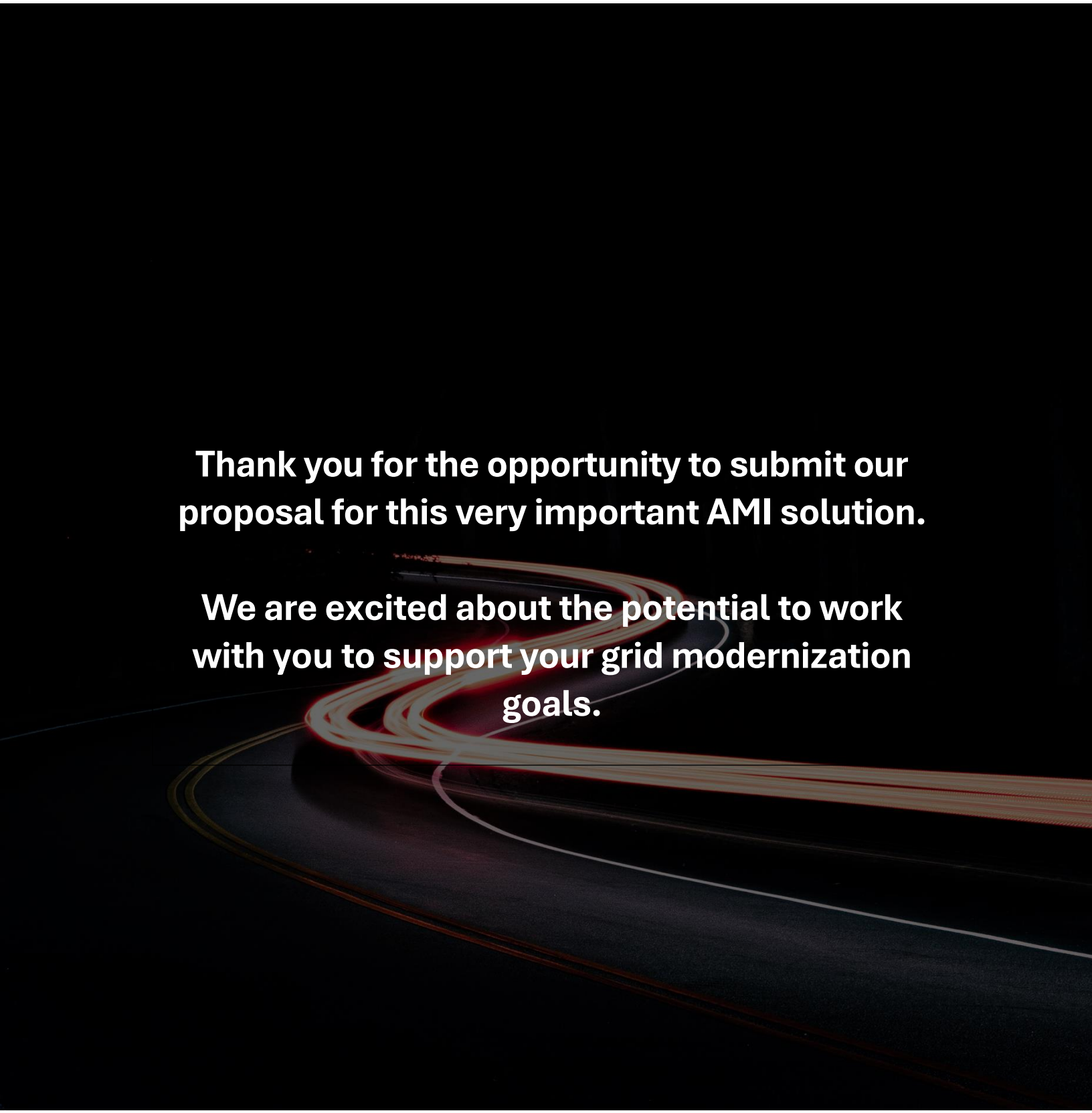
In accordance with applicable rules and regulations, Tantalus shall be entitled to notification from the recipient of any request for disclosure of all or any portion of the Materials and reserves the right to take any and all action necessary and appropriate to protect the information from release and maintain its confidentiality.

The recipient shall immediately provide Tantalus with written notification of any request for release of information contained in the Materials immediately upon receipt of the request via electronic mail and USPS at the following physical and electronic mail addresses:

Tantalus Systems Inc.
Attn: Erin T. Gould, Manager, Contracts
1130 Situs Court, Suite 230
Raleigh, NC 27606
Email to: egould@tantalus.com

The Materials may include forward looking statements that reflect Tantalus' current roadmap; however, it is subject to change based on market conditions and customer feedback. Except as expressly set forth in the Materials, Tantalus provides the Materials without any representation or warranty, express or implied, as to the accuracy or completeness thereof and Tantalus shall have no liability to recipient or any other person relating to recipient's use of the Materials or any errors therein or omissions therefrom.

While Tantalus' proposal will address customer-provided requirements in the RFP, customer requirements often change between release of an RFP and final contract negotiations. For this reason, the RFP and this proposal response are not intended for incorporation into contract documents in their entirety, but instead should be used as a basis for guiding negotiations in order to establish and finalize contract commitments and obligations.


Thank you for the opportunity to submit our proposal for this very important AMI solution.
We are excited about the potential to work with you to support your grid modernization goals.

TANTALUS SYSTEMS INC.
TERMS AND CONDITIONS OF SALE
(04012025)

Purpose/Goal. These Terms and Conditions of Sale ("**Terms**") set forth the terms and conditions under which Customer agrees to purchase from Tantalus, and Tantalus agrees to sell to Customer, Network Equipment, Initial Deployment Services and Maintenance and Support Services, as the case may be. Notwithstanding any other provision to the contrary, these Terms become a binding agreement between Tantalus Systems Inc. ("**Tantalus**") and the Customer when (a) Customer delivers a signed copy of this quotation to Tantalus, which shall be deemed a duly authorized Purchase Order ("**PO**") for the Network Equipment, Initial Deployment Services and Maintenance and Support Services quoted therein; (b) Customer delivers a signed Purchase Order for all or any portion of the Network Equipment, Initial Deployment Services or Maintenance and Support Services or (c) Tantalus ships or provides all or any portion of the Network Equipment, Initial Deployment Services or Maintenance and Support Services covered by this quotation. Except as provided above, any provision in any acceptance or acknowledgment hereof, inconsistent with or in addition to these Terms, are expressly rejected and shall have no force or effect, unless otherwise agreed in writing between the parties. Notwithstanding the foregoing, acceptance of these Terms indicates Customer's agreement to execute such additional documents, as required, including, without limitation, the terms, conditions and responsibilities of each party relating to the license and use of the Licensed Software prior to shipment of any Network Equipment to Customer, the provision of Technical Support, and deployment of Network Equipment. Notwithstanding anything to the contrary herein, Tantalus shall not be responsible for nor have any liability to Customer for any delay or failure to perform its obligations under these Terms to the extent such delay or failure is caused by or results from an Excusing Event. These Terms, including and together with any related quotations, exhibits, schedules, attachments, and appendices, together with the Purchase Orders, constitute the sole and entire agreement of the parties with respect to the subject matter contained herein and therein, and supersedes all prior and contemporaneous understandings, agreements, representations, and warranties, both written and oral, regarding such subject matter.

Purchase Orders. Customer may purchase Network Equipment and Initial Deployment Services by issuing properly authorized Purchase Orders to Tantalus. Each type of Network Equipment may have an economic order quantity or minimum order quantity, meaning that no Purchase Order may be placed for a quantity of those units of Network Equipment which is less than the minimum number of units specified on the then current Tantalus price list and designated as the "economic order quantity" or "minimum order quantity". Each Purchase Order issued by Customer shall have a lead-time of at least 90 days. Lead-time means the time extending from the date the Purchase Order is received by Tantalus to the specified delivery date. Each Purchase Order shall reference these Terms and shall state product description, quantity of Network Equipment and Initial Deployment Services ordered, part number, desired delivery date and Destination, method of shipment, unit price for each unit ordered and total purchase price. In the event of any inconsistency or conflict between any terms of a Purchase Order, order confirmation, invoice or any other commercial form used by the parties and these Terms, these Terms shall govern. No oral, electronic, or written additional or different provisions proposed by either party in any acceptance, confirmation, or acknowledgment shall apply. Purchase Orders, once accepted, may not be cancelled, except as outlined below.

Acceptance, Rejection or Changes to Purchase Orders. Tantalus will notify Customer of its acceptance or rejection of each Purchase Order as soon as practicable and notice of acceptance shall include confirmation of requested quantities and prices consistent with these Terms. Once a Purchase Order is accepted by Tantalus, the quantities and prices within that acceptance, unless otherwise noted on such acceptance, are committed to and cannot be changed without the consent of both Tantalus and Customer. If the parties agree to changes to a Purchase Order, those changes will be incorporated in a replacement Purchase Order, which will follow the same process outlined above referencing the Purchase Order to be replaced.

Pricing. The prices provided to Customer under the quotation attached to these Terms may contain promotional or one-time pricing. Future prices shall be as set forth on Tantalus' then-current price list and do not include taxes. In addition, Tantalus shall bear the costs and charges to ensure that all Network Equipment purchased by Customer is cleared for importation into the United States, if applicable, and delivered to the Shipping Point. Customer will be responsible for and pay all applicable federal, state, municipal or other governmental sales use, excise, value-added taxes, occupational or other taxes, tariffs, duties and surcharges (including those imposed on Tantalus) now in force or enacted in the future which are associated with the provision of Network Equipment and Initial Deployment Services by Tantalus, excluding taxes on Tantalus' income generally.

Price Changes. Tantalus reserves the right, in its sole discretion, to revise the prices on thirty (30) days prior written notice to Customer by whichever of the following is greater: (i) the immediately preceding year's percentage increase in the Consumer Price Index For All Urban Customers, All Cities Average, All Items ("**CPI-U**"), as published by the Bureau of Labor Statistics, U.S. Department of Labor in the "Summary Data from the Consumer Price Index New Release" for the 12-month period ending at December 31st of the calendar year immediately preceding the adjustment date; or (ii) or 3.5% per year. Notwithstanding the foregoing, the original price of any Network Equipment and Initial Deployment Services covered by Purchase Orders issued by the Customer, and which Purchase Orders are confirmed and accepted by Tantalus prior to the Effective Date of such price revision, will not be changed for such Purchase Orders issued and accepted as of the Effective Date.

Payment Terms. Tantalus shall invoice Customer for Network Equipment purchased upon delivery of such Network Equipment to Customer at the Shipping Point. At its discretion, Tantalus may require Customer to pay an advance payment as a deposit upon terms determined by Tantalus and any such deposit amounts paid will be reflected as a credit to the total purchase price due and owing upon delivery completion of the total Purchase Order. Payment terms are net thirty (30) days from date of Tantalus' invoice. All payments shall be in U.S. dollars, unless otherwise agreed to between Tantalus and Customer. In addition to any other remedies Tantalus may have for late payments, Customer will be charged interest at 1½% per month (equivalent to an annual rate of interest of 18%), payable monthly on all overdue amounts. Customer shall also be responsible for collection costs associated with the late payment, if any, including reasonable attorney's fees. Payments will be applied first to interest payable and then principal owing. Tantalus may modify the preceding payment terms if, in its reasonable opinion, the payment record or financial condition of Customer so justifies. Tantalus shall issue periodic invoices to Customer for all Maintenance and Support Services and Third-Party Products, as applicable, in accordance with the terms set forth in the Maintenance and Support Agreement as fees for such goods and services are incurred.

Delivery and Risk of Loss. Tantalus shall deliver the Network Equipment to Customer at the Shipping Point (cleared for export, if applicable) and title (other than title to Licensed Software which shall remain with Tantalus) and risk of loss of Network Equipment shall pass from Tantalus to Customer at the Shipping Point. If any loss of or damage to the Network Equipment occurs prior to delivery to Customer, regardless of passage of title prior to such delivery, Tantalus shall without cost to the Customer, promptly make all repairs or replacements necessary to place the Network Equipment in the condition required by these Terms. Customer will notify Tantalus within five (5) days of delivery of any damage to Network Equipment and/or within 10 days of shipping should an order not be received. If the Shipping Point and Destination are not the same, Customer shall be responsible for and shall pay all transportation and insurance costs for Network Equipment from the Shipping Point to the Destination, provided however that upon request by Customer, Tantalus shall make the arrangements for such transportation and insurance and will invoice Customer for reimbursement at cost. The payment terms described herein shall apply to such invoices, *mutatis mutandis*. Delivery dates are approximate only. Tantalus shall notify Customer in writing, if Tantalus has knowledge of any event that is reasonably likely to materially delay any specified delivery date or change any specified delivery date.

Third-Party Products. Unless otherwise specifically set forth in writing (and subject to applicable pass-through terms and conditions) upon mutual agreement of all involved Parties, Tantalus does not warrant Third-Party Products and disclaims all responsibility and liability for these items, their access to the Network Equipment, including their modification, deletion, disclosure or collection of Customer information.

Insurance. During all times in which Customer has possession of Network Equipment for which Tantalus has not received payment in full, Customer shall ensure that comprehensive general liability insurance with limits at least equal to the total value of all such Network Equipment is obtained and, upon request, provide Tantalus with a certificate evidencing such coverage.

Changes to Network Equipment. Tantalus reserves the right from time to time in its sole discretion to modify, change, discontinue or to limit its production of any Network Equipment at any time to allocate, terminate or limit deliveries of any Network Equipment in time of shortage and to alter the design or construction of any Network Equipment.

No Resell. Customer acknowledges and agrees that it has no rights to market and resell the Network Equipment. The purchase and sale of Network Equipment hereunder is solely for Customer and its Affiliates' requirements.

Confidentiality. The parties have entered into a Mutual Non-Disclosure and Confidentiality Agreement prior to or simultaneously with execution of these Terms ("**MNDA**"). The parties agree that the MNDA governs the obligations of each party with respect to Confidential Information of the other party, which obligations shall survive termination of these Terms.

Warranty. With respect to new Network Equipment, for a period of one (1) year from the date of shipment of each unit of Network Equipment to Customer from Shipping Point, Tantalus warrants that: (i) each unit of Network Equipment will be free from defects in material, workmanship and manufacture under normal use and service, (ii) title to each unit of Network Equipment shall be free and clear of all liens, financial encumbrances and security interests, (iii) all materials, parts, components and other items initially incorporated in the Network Equipment will be new; and (iv) each unit of Network Equipment shall be compliant with, and perform in accordance with its Specifications. The warranty for replaced or repaired Network Equipment originally warranted under this paragraph shall be thirty (30) days from date of return to Customer or the balance of the original warranty period, whichever is greater. With respect to refurbished Network Equipment, for a period of 30 days from the date of shipment of refurbished Network Equipment to Customer from Shipping Point, Tantalus warrants that: (i) each unit of refurbished Network Equipment will be free from defects in material, workmanship and manufacture under normal use and service, (ii) title to each unit of refurbished Network Equipment shall be free and clear of all liens, financial encumbrances and security interests; and (iii) each unit of refurbished Network Equipment shall be compliant with, and perform in accordance with its Specifications. The aforementioned warranties apply only when all three of the following conditions prevail: (i) the unit of Network Equipment is owned by the original Customer and not by an assignee; (ii) the Customer is not the subject of bankruptcy or comparable proceedings; and (iii) while there is not an Excusing Event in effect or Tantalus has not invoked a subsisting remedy in respect of Force Majeure. The aforementioned warranties will not apply to Licensed Software which is sold "as is" with no warranty, in accordance with the applicable EULA, will not cover any Third-Party Products provided by Tantalus or Third-Party Products or services provided to Customer by third-party suppliers. Any

warranty for such products will be between Customer and the third-party manufacturer or supplier. To the fullest extent allowed, Tantalus will assign all third-party warranties to Customer.

