

Meeting Date: May 21, 2025 Staff Contact: Jon Ebia, Electrical Engineer

TITLE: C-25-11 – Approval of Contract with Wunderlich Malec Systems Inc.

for ControlNet & PLC Upgrades

ACTION: Recommend Approval

SUMMARY:

Requesting approval for the purchase of Supervisory Control And Data Acquisition (SCADA) control system engineering services in the amount of \$1,074,439.00. Wunderlich-Malec (WM) is providing a proposal to the Albuquerque Bernalillo Water Utility Authority (ABCWUA) to provide Surface Water Treatment Plant (SWTP) SCADA system engineering services to replace the SWTP SCADA field Programmable Logic computers' (PLC) peer-to peer communication network. These PLCs, as part of the SCADA system, monitor and control SWTP equipment and send information to the SCADA Control Room Operator workstations. The PLC peer-to-peer network will be converted from current proprietary ControlNet protocol to Ethernet protocol. The local ControlNet Human Machine Interface Display (HMI) at each PLC will also be upgraded to an Ethernet protocol HMI display. All this will be done through the issuance of a purchase order.

The existing control system at the SWTP is operating with aging technology associated with the peer-to-peer communications between 25 PLCs. The existing system, referred to as ControlNet, has been subject to frequent failures over the last 12 months and requires replacement. The overall SCADA Master Plan included provisions for the replacement of the ControlNet system with a modern Ethernet based peer-to-peer network. The purchase of these goods and services will directly improve the reliability of the SWTP.

This contract will be procured pursuant to the authority contained in section 17(a)(1) of the Rules Governing Procurement for the Albuquerque Bernalillo County Water Utility Authority. Resolution R-18-14 requires board approval for any purchase in an amount exceeding \$500,000.

If approved by the Board, a purchase order will be executed between the Water Authority and Wunderlich-Malec for these services. Approval of this item shall also serve as delegation of authority for the Executive Director to approve all future amendments to this purchase, if any.

FISCAL IMPACT:

The approval of \$1,074,439.00 is inclusive of parts, freight, and New Mexico gross receipt tax. The Water Authority has budgeted funds to cover this agreement.

PO Box 568 Albuquerque, NM 87103-0568 505-289-3100 www.abcwua.org

SOLE SOURCE PURCHASE REPORT

To: Purchasing Officer

From: Jon Ebia Date: 4/23/2025

1. Name and address and contact information of supplier:

Wunderlich-Malec 8804 Washington St. NE Suite B Albuquerque, NM 87713

POC: Sebastian Rabo

email: Sebastian.rabo@wmeng.com

Tel: (505)-856-6600 ext. 102 Cell: (505)-991-3017

2. Goods and/or services to be purchased:

The services and goods to be purchased include:

- Purchase of Rockwell Automation hardware related to the ControlNet and PLC Upgrades at SWTP
- Modification to existing PLC programs to accomplish the modifications to PLC peer to peer communications
- Modifications to existing PLC programs to upgrade PLCs to latest hardware version.
- System testing, training, and documentation.
- 3. Estimated total dollar amount of expenditures pursuant to this request: \$998,317 w/o NMGRT (\$1,074,439 with NMGRT)
- 4. Term for which goods and/or services will be purchased pursuant to this request (mark only the option which applies):

a.	\boxtimes	24	Years/Months/Weeks/Days	s (circle one)	
b.		This is a one-time sole	source purchase, to be com	pleted within the next fiscal y	ear.