Warranty Returns. For any breach of warranty, Tantalus' sole obligation shall be to, at its sole option and expense, repair or replace defective Network Equipment or refund the purchase price thereof, within 60 days of receipt of such defective Network Equipment at its designated depot, provided that the Customer has returned the defective Network Equipment to Tantalus no later than four weeks after the expiry of the applicable warranty period set forth herein. Customer will be responsible for removing defective Network Equipment from the installation point and returning the defective Network Equipment, transportation charges prepaid by Customer, to Tantalus at its designated depot, together with Tantalus' return material authorization ("**RMA**") number and completed problem sheet. Tantalus will be responsible for paying all shipping and other costs incidental to the return of repaired or replacement Network Equipment to Customer. Customer will be responsible for re-installing such repaired or replacement Network Equipment. To the extent Tantalus determines that the Network Equipment returned under warranty is not defective (that is, no fault found), Customer will pay for the return of the Network Equipment and will pay Tantalus the fee of US$150 per no fault found Network Equipment. Tantalus will make available out-of- warranty repairs in accordance with its programs in effect at the relevant time. Services for out-of-warranty repairs will be provided at Tantalus' then current time and materials fees and rates.

No Warranty. The warranties described herein shall not apply to any units of Network Equipment which have been mistreated including without limitation the following: (i) units whose original bar code, copyright notices and proprietary legends, if any, have been altered; (ii) units that were not installed in accordance with the Specifications and Standards or serviced by Tantalus or a person authorized by Tantalus to do so; (iii) units that were the subject of repair, modification or alteration without Tantalus' approval; (iv) units damaged or defective because of reasonable wear and tear; (v) units that were not maintained and operated in accordance with the Specifications and Standards, including, without limitation, units damaged or defective because of problems with electrical power; (vii) units that in Tantalus' reasonable opinion have been misused, altered, abused or subject to abnormal conditions of operation or handling; or (ix) units damaged or defective due to an Excusing Event.

DISCLAIMER. TANTALUS DISCLAIMS ALL OTHER REPRESENTATIONS, WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED OR STATUTORY, INCLUDING ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON- INFRINGEMENT OF OTHER'S INTELLECTUAL PROPERTY RIGHTS AND DURABILITY.

Relief for patent and copyright matters. Tantalus, at its expense, shall defend any court suit brought against Customer by a third party alleging that units of Network Equipment purchased by Customer infringe US or Canadian patent or copyright. Tantalus' obligation to defend is effective only if Customer is not in breach of any of these Terms and of any other agreement between the parties, and if Tantalus is notified promptly and given complete information, assistance and authority by Customer to conduct the defense. If any unit of Network Equipment: is adjudicated by a court of competent jurisdiction after appeals therefrom are exhausted, as infringing any US or Canadian patent or copyright or has its use enjoined by such court, Tantalus will, at its election: (i) procure for the Customer the right to continue using said unit; (ii) replace it with non-infringing and functional equivalent; (iii) modify it to become non-infringing; or (iv) if none of the aforementioned options are reasonably available, refund to Customer all amounts paid for the infringing Network Equipment, depreciated on a straight line basis over a ten (10) year period. Tantalus' obligation to defend includes the sole right to settle. Tantalus' obligation to defend does not apply to the following: (A) Network Equipment based on a design, specifications or instructions supplied or requested by Customer; (B) use of Network Equipment in combination with any other hardware or software not provided by Tantalus, if infringement would not have occurred but for such combination; (C) use of any release of Licensed Software or any firmware other than the most current release made available to Customer; (D) use of Network Equipment other than as permitted under these Terms , or as intended by Tantalus, if the infringement would not have occurred but for such use; or (E) modifications made to Network Equipment not made by Tantalus or approved by Tantalus. The foregoing states Tantalus' entire liability with respect to intellectual property infringement by any unit of Network Equipment. For the avoidance of doubt, Tantalus shall not have any liability hereunder relating to or arising from Third-Party Products.

General Indemnity. Tantalus shall defend, indemnify and hold Customer harmless from all loss, expense or damages (including without limitation, reasonable attorney's fees) which may be incurred by Customer as a result of any claims or actions resulting from: (a) damage to tangible personal property owned by Customer and caused by the gross negligence of Tantalus; and (b) death of or bodily injury to a Customer employee or third party to the extent caused by Tantalus' gross negligence. Customer will provide Tantalus with prompt, written notice of any claim covered by this indemnification. Unless Tantalus fails to defend Customer, Customer shall not undertake the defense of any such claim. Tantalus, at its sole expense, shall defend all such claims and actions against Customer, whether brought informally or through court or administrative procedures. For the avoidance of doubt, Tantalus shall not have any liability hereunder relating to or arising from Third-Party Products.

Customer Indemnity. The relationship of Tantalus and Customer established by these Terms are that of independent contractors and neither party is an employee, agent or joint venture of the other. All financial obligations associated with Customer's business are the sole responsibility of Customer. Except for warranty claims under these Terms, Customer shall indemnify, defend and hold harmless Tantalus from and against any and all claims, liabilities, damages, debts, settlements, costs, attorneys' fees, expenses and liabilities of any type whatsoever that may arise on account of Customer's activities, or those of its employees or agents, including, without limitation, (i) all sales and use taxes and similar charges arising in connection with the purchase of Network Equipment and Initial Deployment Services hereunder and all other federal, state and municipal taxes, interest, fines and penalties arising in connection with Customer's business activities and (ii) those relating to Customer's use of the Network Equipment or Customer's breach of any term, representation or warranty of these Terms.

Limitations. NOTWITHSTANDING ANY OTHER PROVISION TO THE CONTRARY, OTHER THAN FOR GROSS NEGLIGENCE, WILLFUL MISCONDUCT OR FRAUD, NEITHER PARTY WILL BE LIABLE TO THE OTHER FOR ANY (I) SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES OR LOSSES INCLUDING, WITHOUT LIMITATION, LOSS OR CORRUPTION OF DATA, LOSS OF REVENUE, SAVINGS OR PROFITS, CLAIMS BY USERS AND THIRD PARTIES, LOSS OF GOODWILL, BUSINESS INTERRUPTION OR OTHER PECUNIARY LOSS WHETHER ARISING FROM BREACH OF WARRANTY OR CONDITION, BASED ON CONTRACT, TORT, RELIANCE, FUNDAMENTAL BREACH, STATUTE, OR ANY OTHER THEORY, AND EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES; OR (II) COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES. NOTWITHSTANDING ANYTHING ELSE IN THESE TERMS AND WITHOUT LIMITING THE FOREGOING, TANTALUS WILL NOT BE LIABLE WITH RESPECT TO ANY SUBJECT MATTER OF THESE TERMS UNDER ANY CONTRACT, NEGLIGENCE, CIVIL LIABILITY, TORT, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR: (A) ANY AMOUNTS IN EXCESS OF THE AGGREGATE AMOUNTS PAID TO TANTALUS FOR NETWORK EQUIPMENT AND INITIAL DEPLOYMENT SERVICES GIVING RISE TO SUCH LIABILITY IN THE TWELVE (12) MONTH PERIOD IMMEDIATELY PRECEDING THE CLAIM; (B) ANY FAILURE OR DELAY DUE TO AN EXCUSING EVENT; OR (C) ANY ALLOCATION OF NETWORK EQUIPMENT AND INITIAL DEPLOYMENT SERVICES AMONG ITS CUSTOMERS IN THE EVENT OF A SHORTAGE. LIMITATIONS OF LIABILITY WILL NOT BE ASSERTED TO THE EXTENT PROHIBITED BY RELEVANT LAWS AND POLICIES. TANTALUS' PRICING REFLECTS THIS ALLOCATION OF RISKS AND THE LIMITATION OF LIABILITY.

Ownership of Intellectual Property. Except for licenses otherwise expressly granted under these Terms, the sale of Network Equipment hereunder does not convey to Customer any Proprietary Rights in the Network Equipment and Customer acknowledges Tantalus' exclusive rights thereto. Neither the sale of Network Equipment nor any provision of these Terms will be construed to grant to Customer, either expressly, by implication or by way of estoppel, any license under any other Proprietary Rights of Tantalus covering or relating to any other product or invention of Tantalus, or any combination of the Network Equipment with any other product of Tantalus.

Term. Unless terminated earlier as provided herein, these Terms shall have an initial term of one (1) year commencing on the execution date of these Terms ("Initial Term") and shall automatically renew for successive one (1) year periods thereafter, until terminated in accordance with these Terms (each, together with the Initial Term, the "**Term**").

Termination. Either party may terminate these Terms effective upon the delivery of written notice of such termination to the other party, if the other party: (i) becomes insolvent, is generally not paying its debts as such debts become due, makes an assignment for the benefit of creditors, is the subject of any voluntary or involuntary case commenced under the federal bankruptcy laws, as now constituted or hereafter amended (which, in the case of involuntary bankruptcy, is not dismissed within 30 days), or of any other proceeding under other applicable laws of any jurisdiction regarding bankruptcy, insolvency, reorganization, adjustment of debt or other forms of relief for debtors, has a receiver, trustee, liquidator, assignee, custodian or similar official appointed for it or for any substantial part of its property, or is the subject of any dissolution or liquidation proceeding; (ii) breaches its obligations related to confidentiality; or (iii) is in default in any material respect in the performance of any its obligations under of these Terms, provided that the party not at fault has given the other party forty five (45) days prior written notice of such default and such other party has not remedied the default during such 45-day cure period, provided however if the defaulting party is Customer and such default is attributable to or includes Customer's failure to pay any amount when due, then the aforementioned 45-day cure period will be reduced to five (5) days. Either party may terminate these Terms, at any time and for any reason, on ninety (90) days' prior written notice to the other party, provided however that if terminated by Customer, Tantalus shall take commercially reasonable efforts to cancel any deliveries to Customer which are scheduled to be made after the termination date. Customer shall be responsible for all amounts due to Tantalus arising prior to the termination date, including the cost of Network Equipment received by Customer, or that has been shipped within 45 days, following the date of the notice. Prior to the effective termination of these Terms, all of the terms and conditions of, and the respective rights and obligations of the parties to, these Terms will remain completely valid and enforceable; provided however that, in the event Tantalus terminates these Terms for cause, then any deliveries of Network Equipment and Initial Deployment Services to Customer which are scheduled to be made subsequent to the effective date of termination shall be cancelled and any product warranties or guarantees hereunder shall be terminated and of no further force and effect. Termination is not the sole remedy available under these Terms and, whether or not termination is effected; all other legal remedies will remain available. Notwithstanding anything to the contrary in these Terms, no expiration or termination of these Terms by either party shall affect (A) any rights or obligations of either party which are vested pursuant to these as of the effective date of such expiration or termination, and (B) any other provisions intended by the parties to survive such expiration or termination including, but not limited to, Purchase Orders accepted pursuant to these Terms.

Dispute Resolution. Except for Disputes related to nonpayment or as otherwise provided in this Section, neither Party shall resort to formal litigation proceedings until the Parties have attempted to resolve the Dispute through non-binding mediation. The Party raising a Dispute shall submit to the other Party a written notice and supporting material describing all issues and circumstances related to the Dispute (a "**Dispute Notice**"). A designated senior management representative of each Party shall attempt to resolve the Dispute. If the Parties' Representatives fail to resolve the Dispute within thirty (30) days from receipt

of a Dispute Notice, the Dispute shall be referred to a mediator in the jurisdiction provided for in these Terms as mutually agreed between the Parties. The Parties covenant that they will use commercially reasonable efforts in participating in the mediation. The Parties agree that the mediator's fees and expenses and the costs incidental to the mediation will be shared equally between the parties. The Parties further agree that all offers, promises, conduct, and statements, whether oral or written, made in the course of the mediation by any of the Parties, their agents, employees, experts, and attorneys, and by the mediator and any employees of the mediation service, are confidential, privileged, and inadmissible for any purpose, including impeachment, in any litigation, arbitration or other proceeding involving the parties, provided that evidence that is otherwise admissible or discoverable shall not be rendered inadmissible or non- discoverable as a result of its use in the mediation. If the Parties cannot resolve any Dispute for any reason, including, but not limited to, the failure of either party to agree to enter into mediation or agree to any settlement proposed by the mediator, within thirty (30) days after the later of the referral to a mediator or the mediation proceeding, either Party may file suit in a court of competent jurisdiction in accordance with these Terms. These Terms shall not be construed to prevent a Party from instituting litigation proceedings earlier than as indicated in these Terms to: (a) avoid the expiration of any applicable limitations period, (b) preserve a superior creditor position or (c) seek injunctive relief to prevent irreparable harm, including without limitation, harm caused by a breach of confidentiality obligations.

Notices. All notices under these Terms must be made in writing and shall be deemed properly delivered when: (i) delivered personally, (ii) sent by e-mail to the address below, delivery confirmation required, or (iii) mailed by certified mail, postage prepaid or overnight delivery service to the address of the other Party set forth below or sent by facsimile (provided confirmation of delivery is obtained at the time of transmission). Communications must be addressed to Tantalus as follows: Peter A. Londa, President & CEO Tantalus Systems Inc., 1130 Situs Court, Suite 230, Raleigh, NC 27606; Facsimile: (919) 900-8978; E-mail: legal_dept@tantalus.com and to Customer at the address noted below. Unless expressly set out to the contrary herein, consent or approval that is explicitly required herein of a Party hereto will not be unreasonably delayed, withheld or withdrawn by it. Either Party may change the address for service by giving 15 days' advance written notice to the other Party.

Severability. If any term or other provision of these Terms is invalid, illegal or incapable of being enforced by any rule or Law, all other conditions and provisions of these Terms shall nevertheless remain in full force and effect so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to any Party. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the Parties hereto shall negotiate in good faith to modify these Terms so as to effect the original intent of the Parties as closely as possible in an acceptable manner to the end that transactions contemplated hereby are fulfilled to the extent possible.

Amendment and Waiver. No amendment or waiver of any provision of these Terms shall be effective unless it is in writing and signed by the party against which it is sought to be enforced. No waiver by any party or any breach or series of breaches in performance by the other party, and no failure, refusal or neglect to exercise any right, power or option given to either party to insist upon strict compliance with or performance of the obligations hereunder, will constitute a waiver of the provisions hereof with respect to any subsequent breach thereof or a waiver by such party of its right at any time thereafter to require strict compliance with the provisions hereof.

Governing Law. These Terms shall be governed and construed in accordance with the laws of the State of Delaware (without giving effect to its conflict of law's provisions which would lead to the application of the laws of another jurisdiction). If either Party employs attorneys to enforce any rights arising out of or relating to these Terms, the prevailing Party shall be entitled to recover actual, reasonable attorneys' fees. Except to the extent necessary to obtain jurisdiction over a third party, any legal action, suit or proceeding arising out of these Terms shall be brought solely and exclusively in Wake County, North Carolina, and each Party irrevocably accepts and submits to the sole and exclusive jurisdiction of tribunals in Wake County, North Carolina. Tantalus and Customer waive a trial by jury in any such suit, action or proceeding.

Force Majeure. No default, delay or failure to perform on the part of either Party shall be considered a breach of these Terms where such default, delay or failure is due to a Force Majeure. Lack of funds or credit will not constitute a Force Majeure. In the event of a Force Majeure, the Impacted Party shall promptly give notice of the Force Majeure Event to the other party, stating the period of time the occurrence is expected to continue. The Impacted Party shall use diligent efforts to end the failure or delay and ensure the effects of such Force Majeure Event are minimized. The Impacted Party shall resume the performance of its obligations as soon as reasonably practicable after the removal of the cause.

Compliance with Laws. Each Party shall, at its own cost and expense, comply with all applicable Laws relating to the subject matter of these Terms.

Successors and Assigns. These Terms bind, and inures to the benefit of, the parties and their respective successors. These Terms shall not be assigned by either party without the prior written consent of the other party, except that Customer agrees that Tantalus may assign, without notice to Customer, any account receivable arising under these Terms in connection with a factoring arrangement.

Further Assurance. Each Party undertakes with the other Party that it will execute such documents (including, without limitation, any applicable attachments to these Terms) and do such acts and things as that other Party may reasonably require for the purpose of giving to that other Party the full benefit of the provisions of these Terms.

Relationship of the Parties. The relationship of Tantalus and Customer established by these Terms is that of independent contractors and neither party is an employee, agent or joint venture of the other. No rights or obligations other than those expressly recited herein are to be implied from these Terms. Specifically, nothing in these Terms shall create a fiduciary relationship between the disclosing party and the receiving party. No license or other right is hereby granted directly or indirectly to use in any way, any patent, copyright or other proprietary right now held by, or which may be obtained by, or which is or may be licensed by, either Party.

Definitions and Interpretation. "**Acceptance**" or "**System Acceptance**" means that the system acceptance tests set forth in the System Acceptance Test Plan as set forth in the attachments hereto have been completed and all requirements of Acceptance as set forth in attachments hereto were met. **"Affiliate"** means, with respect to any Party, any legal entity that such Party owns, is owned by, or is under common control with such Party. For purposes of the foregoing definition of "Affiliate", the terms "control" and "own" mean possessing a 50% or greater interest in an entity or the right to direct the management of the entity. **"Business Day"** means any day that is not a Saturday, Sunday or a Tantalus authorized "holiday". "**Confidential Information**" has the meaning set forth in the MNDCA. **"Destination"** means Customer's designated destination point for the delivery of Network Equipment. **"Dispute"** means any dispute, controversy, difference or claim, arising under or in connection with these Terms, including its formation, validity, binding effect, interpretation, performance, breach or termination, as well as non-contractual claims. **"Excusing Event"** means any (i) Force Majeure; (ii) failure, act or omission of Customer or its agents, employees, suppliers, subcontractors or consultants, including without limitation improper performance of Customer's responsibilities under these Terms, or unreasonable delay or failure of Customer to approve changes that are relevant to an applicable failure; (iv) failure, act or omission of any third party (including any third-party supplier) or its agents, employees, suppliers, subcontractors or consultants; or (v) failure of any components (hardware, software, network, maintenance) provided and/or maintained by Customer. "**EULA**" means Tantalus' then current end-user software license agreement setting forth the terms and conditions of Customer's permitted use of the Licensed Software. **"Force Majeure"** means any failure or delay in fulfilling or performing any of these Terms (except for any obligations to make payments to the other party hereunder), when and to the extent such failure or delay is caused by or results from the following force majeure events (**"Force Majeure Event(s)"**): (a) acts of God; (b) flood, fire, earthquake, epidemics, pandemics or explosion; (c) war, invasion, hostilities (whether war is declared or not), sabotage, terrorist threats or acts, riot or other civil unrest; (d) government order or law; (e) actions, embargoes or blockades in effect on or after the date of these Terms; (f) judicial restraint or other action by any governmental authority (including, without limitation, an inability to procure permits, licenses or authorizations from any local, state, or federal agency for any of the supplies, materials, accesses or services required to be provided by either Customer or Tantalus under these Terms); (g) national or regional emergency; (h) strikes, labor stoppages or slowdowns or other industrial disturbances; (i) shortage of adequate power or transportation facilities; and (j) other similar events beyond the reasonable control of the party impacted by the Force Majeure Event (the "**Impacted Party**"). "**Initial Deployment Services**" means (i) Tantalus' standard services for initial deployment, installation and configuration of Tantalus products purchased by Customer under these Terms as described in a Statement of Work, as mutually agreed between the Parties; (ii) Tantalus' standard initial training services for the Customer; and (iii) related project management for such initial deployment and training. For clarity, and notwithstanding anything to the contrary, the Initial Deployment Services do not include integration or installation of field equipment (i.e. meters, collectors, repeaters, etc.), Third-Party Products, or Maintenance and Support Services. Integration to existing vendor supported interfaces are included in the Initial Deployment Services. For the avoidance of doubt, custom services, including custom integration(s) between the Network Equipment and Third-Party Products that are not existing vendor supported interfaces, are not included in the Initial Deployment Services and are subject to additional fees and written agreement between Tantalus, Customer and any applicable third-party in the form of a written Change Order. "**Law**" means any statute, law, ordinance, regulation, rule, code, constitution, treaty, common law, governmental order, or other requirement or rule of law of any governmental authority. "**Licensed Software**" means all Tantalus software and firmware residing on, or provided in connection with, each unit of Network Equipment purchased under these Terms, together with all software documentation related thereto and any and all updates thereto. The terms and conditions of the EULA will apply to the Licensed Software provided to Customer. "**Licensed Software Maintenance Services**" shall have the meaning ascribed to them in Addendum A-1 of the EULA. "**Maintenance and Support Services**" means the recurring Licensed Software Maintenance Services and Technical Support provided by Tantalus to Customer pursuant to the Maintenance and Support Agreement entered by and between Tantalus and Customer. "**Network Equipment**" means the equipment manufactured by or for Tantalus for use as part of the Tantalus Grid Modernization Platform™ ("**TGMP**") and its associated Licensed Software that are or will be purchased from Tantalus hereunder as set forth on a Purchase Order (from time to time). For clarity, Network Equipment does not include the system backhaul, network operations center, meters or any Third-Party Products. "**Proprietary Rights**" means all patent rights, copyrights, trademarks, tradenames, know-how, trade secrets and other intellectual property and proprietary rights, including all rights, interests, and protections that are associated with, equivalent or similar to, or required for the exercise of, any of the foregoing, however arising, in each case whether registered or unregistered and including all registrations and applications for, and renewals or extensions of, these rights or forms of protection under the Laws of any jurisdiction throughout in any part of the world. "**Purchase Orders**" means purchase orders issued, from time to time, by Customer to Tantalus pursuant to which Customer will purchase Network Equipment and Initial Deployment Services in accordance with these Terms. Each Purchase Order will be deemed to include these Terms, even if not specifically stated on the Purchase Order. "**Representative**" means such Party's directors, officers, employees, agents, consultants, legal counsel, accountants and financial advisors of a Party to these Terms. "**Shipping Point**" means the designated depot or depots in North America selected by Tantalus as its shipping point for Network Equipment. "**Specifications**" means the design, performance and regulatory requirements for each Network Equipment, as such may be amended from time to time by Tantalus, which

Specifications will assume and require the installation, maintenance and operation of such Network Equipment in accordance with the Standards. **"Standards"** means the applicable industry standards necessary for the proper installation, maintenance and operation of Network Equipment, as may be amended from time to time by Tantalus, including, without limitation, the maintenance of a distribution system meeting industry standards with respect to grounding and power quality and the use of water pits for the installation of Network Equipment that properly drain and are not otherwise defective. "**Statement of Work (SOW)**" means a document that defines the scope of work to be completed, the timelines for the overall project, provides visibility into the interdependencies required, and will assist all parties in understanding and executing their respective roles, responsibilities and tasks to successfully deploy the Network Equipment. Upon commencement of the Initial Deployment Services, Tantalus and Customer will work cooperatively to develop and finalize a Statement of Work. "**Technical Support**" means the technical support services described in the Maintenance and Support Agreement. "**Third-Party Product**" means any products, software, materials, information or services that are manufactured, provided and/or licensed by, or otherwise proprietary to, a person or entity other than Tantalus. **Interpretation Not Affected by Headings, etc.** The division of these Terms into sections and other portions and the insertion of headings are for convenience of reference only and shall not affect the construction or interpretation hereof. **Number, etc.** Unless the context otherwise requires, words importing the singular shall include the plural and vice versa and words importing any gender shall include all genders. **Date for Any Action.** In the event that any date on which any action is required to be taken hereunder by any of the parties hereto is not a Business Day, such action shall be required to be taken on the next succeeding day which is a Business Day. **Construction.** In these Terms, unless otherwise indicated:(a) the terms "these Terms", "hereof", "herein", "hereunder" and "hereby" and similar expressions refer to these Terms (including the schedules hereto), as amended or supplemented from time to time pursuant to the applicable provisions hereof, and not to any particular section or other portion hereof; (b) the words "include", "including" or "in particular", when following any general term or statement, shall not be construed as limiting the general term or statement to the specific items or matters set forth or to similar items or matters, but rather as permitting the general term or statement to refer to all other items or matters that could reasonably fall within the broadest possible scope of the general term or statement; (c) time is of the essence; and (d) references to a "party" or "parties" are references to a Party or Parties to these Terms. **Authorship**. Authorship of these Terms will have no bearing on the construction of any terms hereof or ambiguities thereof.

Execution. These Terms may be executed in one or more counterparts, all of which shall be considered one and the same agreement and shall become effective when one or more counterparts have been signed by each of the Parties and delivered to the other Parties. These Terms may be executed and delivered electronically or by facsimile and the Parties agree that such facsimile or electronic execution and delivery shall have the same force and effect as delivery of an original document with original signatures, and that each party may use such facsimile or electronic signatures as evidence of the execution and delivery of these Terms by all Parties to the same extent that an original signature could be used.

Quotation as Purchase Order. Signature below shall constitute submission by the Customer and acceptance by Tantalus of the foregoing quotation as an authorized Purchase Order for the equipment and services listed thereon, subject to the foregoing Terms. The Purchase Order may not be modified, added to or rescinded except through mutual agreement and acceptance in writing by both Parties.

AGREED AND ACCEPTED:

TANTALUS SYSTEMS INC.

BY: _____
Name: _____
Title: _____
Date: _____

Eldridge Municipal Utilities IA

BY: _____
Name: _____
Title: _____
Date: _____

Customer Address for Notices:

_____
Eldridge Municipal Utilities IA
_____
_____
Facsimile: _____
E-mail: _____

The following attachments, as applicable, are incorporated into and form an integral part of these Terms and shall be executed, as applicable, concurrently with or prior to the execution of these Terms by the Parties:

Maintenance and Support Agreement
End User License Agreement
MNDA

AGENDA

Eldridge, Iowa

Inspection Report:
81,000-Gallon Capacity
Detention Tank

Prepared by:

KLM Engineering, Inc.
1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
651.773.5111 | www.klmengineering.com

November 2025

Project No 5383-25

Table of Contents

1.0| PROJECT INFORMATION

KLM Project No.:	5383-25	**Customer P.O. Number:**	n/a
Tank Owner:	Eldridge, Iowa	**Phone:**	563-285-4841
Street/City/State/Zip:	305 North 3rd Street, Eldridge, IA 52748		
Owner Contact:	Cegan Long, Water Superintendent		
Tank Designation:	Detention Tank		
Tank Description:	Ground Storage Reservoir		
Tank Location:	505 West Donahue Street, Eldridge, IA 52748		
Capacity:	81,000 gallons		
Type of Construction:	Welded	**Construction Drawings:**	Unavailable to KLM
Manufacturer:	Unknown	**Construction Date:**	Unknown
Serial No.:	Unknown	**Design Code:**	AWWA D100
Tank Diameter:	~24 feet		
Tank Height:	Overall ~30 feet		
Height to:	HWL ~24 feet	LWL	Grade
Purpose of Inspection:	Condition Assessment		
Date of Inspection:	October 30, 2025		
Inspected By:	Mason Odone and Ashton Alford		
Type of Inspection:	KLM Standard ROV Evaluation		
Previous Inspection Records:	None available to KLM		

EXISTING COATING INFORMATION

	Interior Wet	Exterior
Date Last Coated	Unknown	Unknown
Full or Spot Repair	Full	Full
Coating Contractor	Unknown	Unknown
Surface Preparation	Blast	Blast
Paint System	Epoxy	Acrylic
Paint Manufacturer	Unknown	Unknown

Eldridge, Iowa

81,000–GALLON CAPACITY DETENTION TANK

2.0| REFERENCES

The tank interior and exterior areas were evaluated in conformance with the following:

a. KLM Engineering, Inc. Proposal.

b. General guidelines of AWWA Manual M42 Appendix C “Inspecting and Repairing Steel Water Tanks, and Elevated Tanks for Water Storage.”

c. KLM "Procedures and Guidelines for Inspecting Existing Steel and Concrete Water Storage Tanks."

d. AWWA Standard D100; Welded Carbon Steel Tanks for Water Storage.

3.0| COATINGS EVALUATION

3.1| Lead and Chromium Content Analysis

KLM recommends performing sampling and testing of the interior and exterior coatings prior to the next reconditioning to determine if existing coatings contain lead and/or chromium in excess of current federal limits. Coatings exceeding the limits would be considered hazardous and require additional safety measures to protect public and contractor health. Removal and disposal of lead and/or chromium-based paints must be performed in accordance with applicable local, state, and federal regulations. Proprietary products or other commercial methods are available to contractors to incorporate into their removal process to mitigate risks and convert the waste to a non-hazardous material allowing for more disposal options.

3.2| Interior Wet Coating

It is unknown when the tank was constructed or by whom. The interior wet coating is in poor condition above the high-water line (HWL) with more than 25 percent visible coating failures. Failures consist of corrosion along plate seams, around the access manway and aeration piping, and at random areas on roof plates. Visibility was poor below the water line, however, what could be observed indicated widespread surface corrosion on the shell plates. The floor was not visible due to substantial sediment accumulation, and as a result, the outlet pipe could not be located for evaluation. See photos in Appendix A.

3.3| Exterior Coating

The exterior coating is in fair to good overall condition with less than one percent visible coating failures observed throughout the structure. Failures consist of random corrosion cells on the finial vent, handrailing, and aerator support structure. See photos in Appendix A.

3.4| Replacement Coating Systems

When the next full reconditioning is performed, KLM recommends preparing surfaces in accordance with NACE guidance and applying a coating system for each area according to the following. The galvanized shell of the aerator is in good condition.

3.5.1| Interior Wet Coating

Surface preparation should be performed according to SSPC-SP10 Near White Metal Blast criteria.

Apply a two-coat system:

1. moisture cured zinc-rich
2. NSF 61 certified epoxy

3.5.2| Exterior Coating

Surface preparation should be performed according to SSPC-SP6 Commercial Blast Clean criteria.

Apply a four-coat system:

1. moisture cured zinc-rich
2. polyamidoamine epoxy
3. aliphatic acrylic urethane
4. fluoropolymer

4.0| STRUCTURE MODIFICATIONS

Structure modifications and repairs serve to bring the tank into compliance with OSHA regulations and AWWA standards. They also improve areas of the tank that are prone to premature development of corrosion, repair surface defects resultant from tank construction, remove abandoned and unnecessary equipment, and improve tank maintenance capabilities.

The following is a list of recommended modifications and repairs to be included during the next reservoir reconditioning. Detailed information important to each item will be determined when developing the project specifications. Additional minor modifications, not impacting on the estimated project cost, may be identified, and incorporated at that time.

Photographs referred to in this section are in Appendix A.