- 5. Identify the specific circumstances that require a sole source purchase of the goods and/or services requested:
 - a. Brief description of the purpose of the goods or services to be purchased:

The existing control system at the Surface Water Treatment Plant (SWTP) is operating with aging technology associated with the peer-to-peer communications between Programmable Logic Controllers. The existing system, referred to as ControlNet, has been subject to frequent failures over the last 12 months and requires replacement. The overall SCADA Master Plan included provisions for the replacement of the ControlNet system with a modern Ethernet based peer-to-peer network. The purchase of these goods and services will directly improve the reliability of the SWTP.

b. Reasons for need of goods and/or services from the specific supplier. Any one reason, by itself, does not necessarily justify a sole source purchase (mark all that apply):

SOLE SOURCE PURCHASE REPORT

İ.	A diligent inquiry failed to identify any source for the same or similar goods and/or services
	that will substantially accomplish the same or similar functions to those provided by the source
	identified above. If so, identify which of the following steps were taken to establish a good-
	faith review of available alternative sources and provide written justification verifying the
	actions below were taken (mark all that apply):

- 1. Contacted various suppliers of similar goods to discuss alternative options;
- 2. Performed product research for potential alternative sources;
- Consulted with subject matter experts to identify potential alternative sources;
- 4. Other (specifically describe any actions taken, attach additional sheets if necessary):

The services associated with this work are a continuation of the services being provided under the ABCWUA Collections and Stormwater PLC Upgrade project. A structured proposal, evaluation and selection process was used to select Wunderlich Malec as the most qualified System Integrator to supply and implement this system.

The evaluation included the use of a formal Request for Proposal (RFP), developed by the Water *Authority's SCADA Consultant, EMA, Inc.* The Water Authority received 3 proposals from qualified System Integration firms, all of which were responsive to the RFP requirements. The 3 responses were reviewed by an independent selection committee and Wunderlich Malec was selected as providing the best value to ABCWUA.

(Inability to locate other sources via internet search will not suffice as acceptable due diligence.)

- ii. The goods and/or services offered are unique or proprietary in form, fit, and function. If so, describe the unique or proprietary qualities of the goods and/or services; if available, provide documentation of their unique or proprietary nature, e.g. evidence of patent/copyright/secret processes/limited rights in data (attach additional sheets if necessary):
- iii. Solution Use of goods and/or services from sources other than an Original Equipment Manufacturer will require substantial modification to equipment or systems currently in use, resulting in substantial duplication in cost to the Water Authority that is not expected to be recovered through competition and/or unacceptable delays in fulfilling the Water Authority's requirements. If so, describe the modifications, potential costs, and/or delays associated with making substitute goods and/or services compatible with current equipment or systems (attach additional sheets if necessary):

The hardware platform in use at SWTP is the Water Authority standard. There are no alternatives to provide the peer-to-peer communications within the Water Authority Standards. Deviating from this standard would require significant modifications to the SWTP control system, impacting operations and requiring higher maintenance costs for the system. This deviation would also require a major redesign, potentially delaying the project by up to a year and compelling the Water Authority to continue operating a system prone to frequent failures, which could result in multiple plant shutdowns.

SOLE SOURCE PURCHASE REPORT

	 In a procurement requires a specific supplier of goods or services. If so, identify one or more of the following reasons and provide written justification verifying that the statement below is true: Limited availability of goods or services; Proven quality, accuracy, and/or dependability; Compatibility considerations; Safety considerations; Warranty issues or guarantee of parts performance; During the system design process, several alternatives were evaluated and the current proprietary process was selected; Other (specifically describe any other reasons, attach additional sheets if necessary):
	See Item 5.b.i above describing the selection process.
	Wunderlich Malec is very familiar with the Water Authority hardware and PLC programming standards. Their work on the Collections and Stormwater PLC replacement project has been excellent quality. Additionally, Wunderlich Malec has worked closely with the Water Authority team in troubleshooting and repair of the ControlNet system at SWTP that caused a 12-day outage in April 2025, giving them excellent knowledge of the existing systems, which will directly benefit this work.
	v. The goods and/or services cannot be purchased by the Water Authority from any other supplier, e.g. the supplier has a protected territory established by the original producer of the goods or services. If so, attach written documentation from the original producer verifying the availability of sources for goods and/or services.
6.	Describe the reasons the purchase is in the public's interest (attach additional sheets if necessary):
	A reliable plant control system for SWTP is critical for plant operations. The aging ControlNet hardware requires replacement to sustain a reliable control system. The specified hardware and associated programming work are aligned with the Water <i>Authority's</i> SCADA master plan, whose goal is to implement a consistent, highly reliable enterprise-wide SCADA system.
	Recent failures in the ControlNet system at SWTP have resulted in extended outages at the plant, where the SWTP cannot produce potable water. Given the permit limitations in place for the SWTP, it is critical that the plant be operational during periods where surface water is available for treatment. The replacement of the ControlNet hardware with modern Ethernet based hardware will restore the needed reliability of the plant control system at SWTP. Using a firm other than Wunderlich Malec for this project would extend the timeline and increase risks and costs due to their unfamiliarity with the plant's ControlNet networks and Water Authority standards.