4.1| Interior Wet Modifications

4.1.1 Seal weld all unwelded roof plate seams. See photos 2 through 6.

4.1.2 Seal weld the roof to shell connection. See photos 2 through 6.

4.1.3 Seal weld the aerator pipe penetration at the roof. See photo 2.

4.1.4 Seal weld all pipe supports below the high-water line. See photos 7 and 9.

4.1.5 Replace the gaskets on the two bolted shell doorways. See photos 28 and 30.

4.2| Exterior Modifications

4.3.1 Replace the finial vent with an aluminum pressure pallet style vent. The new vent and vent screen design should meet AWWA regulations. The removable top will improve ventilation, provide access to the tank interior during reconditioning, and aid in compliance with OSHA confined space entry requirements. See photo 15.

4.3.2 Install a hinge-covered roof access manway near the roof edge adjacent to the shell ladder.

4.3.3 Install a self-closing gate on the roof handrailing at the roof access. See photo 17.

4.3.4 Replace the electrical disconnect for the aerator with a weatherproof junction box. See photo 21.

4.3.5 Install an OSHA compliant cable style safety climb device on the shell ladder. See photo 25.

4.3.6 Seal weld the electrical stand-off brackets to the shell. See photo 31.

4.3.7 Install a splash pad under the overflow pipe outlet as recommended by AWWA D100. See photo 32.

4.3| Cathodic Protection (CP) System

4.3.1 The tank does not have a cathodic protection system, and one is not required if the coating is applied and maintained properly.

5.0| PROPERTY CONSIDERATIONS

5.1| Site and Environmental Considerations

5.1.1 The tank is located on the same property as the Water Treatment Facility and is adjacent to residential property to the south.

5.1.2 In conformance with Iowa DNR regulations, methods are required to maintain air quality and to prevent the drift of dust and fugitive emissions. Measures may consist of full containment, water injection blasting, or approved equal.

6.0| RECONDITIONING SUMMARY

6.1| Reconditioning Summary and Cost Estimate

Due to the condition of the interior wet coating, KLM recommends performing the noted structure modifications and replacing the interior and exterior coatings within the next two years. At the time of reconditioning, it should also be determined if the aerator requires upgrades and/or reconditioning.

The costs for structure modifications and replacing the interior and exterior coatings (including the containment) are estimated to be between $200,000 and $225,000. This estimate is based on current pricing and does not include costs for engineering and/or inspection services.

An experienced tank-coating contractor with the proper crew and equipment should be able to complete the project in four weeks. At the time of reconditioning, the tank will need to be drained and remain off-line during interior structure modifications, abrasive blasting, and painting.

KLM ENGINEERING, INC.

Report prepared by:

Joseph Clasemann

Joseph Clasemann, P.E.
Civil Engineer
MN License No. 64141

Report reviewed by:

Rodney Ellis

Rodney Ellis
Vice President/COO
NACE Certified Coatings Inspector No. 1686
AWS/CWI 0404031

APPENDIX A

PHOTOGRAPHS

Photo No. 1
Overall view of the tank

Photo No. 2
Roof condition and aeration pipe

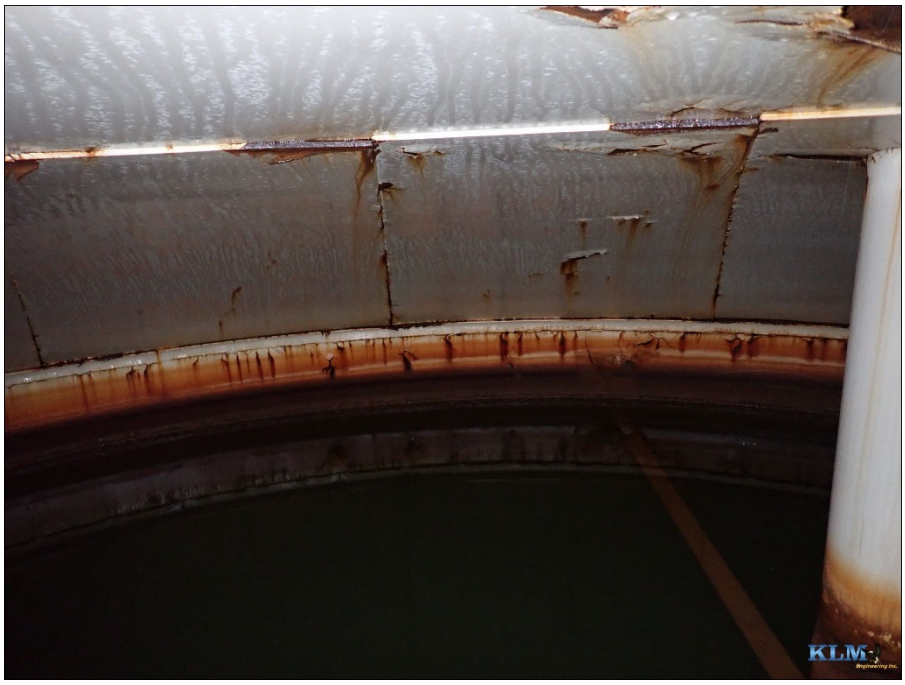


Photo No. 3
Roof condition
Note: unwelded seams

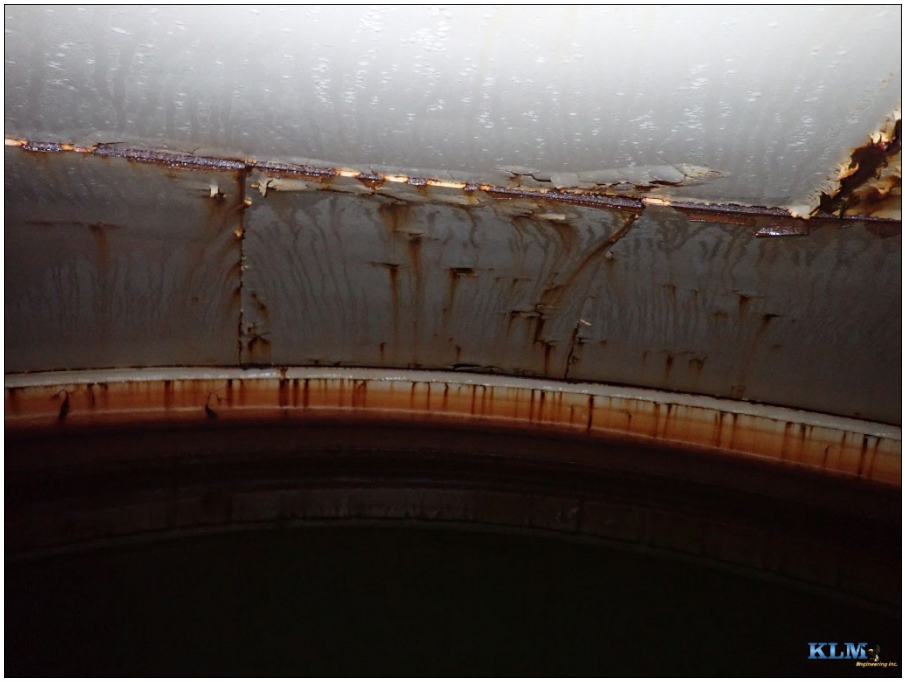


Photo No. 4
Roof and top of shell

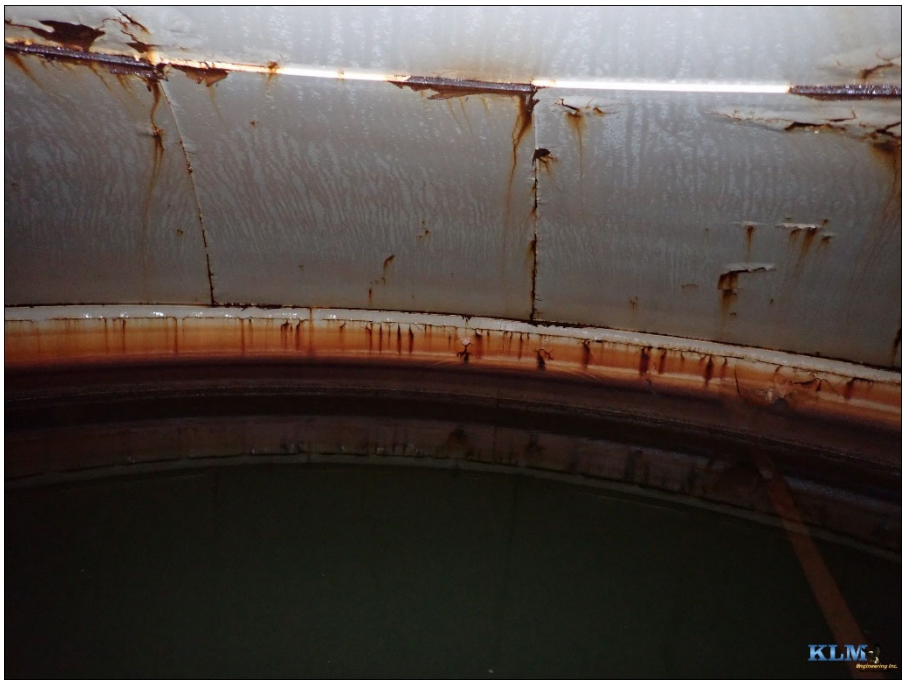


Photo No. 5
Roof and top of shell

Photo No. 6
Overflow pipe and fill pipe

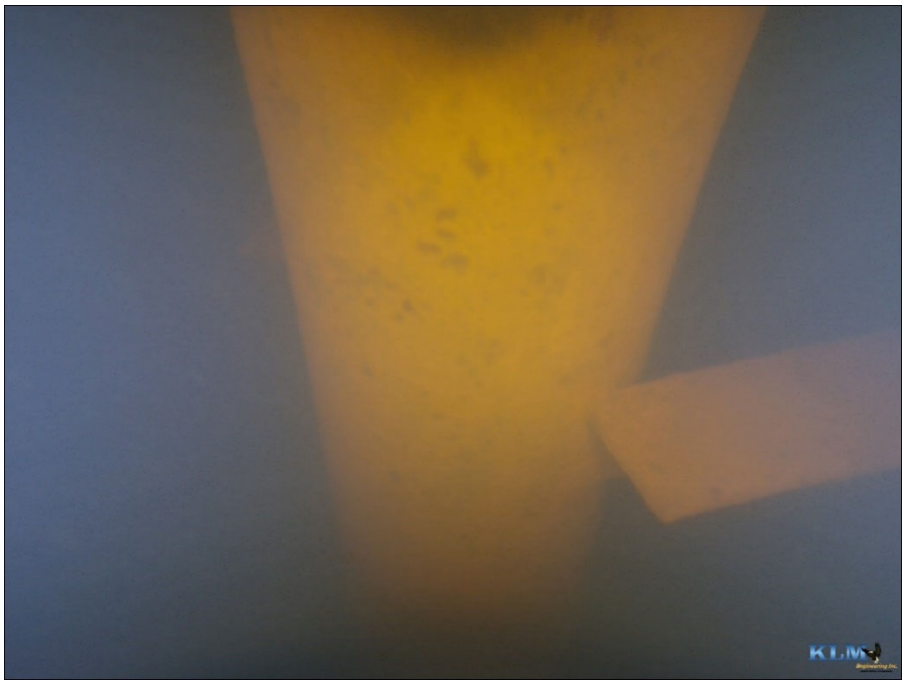


Photo No. 7
Aerator pipe with stand-off bracket

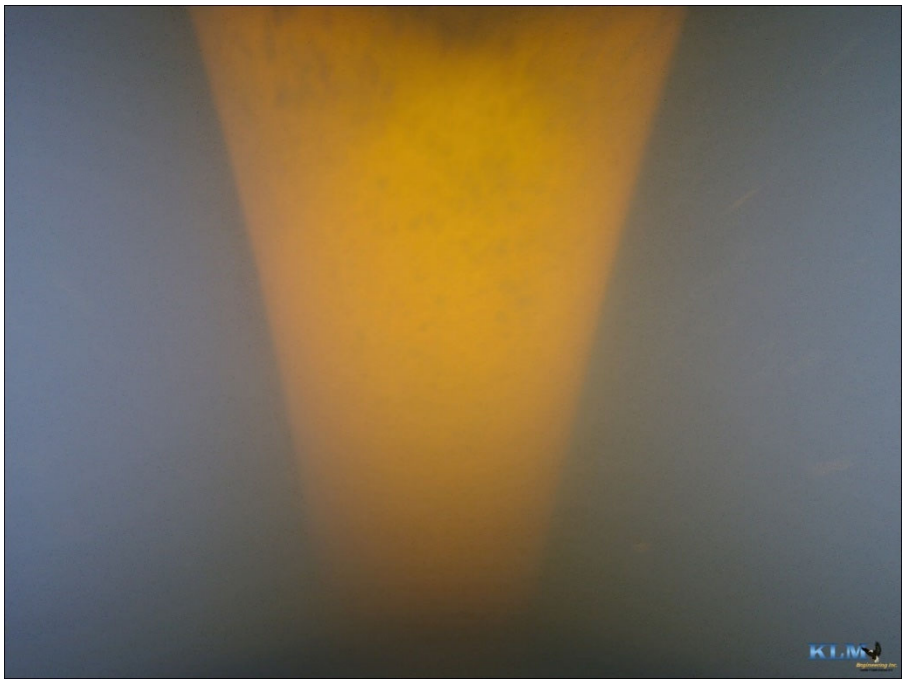


Photo No. 8
Aerator pipe

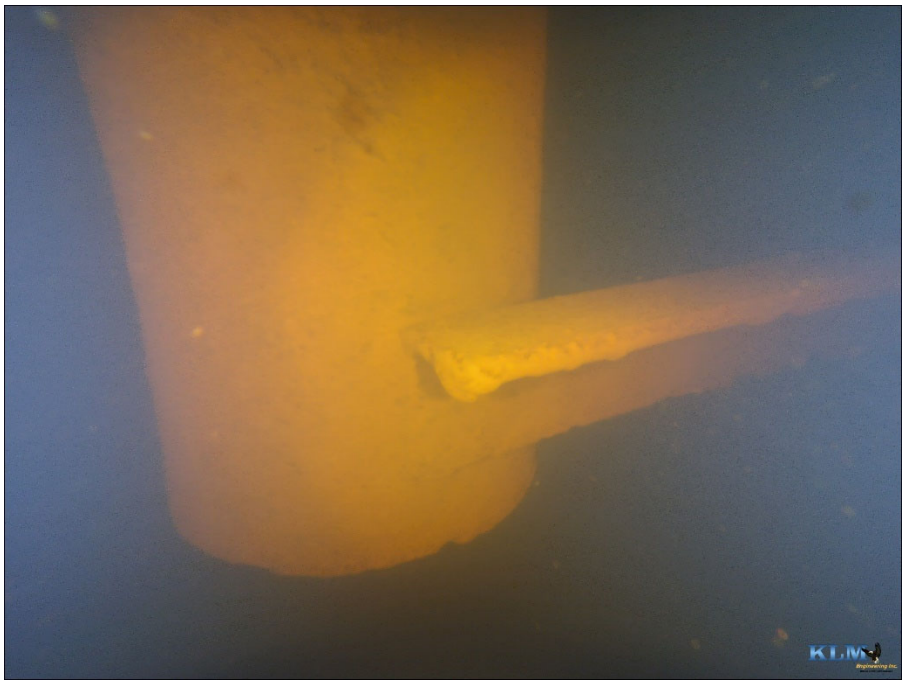


Photo No. 9
Bottom of aerator pipe

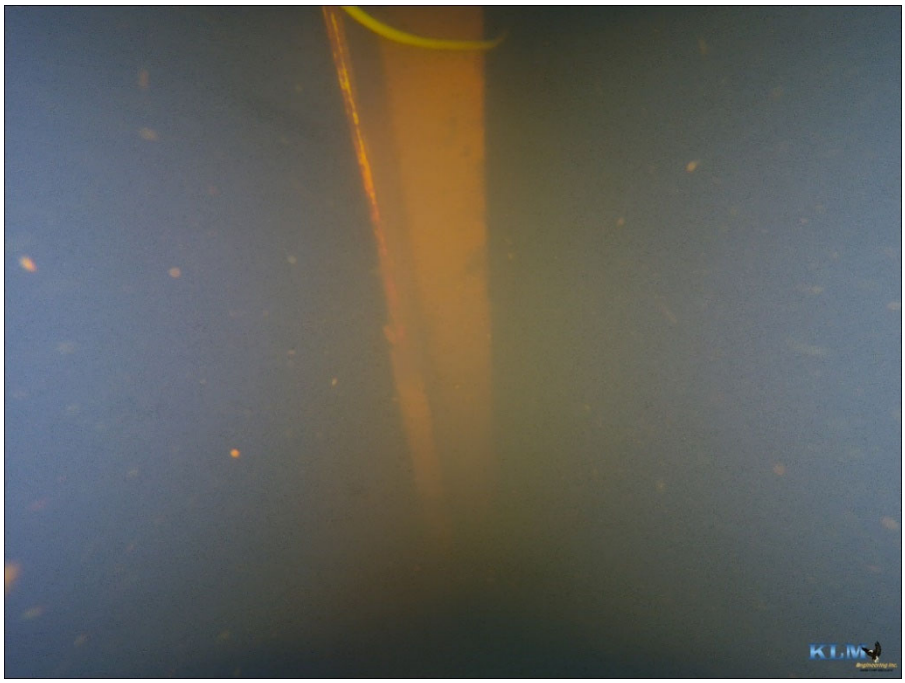


Photo No. 10
Overflow pipe

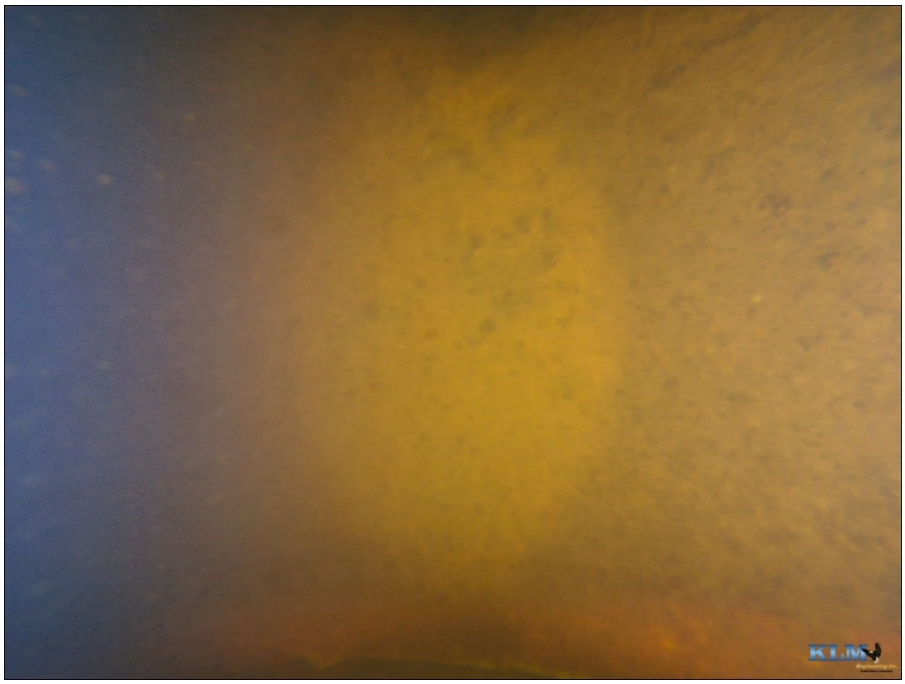


Photo No. 11
Condition of shell

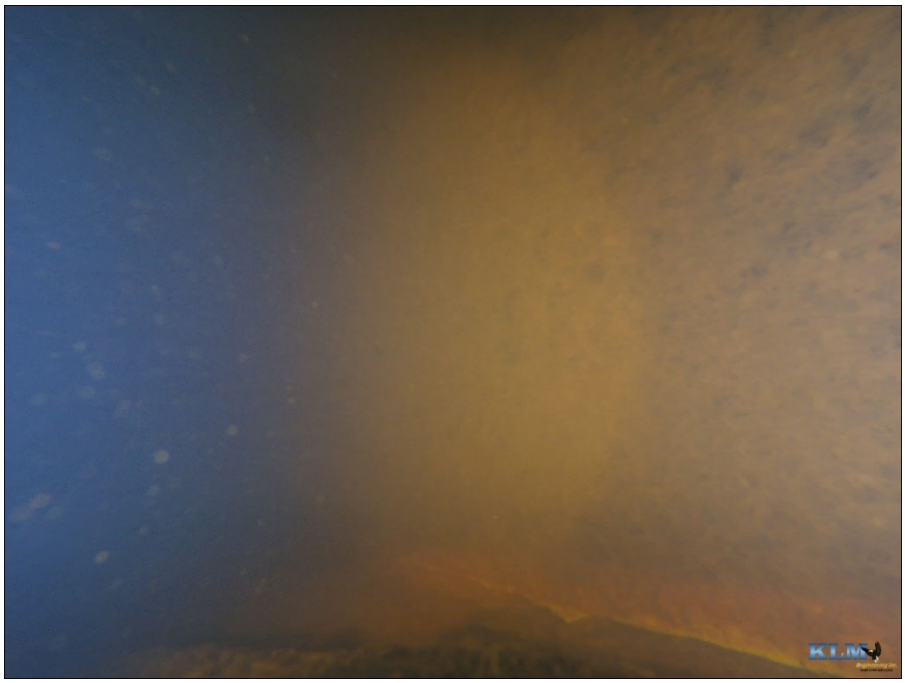


Photo No. 12
Condition of shell

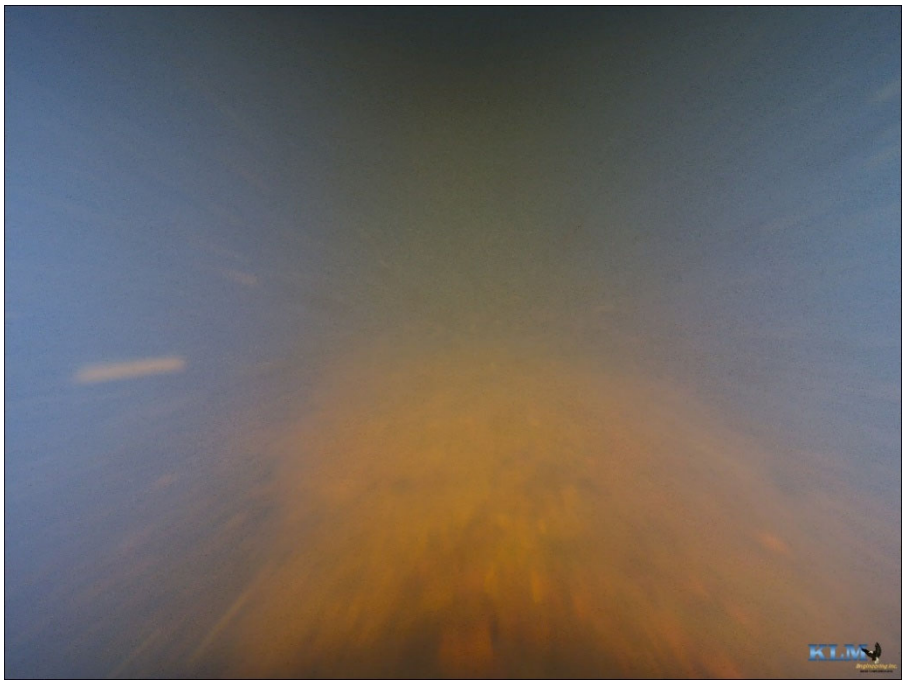


Photo No. 13
Sediment on floor

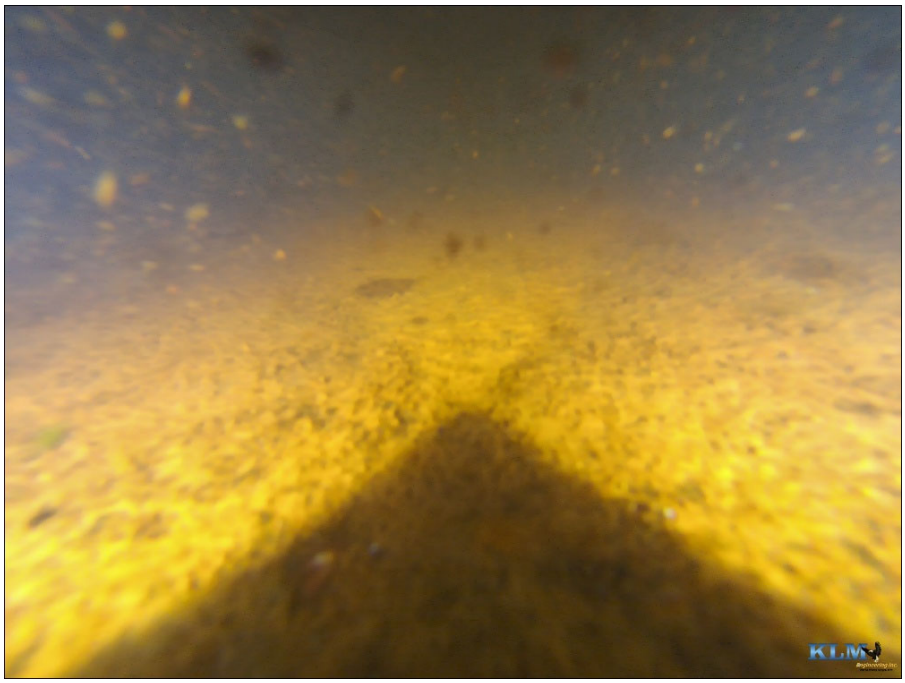


Photo No. 14
Sediment on floor

Photo No. 15
Finial vent/access manway

Photo No. 16
Corrosion on vent collar

Photo No. 17
Roof access

Photo No. 18
Roof handrailing

Photo No. 19
Aerator pipe and framing

Photo No. 20
Aerator frame and roof coating condition

Photo No. 21
Electrical disconnect

Photo No. 22
Aerator fill pipe

Photo No. 23
Roof coating condition

Photo No. 24
Roof coating condition

Photo No. 25
Shell ladder

Photo No. 26
Shell coating condition

Photo No. 27
Overall condition of shell

Photo No. 28
Shell with doorway

Photo No. 29
Overall condition of shell

Photo No. 30
Shell with doorway

Photo No. 31
Corrosion on electrical brackets

Photo No. 32
Overflow discharge

APPENDIX B

INSPECTION AND EVALUATION METHODS

1.0| INSPECTION AND EVALUATION METHODS

Some or all of the following procedures were performed as applicable.

1.1| Methods

1.1.1 The inspection of the base metal and coatings on interior and exterior surfaces included only areas accessible without scaffolding or special rigging. Where possible, the base metal and coating on the interior wet surfaces were examined from either a rubber raft while the tank was being drained, by a Remote Operated Vehicle (ROV) with the tower in service, or with both.

1.1.2 Tank plate thickness was measured at random locations on the liquid holding shell. The overall structural condition of the tank was visually examined.

1.1.3 No structural analysis was done to determine if the tank design complies with the AWWA D100-11 Standard for "Welded Carbon Steel Tanks for Water Storage." However, any observed non-conformance to the AWWA D100-11 standard is noted in this report.

1.1.4 Although compliance with OSHA regulations was not a part of this inspection, any unsafe conditions or violations of current OSHA regulation that were observed are noted in this report.

1.2| Examination and Evaluation Techniques

Some or all of the following procedures were performed as applicable.

1.2.1| Site

The tank site was evaluated for proper drainage conditions affecting access and lead paint abatement during reconditioning.

Also, the following site dimensions were obtained: distance to fence(s), power lines, owner buildings, public property, private property/buildings, school/playgrounds, public parks, and other property.

1.2.2| Foundations

The tank concrete foundation(s) were/was visually examined for cracks, spalling, conditions of grout, indications of distress/settlement, and elevation above grade.

1.2.3| Tank Plate Thickness

Plate thickness measurements were taken using ultrasonic methods (UTM). The readings were taken using a digital readout Elcometer MTG6 Ultrasonic Thickness Gage that has a dual element probe (transducer). The probe's transmitter element sends a short ultrasonic pulse through the material. The pulse gets reflected as an echo from the opposite side of the plate and returns to the probe's receiver element. The round-trip time is directly related to the material's thickness.

1.2.4| Coating Thickness

Interior and exterior coatings, where accessible, were tested in accordance with Steel Structures Painting Council SSPC-PA2-18 "Procedure for Determining Conformance to Dry Coating Thickness Requirements" using PosiTector-6000-F1 Type 2 gages.

1.2.5| Coating Adhesion

Adhesion testing of the coating to the steel, and inner coat adhesion, was performed by ASTM D-3359: Shear Adhesion Test, Measuring Adhesion by Tape Test. In addition, subjective coating adhesion evaluation was performed using a penknife.

1.2.6| Coating Serviceability

The estimated remaining coating life or serviceability evaluation was performed using a wide variety of inspection instruments such as dry film thickness gauge, pen knife, Tooke gauge, adhesion tester(s), 30x microscope and serviceability evaluation experience (minimum experience 10 years).

The instrument inspection was combined with a close visual inspection of all accessible coatings. This was done to detect any holidays (misses), skips, runs, sags, surface containments, overspray, dry spray, poor coating cohesion, inter-coat delamination, loss of adhesion to the substrate, adverse conditions of the steel underneath the coating, or any other defects affecting the intended service.

1.2.7| Coating Lead and Chromium Content Analysis

Samples may have been taken of the various types of coatings present on the interior and exterior surfaces. GPI Laboratories, Inc. of Grand Rapids, Michigan tests these coatings in conformance with ASTM D-3335 Standard Test Methods for Concentrations of Lead and Chromium in Paint.

AGENDA

Eldridge, Iowa

Inspection Report:
50,000-Gallon Capacity
Clearwell

Prepared by:

KLM Engineering, Inc.
1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
651.773.5111 | www.klmengineering.com

November 2025

Project No.: 5382-25

Table of Contents

1.0| PROJECT INFORMATION

KLM Project No.:	5382-25	**Customer P.O. Number:**	n/a
Tank Owner:	Eldridge, Iowa	**Phone:**	563-285-4841
Street/City/State/Zip:	305 North 3rd Street, Eldridge, IA 52748		
Owner Contact:	Cegan Long, Water Superintendent		
Tank Designation:	Clearwell		
Tank Description:	Buried Concrete Reservoir		
Tank Location:	505 West Donahue Street, Eldridge, IA 52748		
Capacity:	50,000 gallons		
Type of Construction:	Cast-in place Concrete	**Construction Drawings:**	Unavailable to KLM
Builder:	Unknown	**Construction Date:**	Unknown
Engineer:	Unknown	**Design Code:**	AWWA/ACI
Tank Dimensions:	Two Equal Chambers: ~10 feet x 40 feet		
Tank Height/Depth:	Overall ~8 feet		
Height to:	HWL ~7 feet LWL	Bottom of reservoir	
Purpose of Inspection:	Condition Assessment		
Date of Inspection:	October 23, 2025		
Inspected By:	Devin Severson, NACE #78234		
Type of Inspection:	KLM Standard ROV Evaluation		
Previous Inspection Records:	Unavailable to KLM		

Eldridge, Iowa

50,000–GALLON CAPACITY CLEARWELL

2.0| REFERENCES

The tank interior and exterior areas were evaluated in conformance with the following:

a. KLM Engineering, Inc. Proposal.

b. KLM "Procedures and Guidelines for Inspecting Existing Steel and Concrete Water Storage Tanks."

c. Appendix B Concrete Inspection and Evaluation Methods.