7. Attach negotiated cost or fee schedule, as applicable, along with evidence confirming that the price is most advantageous to the Water Authority.

The attached negotiated cost, as reflected on the bid schedule, provides the most advantageous price to the Water Authority. The costs are in-line with other cost proposals for similar work for the Water Authority, and the costs align with the construction cost estimate provided by the design consultant, EMA, Inc.

Requirement:

SOLE SOURCE PURCHASE REPORT

At least fifteen days before a sole source contract is awarded, the Central Purchasing Office shall post this notice of intent to award any sole source contracts for goods, services, or construction, on its website.

Any qualified potential contractor may protest an intent to award a sole source procurement to the Central Purchasing Office. The protest shall be submitted in writing within fifteen calendar days of the notice of intent to award a contract being posted by the Central Purchasing Office.

The signature below certifies that this justification is accurate and complete to the best knowledge and belief of the individuals signing:

Requestor's Signature:	
Title: Chief Engineer	4/29/25 12:12 MDT Date
Signature Acknowledgement from the D	Division Manager:
Cody R Stinson	_4/29/25 12:16 MDT
Division Manager	Date
Review and Verification by Purchasing	Officer:
	4/29/25 12:44 MDT
Purchasing Officer	Date



Proposal for

Albuquerque/Bernalillo County Water Utility Authority

Project

ABCWUA, ControlNet & PLC Upgrades

Prepared by

Sebastian Rabo

Wunderlich-Malec 8804 Washington St NE, Suite B Albuquerque, NM 87113 Phone: (505) 991-3017

Email: sebastian.rabo@wmeng.com

Proposal # 8125518 Rev #1

April 22, 2025



Albuquerque/Bernalillo County Water Utility Authority ABCWUA, ControlNet & PLC Upgrades

Table of Contents

A.	Scope of Work	3
В.	Schedule and Milestones	5
C.	Clarifications	6
D.	Pricing Notes	7
E.	Project Approach	7
F.	Closing Remarks	8
G.	Bid Form	9
Н.	Bid Bond / Insurance	15
I.	Project Profiles	16



Sebastian Rabo Wunderlich-Malec 8804 Washington St NE, Suite B Albuguerque, NM 87113

April 22, 2025

Jon Ebia Albuquerque/Bernalillo County Water Utility Authority PO Box 568 Albuquerque, 87103

Subject: Proposal 8125518 - ABCWUA, ControlNet & PLC Upgrades R1

Jon:

Wunderlich-Malec (WM) is providing this proposal to the Albuquerque Bernalillo Water Utility Authority (ABCWUA) to provide control system engineering services in order to replace ControlNet and PLC infrastructure and HMI's for the SWTP control system with new Ethernet enabled equipment and software.

This proposal is in response to the ABCWUA/EMA RFP dated March 2025

WM has a strong history of providing a wide range of engineering services in the Water and Waste Water utility industry. These services include development and creation of electrical design, procurement and construction of control panels; PLC programming; SCADA/HMI programming; specification, procurement and configuration; FAT; SAT; commissioning, qualification support and control system validation.