3.0| COATINGS EVALUATION AND STRUCTURE EVALUATION

Note: Hairline cracks on the interior can appear to be larger than they are due to efflorescence present and the tendency to attract sediment and biofilm. Efflorescence is due to the migration of moisture through the cracks and is not harmful.

The reservoir consists of two inner connecting chambers that are used to store potable water and are rectangular in shape with identical dimensions. Access to each chamber is achieved by a hinged aluminum hatch within the Water Treatment Facility.

Photographs of the structure areas can be found in Appendix A.

3.1| Interior Wet

3.1.1| Coating

The interior of the reservoir is uncoated concrete. Interior coating is likely unnecessary due to the good overall condition of the concrete. Concrete potable water tanks are typically not recommended to be coated unless there are concerns of degradation of the structure, water infiltration, biofilm accumulation, or difficult to clean surfaces. In non-potable storage applications, use of coating products helps protect the concrete from deterioration by corrosive gases and liquids.

The wall piping is uncoated and consists of widespread surface corrosion. Of the three well casings, one is coated, one is partially coated, and one is uncoated. Where coatings are absent, widespread surface corrosion exists.

3.1.2| Structure

a) Roof and Walls

The roof and walls are cast-in-place concrete that is in good condition. There were no observations made that might indicate the presence of structural defects, such as cracking or settlement. Minor efflorescence is present at the roof to wall connection. Minor bug holes are prevalent on some areas of the walls but there is no indication of biofilm accumulation within the holes.

b) Floor

The reservoir floor is a cast-in-place concrete slab in good visible condition. There were no observations made that might indicate the presence of structural defects, such as major cracking with exfiltration or settlement. Minor sediment is present on the floor.

3.2| Exterior

3.2.1| Coating

The reservoir is located underneath the facility and presence of a coating is unknown. The access manway hatches are constructed of aluminum on a concrete curb and are in good condition.

3.2.2| Structure

a) Roof and Walls

The structure is completely buried and cannot be analyzed without excavation. However, the roof of the structure is also the floor of the facility. There are no defects present in the facility floor to indicate pass through issues onto the roof of the reservoir.

4.0| STRUCTURE MODIFICATIONS

Structure modifications and repairs typically serve to bring the tank into compliance with OSHA regulations, ACI and AWWA standards, and Iowa DNR regulations. They also improve areas of the tank that are prone to premature development of corrosion, repair surface defects resultant from tank construction, remove abandoned and unnecessary equipment, and improve tank maintenance capabilities.

4.1| Interior Wet Modifications

4.1.1 No defects were observed, and no repairs are required. See photographs in Appendix A.

4.2| Facility Piping

4.2.1 No defects were observed, and no repairs are required. See photographs in Appendix A.

5.0| PROPERTY CONSIDERATIONS

5.1| Site and Environmental Considerations

5.1.1 The tank is located under the Water Treatment Facility. Access to the facility is obtained by a paved driveway connected to West Donahue Street.

6.0| RECONDITIONING SUMMARY

6.1| Reconditioning Summary

The reservoir is in overall good condition with no defects observed. KLM recommends inspecting the reservoir again in five years to monitor conditions, specifically the corrosion rate on the well casings. With the current conditions of the tank established from this inspection, a better understanding of the corrosion and deterioration rates can be determined with routine inspections, and recommended repair processes will be provided as necessary.

KLM ENGINEERING, INC.

Report prepared by:

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MN License No. 64141

Report reviewed by:

Rodney Ellis

Rodney Ellis
Vice President/COO
NACE Certified Coatings Inspector No. 1686
AWS/CWI 0404031

APPENDIX A

PHOTOGRAPHS

Photo No. 1
Water Treatment Facility

Photo No. 2
Access manway

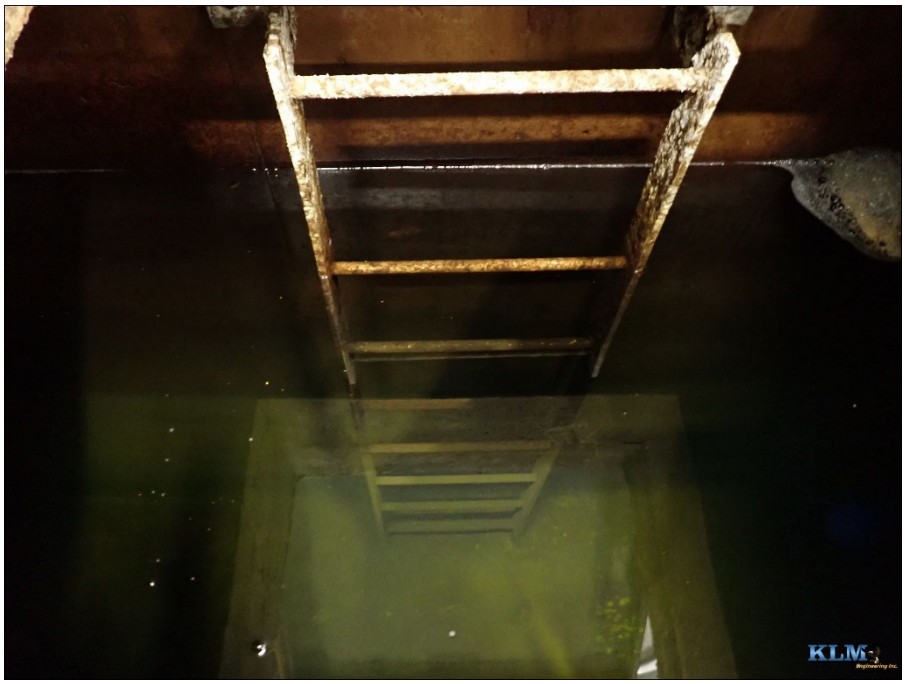

Photo No. 3
View of ladder

Photo No. 4
Floats

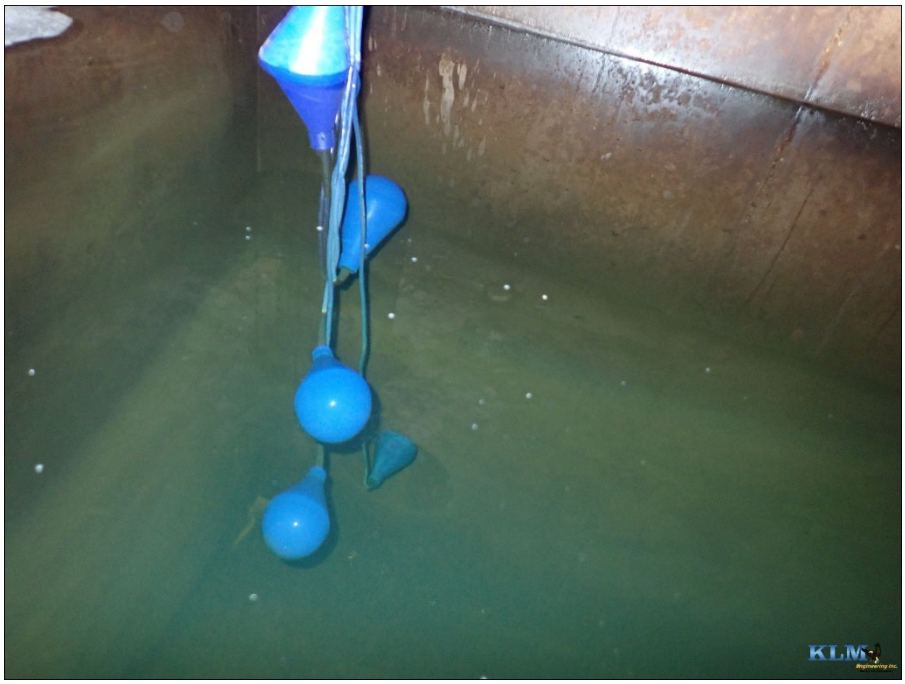

Photo No. 5
Floats

Photo No. 6
Roof and walls

Photo No. 7
Upper section of well casings

Photo No. 8
Upper section of well casings

Photo No. 9
View of piping

Photo No. 10
Upper section of ladder

Photo No. 11
Lower section of ladder

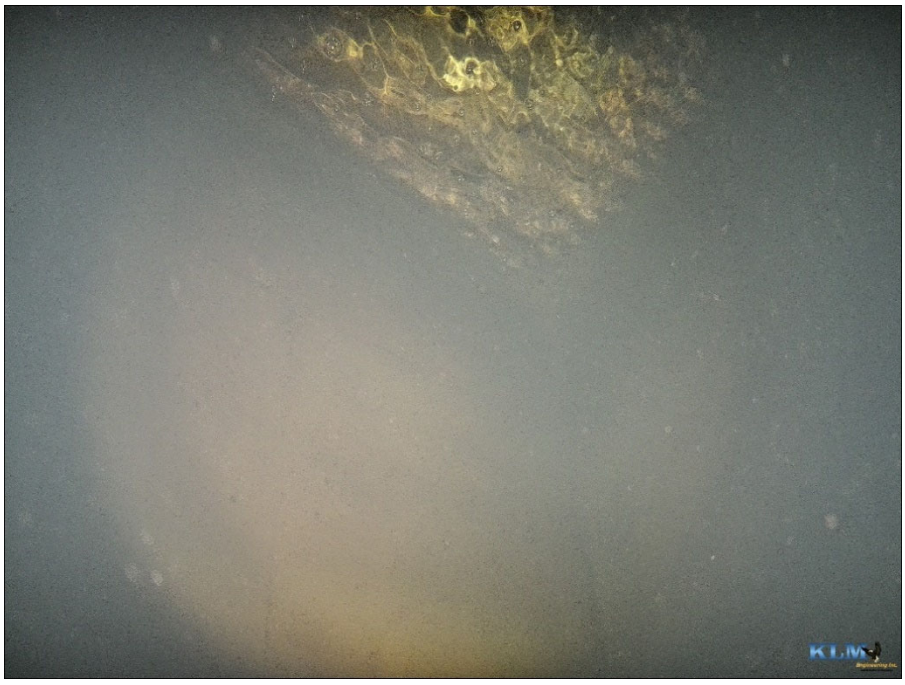

Photo No. 12
Upper section of wall

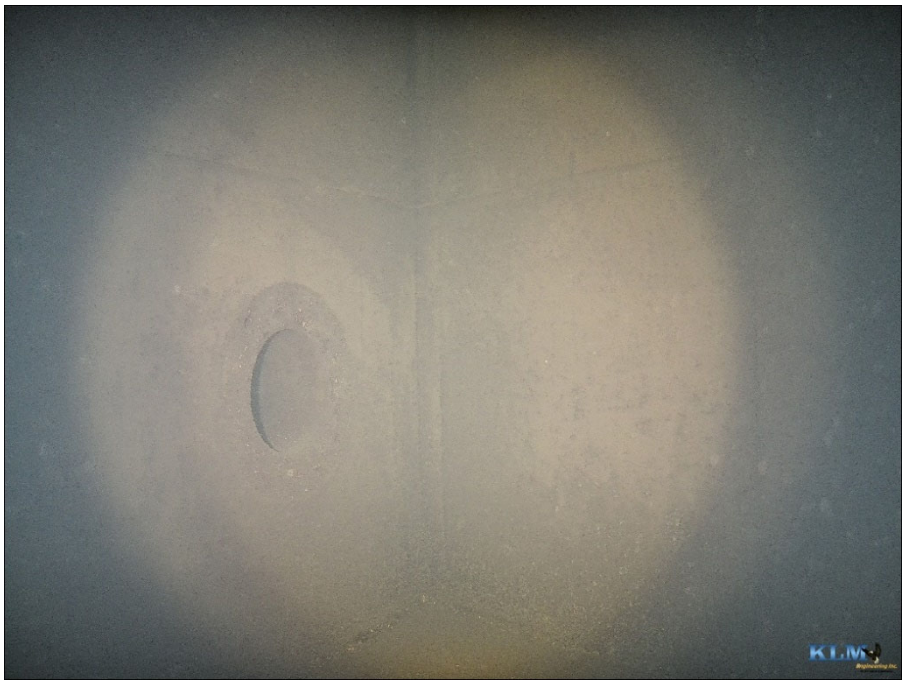

Photo No. 13
Corner joint and inner connect

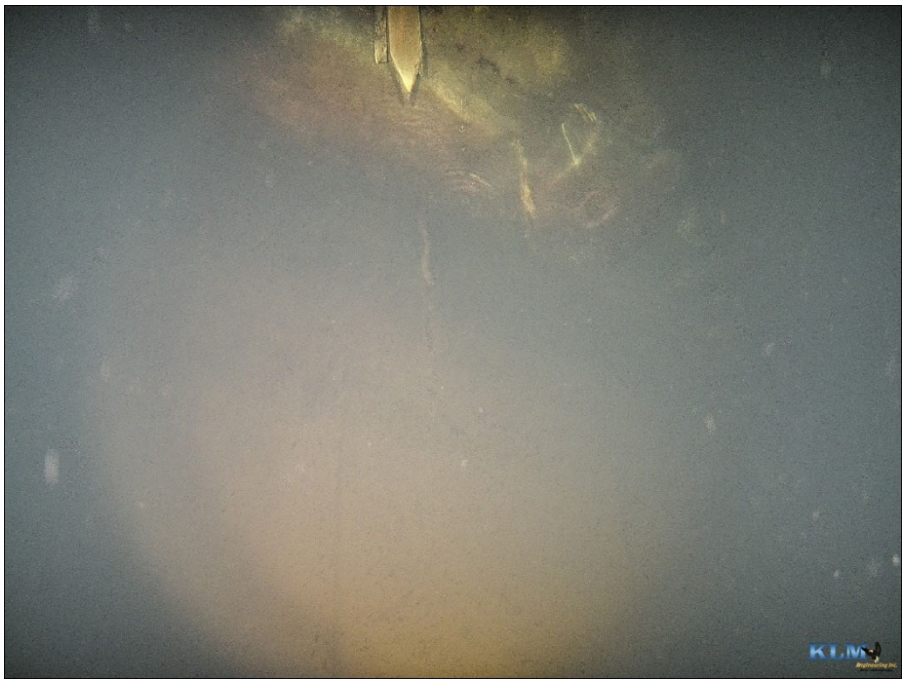

Photo No. 14
Condition of upper wall

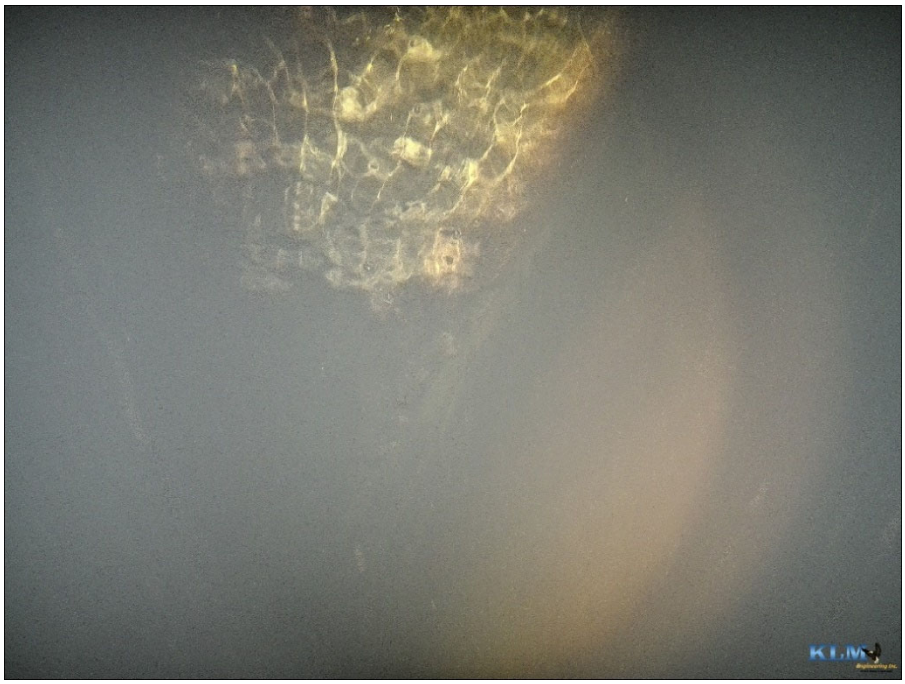

Photo No. 15
Condition of upper wall

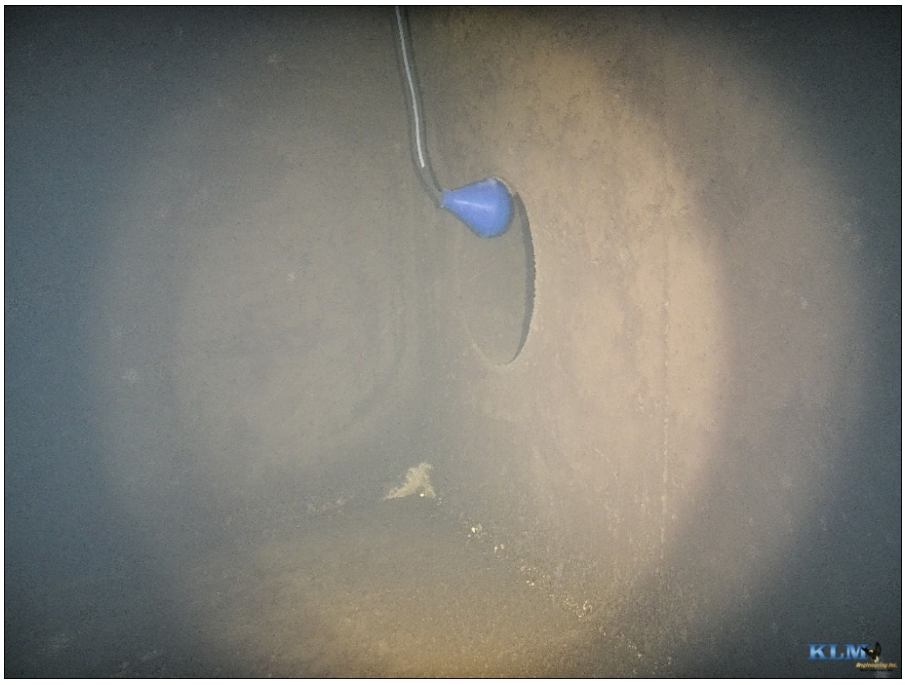

Photo No. 16
Wall conditions at corner with float level indicator and inner connect line