WM looks forward to working with the ABCWUA/EMA team

A. Scope of Work

1. Engineering:

- a. Recreate the existing Panelview HMI software for legacy Panelviews with PV5000 equivalents.
 - 1. UP-25 (5)
 - 2. UP-75 (2)
 - 3. RWPS (3)
- Modify the PLC programming to replace the ControlNet communications with Ethernet/IP communications
 - 1. All main SWTP PLC's (15). WM will configure all Plant Ring Ethernet Switches; others will configure local networking at UP-30.
 - 2. RWPS (3)
- c. Modify the PLC programming to add Panelview 5000 alarms

Page 3



- 1. UP-25
- 2. UP-75
- 3. RWPS
- d. Convert the main SWTP& RWPS PLC's from L5x to L81E equivalents
- e. Retrofit existing PLC panels as shown on the design drawings
 - 1. Replace old CPU's with new CPU's
 - 2. Replace ControlNet modules with Ethernet modules
 - 3. Add redundant power supplies for all new switches and for the existing Cisco IE3400 switch located in the RWPS-W panel
 - 4. Add non redundant power supplies for unmanaged switches where needed
 - 5. Modify panel openings for new Panelviews and install the new Panelviews
 - 6. Demo all existing ControlNet equipment
- f. Perform the following work at UP-65 (Dewatering)
 - 1. Retrofit existing CompactLogic PLC with a new ControlLogix PLC
 - 2. Install a new SCADA Cisco IE3400 managed switch (configured by ABCWUA)
 - 3. Retest all I/O and functionality of the Dewatering facility
- g. Configure, test and install (2) new radios at RWPS
- h. Configure test and install (2) new Prosoft EIP/DF1 gateways at RWPS
- Configure, test and install (8) new Cisco IE3400 managed switches configured in a fiber Device Level Ring (DLR)
- j. Configure, test and install (5) new unmanaged switches
- k. Utilize spare Multi-Mode fibers to create new Ethernet plant ring
- I. Install new fiber jumpers to connect new ring to new managed Ethernet switches
- m. Fiber test reports will be provided for each fiber segment
- Develop Factory Acceptance Test (FAT) documentation for all modified PLC's and networks and perform FAT's in the WM ABQ office
- Develop Site Acceptance Test (SAT) documentation Perform for all modified PLC's and networks and perform SAT's onsite with ABCWUA personnel to ensure proper operation of the new infrastructure



2. Equipment (including spares):

- a. (20) A-B, 1756-L81E ControlLogix CPU
- b. (33) A-B, 1756-EN2T ControlLogix Ethernet Module
- c. (11) A-B, Panelview 5510 2715P-T10CD
- d. (3) Prosoft, PLX51-DF1-ENI Gateway
- e. (6) Phoenix Contact, 1085171 Ethernet Switch
- f. (16) Phoenix Contact, 2891767 Fiber Transceiver SFP
- g. (3) MDS, Orbit ECRL9CNNNNNS1S1USUNNN licensed 900MHz radio
- h. (12) Phoenix Contact redundant 24VDC power supplies for new managed Ethernet switches
- (7) Phoenix Contact non-redundant 24VDC power supplies for new unmanaged Ethernet switches at SWTP & RWPS
- j. (2) Phoenix Contact non-redundant 24VDC power supplies for UP-25 120VAC Panelview replacements
- k. (1) A-B, Redundant ControlLogix Power Supplies (Dewatering)
- I. (1) A-B, ControlLogix Analog Input Module (Dewatering)
- m. (2) A-B, Digital Input Modules (Dewatering)
- n. (1) A-B, ControlLogix Digital Output Module (Dewatering)
- o. (1) A-B, ControlLogix 10 Slot Chassis (Dewatering)

B. Schedule and Milestones

This project is expected to be completed by December 31, 2025, WM assumes a notice to proceed will be issued on or by June 1, 2025