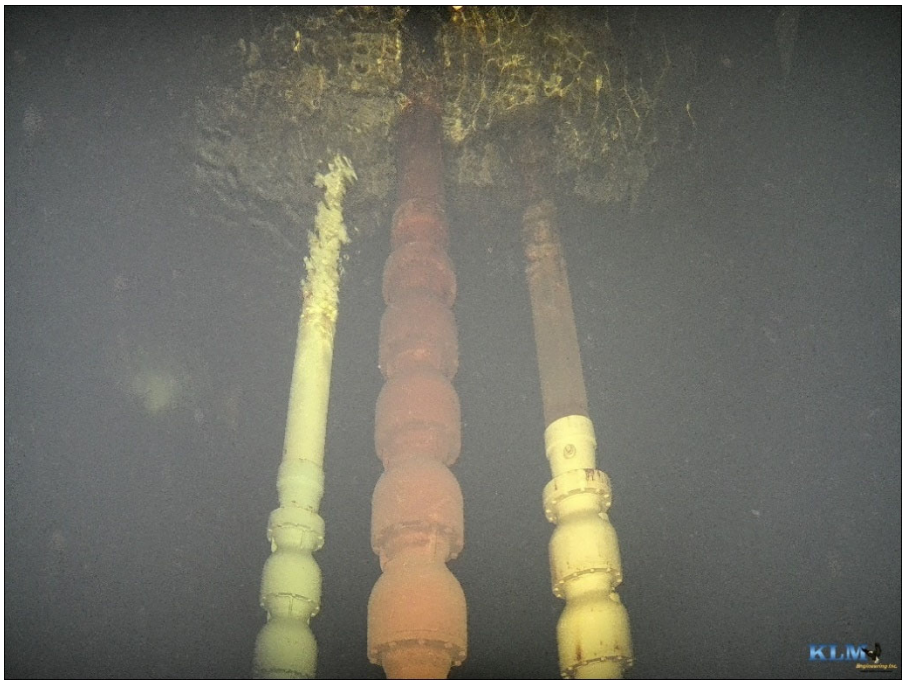

Photo No. 17
Upper section of well casings

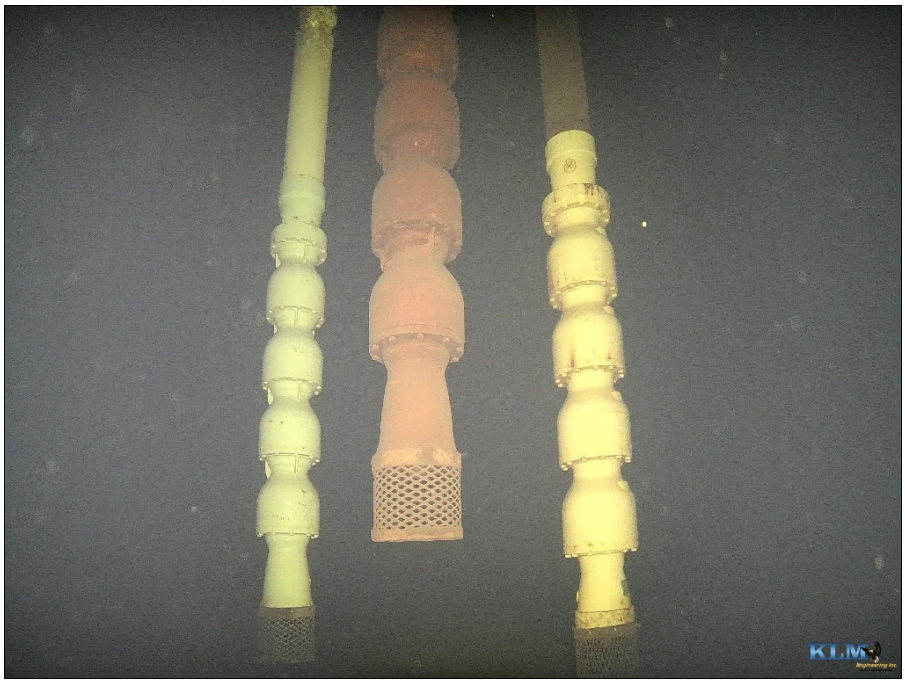

Photo No. 18
Lower section of well casings

Photo No. 19
Wall piping conditions

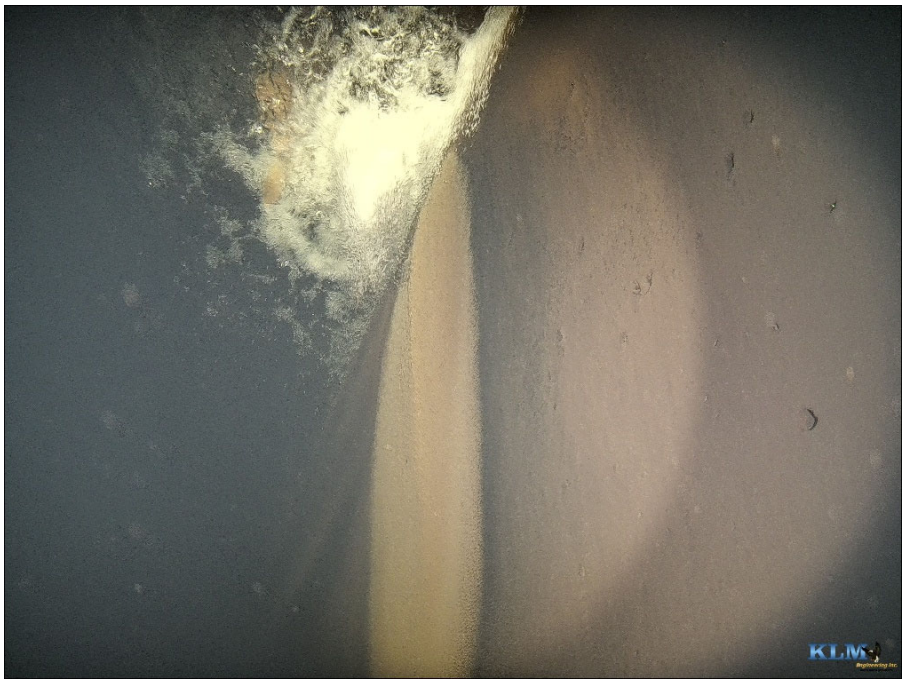

Photo No. 20
Condition of wall at inlet

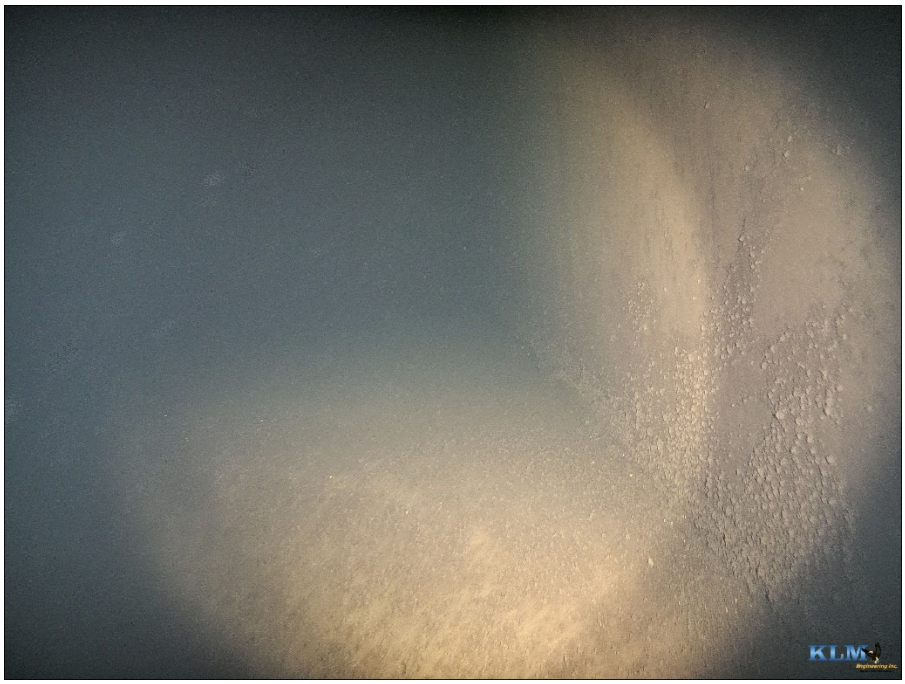

Photo No. 21
Wall to floor connection

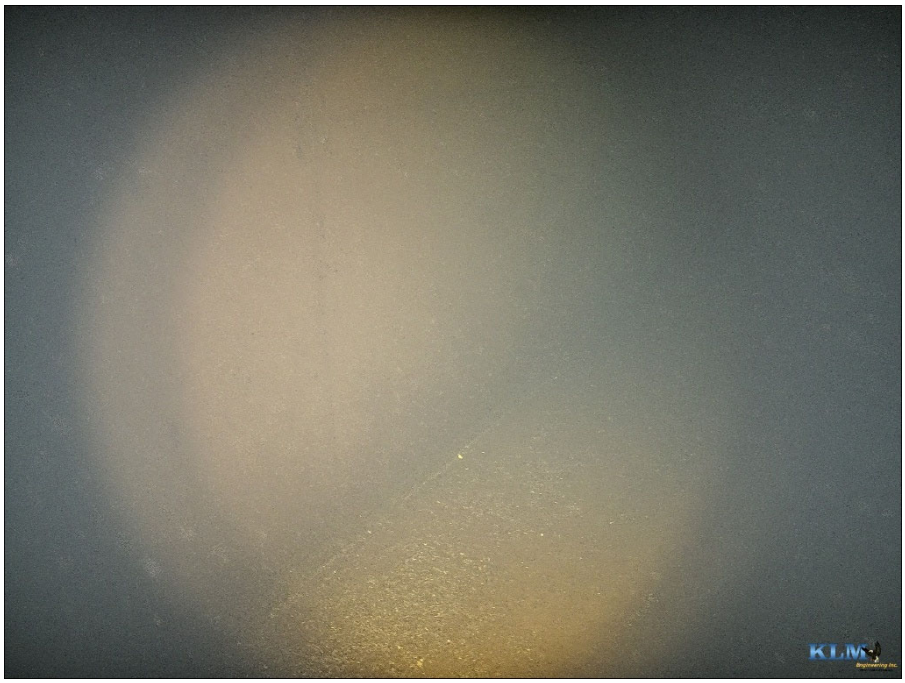

Photo No. 22
Wall to floor connection

Photo No. 23
Wall to floor connection

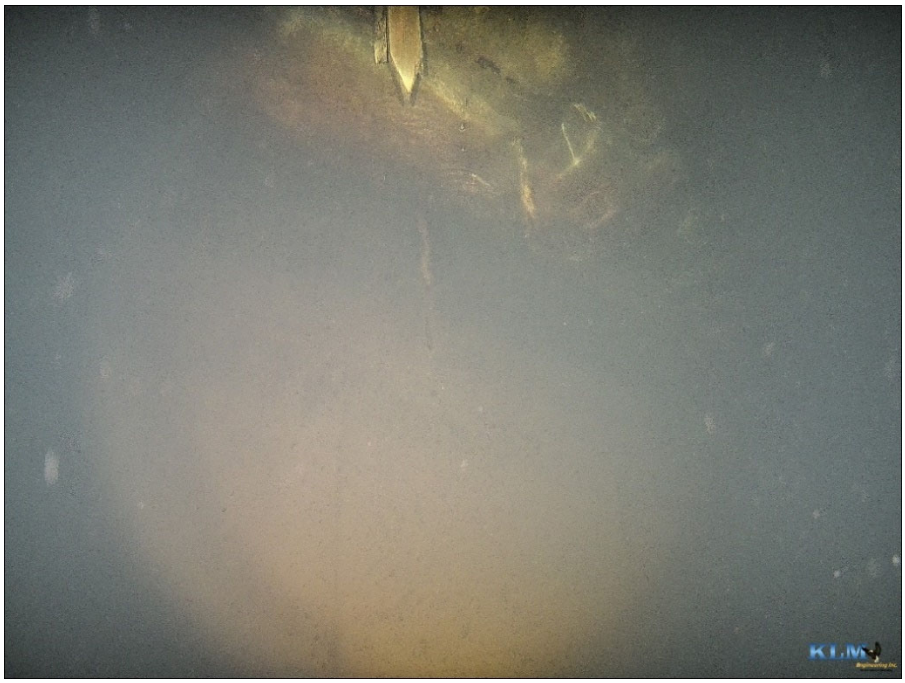

Photo No. 24
Typical condition of wall

Photo No. 25
Access manway

Photo No. 26
Roof and upper walls

Photo No. 27
Roof and well casing

Photo No. 28
Roof and upper walls

Photo No. 29
Roof and upper walls

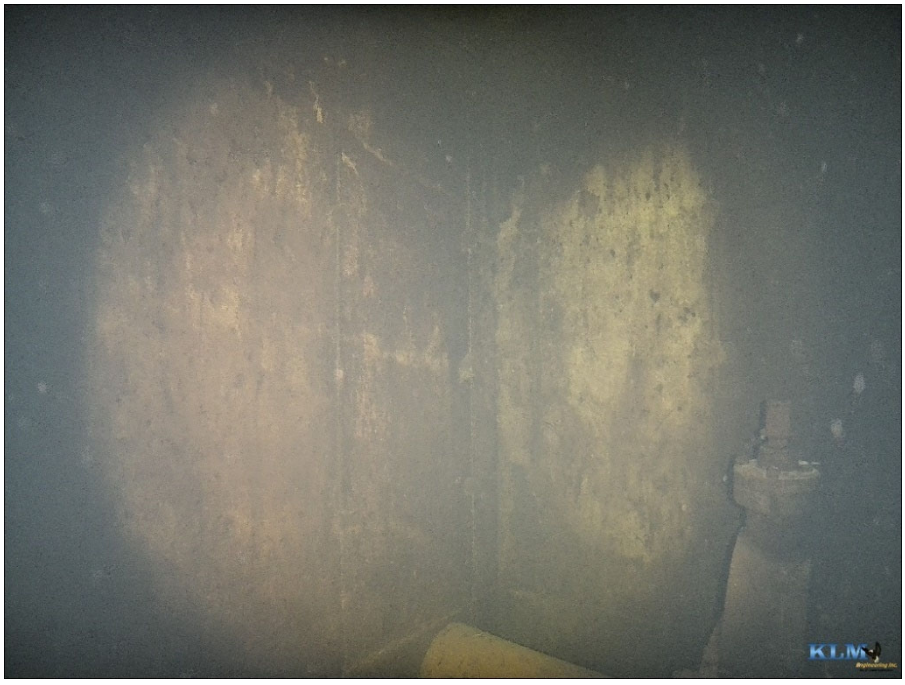

Photo No. 30
Wall conditions in adjacent chamber

Photo No. 31
Wall and piping

Photo No. 32
Condition of valve

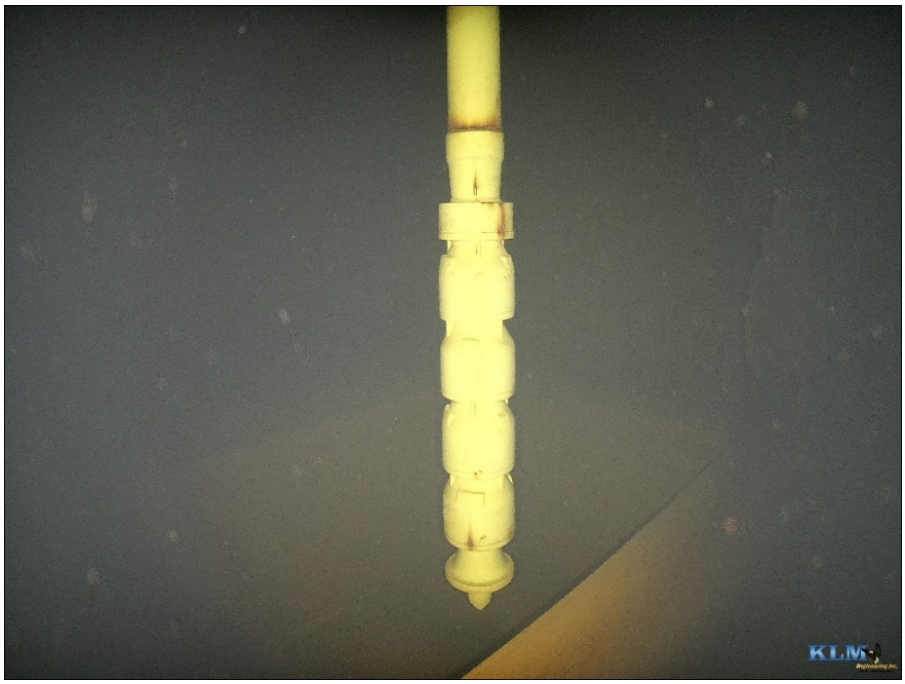

Photo No. 33
Well casing in chamber

Photo No. 34
Corner and walls to floor

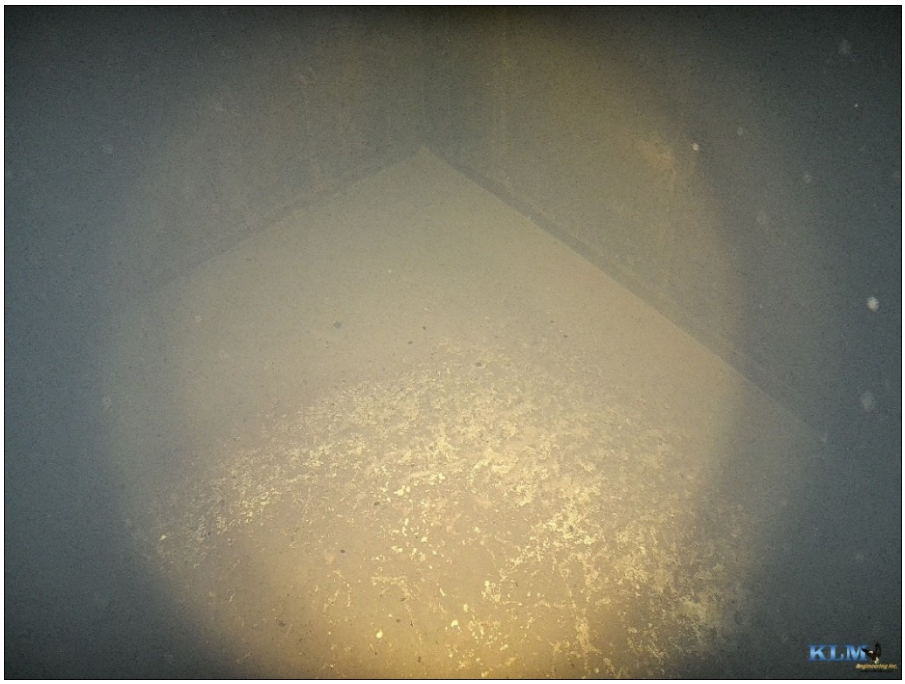

Photo No. 35
Floor condition with minor sediment

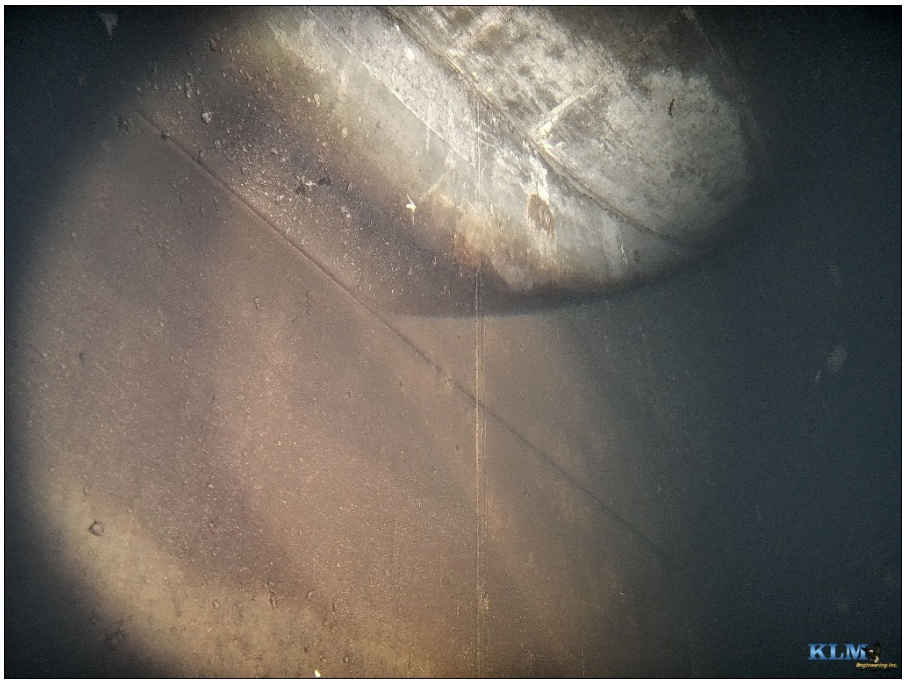

Photo No. 36
Typical condition of wall

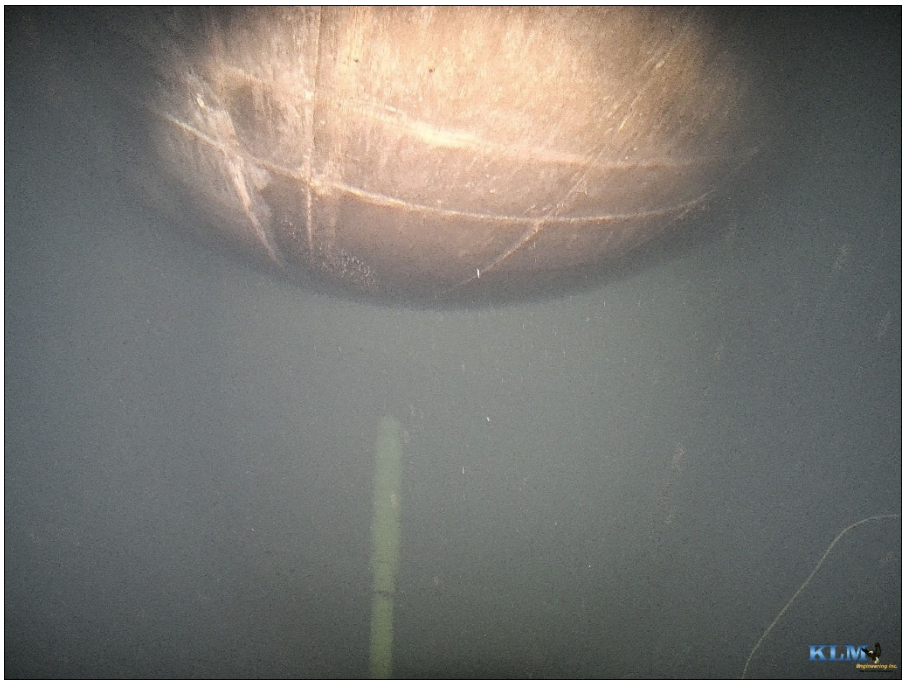

Photo No. 37
Typical condition of roof

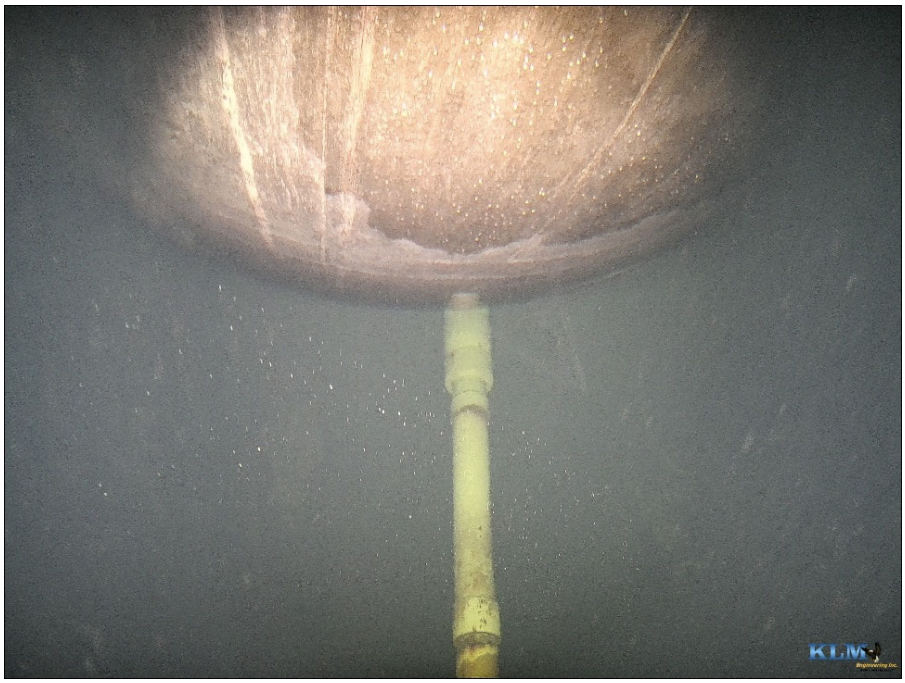

Photo No. 38
Typical condition of roof

Photo No. 39
View of access manways and piping in facility

Photo No. 40
Piping in facility

Photo No. 41
Pumps and piping in facility

Photo No. 42
Piping in facility

APPENDIX B

CONCRETE INSPECTION AND EVALUATION METHODS

1.0|INSPECTION AND EVALUATION METHODS

Some or all the following procedures were performed as applicable.

1.1|Methods

1.1.1 The inspection of the concrete and coatings (if present) on interior and exterior surfaces included only areas accessible without scaffolding or special rigging. Where possible, the concrete and coating on the interior wet surfaces were examined from either a rubber raft while the reservoir was being drained, by a Remote Operated Vehicle (ROV) with the reservoir in service, or with both.

1.1.2 Reservoir concrete conditions including cracking and spalling were measured where accessible. The overall structural condition of the reservoir was visually examined per ACI 201.1R-2.

1.1.3 No structural analysis was done to determine if the reservoir design complies with the ACI Standard 318 for “Building Code Requirements for Reinforced Concrete.” However, any observed non-conformance to the ACI Standard is noted in this report.

1.1.4 Although compliance with OSHA regulations was not a part of this inspection, any unsafe conditions or violations of current OSHA regulation that were observed are noted in this report.

1.2|Examination and Evaluation Techniques

Some or all the following procedures were performed as applicable.

1.2.1|Site

The reservoir site was evaluated for proper drainage conditions and access to vents, manways and overflow pipe discharges.

Also, the following site dimensions were obtained: distance to fence(s), power lines, owner buildings, public property, private property/buildings, school/playgrounds, public parks, and other property.

1.2.2|Shell and Roof

The exterior reservoir concrete shell and roof were visually examined where accessible for OSHA, AWWA and State code compliances. Conditions of grout and/or caulk at shell to roof joint, indications of distress/settlement, and elevation of roof above or below grade is noted in this report.

1.2.3|Concrete Condition

All visible exterior and interior concrete reservoir components including the roof, shell, floor, columns, pilasters and baffle walls were inspected as follows. Concrete surface conditions are visually inspected for bugholes, honeycombing, cracking, surface deterioration and spalling. The size, type and orientation of cracks (i.e., horizontal, vertical, diagonal, shrinkage, etc.), the presence of efflorescence and exposed reinforcement steel are included in the inspection and noted in the evaluation.

1.2.4|Coating Thickness

Interior and exterior coatings, where accessible and if present, were tested by destructive testing removing a sample of the coating with a knife or other instrument and measuring the thickness with a gauge.

1.2.5|Coating Serviceability

The estimated remaining coating life or serviceability evaluation, where accessible and if present, was performed using a wide variety of inspection instruments such as dry film thickness gauge, pen knife, Tooke gauge, adhesion tester(s), 30x microscope and serviceability evaluation experience (minimum experience 10 years).

The instrument inspection was combined with a close visual inspection of all the interior coating's accessible areas. This was done to detect any holidays (misses), skips, runs, sags, surface containments, overspray, dry spray, poor coating cohesion, inter-coat delamination, loss of adhesion to the substrate, adverse conditions of the concrete underneath the coating, or any other defects affecting the intended service.