C. Clarifications

- 1. This quote is valid for 30 days
- 2. All PLC code will be translated as-is including messaging method except for converting from ControlNet communications to Ethernet communications
- 3. As-built drawing will be provided for the Dewatering facility, as-builts of other existing PLC panels is not included
- 4. WM is providing LOI& PLC programming, SCADA programming is by others.
- 5. WM is providing the new Dewatering managed Ethernet switch to be configured by ABCWUA
- 6. An I/O list will be provided for the Dewatering PLC only
- 7. A complete SAT will be performed on the Dewatering PLC
- 8. A partial SAT will be performed on other existing PLC's:
 - a. Ethernet communications will be completely tested
 - b. One I/O point from each PLC I/O module will be loop checked
 - c. WM will work with ABCWUA to verify that all functional operations work as prior to any cutovers
- 9. All SCADA networking, testing and programming is excluded
- 10. Three unmanaged switches are anticipated to be deleted from the design at UP-40, UP-50& UP-70
- 11. ABCWUA will provide all new IP addresses to be configured by WM
- 12. All existing PLC programs will retain current functionality and SCADA mapping
- 13. If fiber testing results in inadequate performance a change order will be requested to install and test new fiber.
- 14. We assume no major changes to the Dewatering PLC will be needed and the majority of the existing code will be re-used when converting the CompactLogix to a L81 ControlLogix
- 15. No training is being provided
- 16. Mutually acceptable terms for liquidated damages will be negotiated prior to contract award
- 17. Hardware pricing is subject to change based on Tariffs. WM reserves the right to make pricing adjustments based on tariff status at the time of project award.
- 18. WM assumes General Terms and Conditions will align with existing ABCWUA Collections project (PO#: CE002113)
- 19. A budget of \$2,000 for each PLC panel (24) has been include, for a total \$48,000 for unforeseen conditions



20. New Mexico Gross Receipts Tax (NMGRT) has been included at the current tax rate (7.625%), for a total \$78,158. This may be adjusted if the NMGRT rate changes during the life of the project.

D. Pricing Notes

This proposal is based on a lump sum basis.

E. Project Approach

A multi-phased approach is being developed in order to provide the most efficient cut over sequencing as possible.

Phase I – Submittals/Equipment Procurement: Immediately after contract award submittals will be prepared for all provided hardware components. After successful submittal approvals equipment procurement will commence. Currently the main components are not showing long lead times, but this is subject to change

Phase II – Preparing for new Ethernet plant ring installation: Power supplies and managed Ethernet switches will be installed in the respective process areas.

Phase III – Plant ring Factory Acceptance Testing: The plant DLR will be staged at the WM ABQ office before deployment to ensure correct functionality.

Phase IV – Installation/commissioning of new Plant ring: Sandia Lightwave will prepare and terminate new spare fibers and install and terminate new fiber jumpers to the new managed Ethernet switches. Each plant ring fiber segment will be tested and documented for performance or inadequacies. The intent will be to keep the existing Plant ControlNet fiber ring intact and functional during the new DLR fiber ring installation to reduce downtime plant ring downtime.

Phase V – Process area Factory Acceptance Testing: Each modified process area will FAT'd at the WM ABQ office prior to deployment to ensure correct functionality

Phase VI – Process area Site Acceptance Testing: CPU's and Ethernet module to replace the local ControlNet networks will be installed and commissioned. At this point the ControlNet Plant ring will still be in place

Phase VII - Ethernet Plant ring Site Acceptance Testing: The remaining ControlNet components for the existing plant ring will be de-installed and replaced with Ethernet components. All peer-to-peer and remote I/O connections will be verified



F. Closing Remarks

WM is pleased to have the opportunity to propose working with the ABCWUA to support control systems upgrades on the existing surface water facility.

WM seeks to partner with our customers and we are interested in building a strong partnership with the ABCWUA team in support of reaching ABCWUA's facility goals.

Thank you again for the opportunity to work with ABCWUA and we look forward to discussing our proposal with you.

Sincerely, Sebastian Rabo Wunderlich-Malec Engineering Cell: (505) 991-3017

Email: sebastian.rabo@wmeng.com



G. Bid Form

To:

BID FORM

To: Albuquerque Bernalillo County Water Utility Authority (ABCWUA):
Bid Submitted For: Water SCADA System - PLC & ControlNet Upgrade Project
Pursuant to and in compliance with your Advertisement to Bid and the Request for Proposals relating thereto, the undersigned hereby proposes to furnish all labor, materials, supplies equipment, and other facilities necessary or proper for or incidental to the above Contract, as required by and in strict accordance with the Bidding Documents for the amount named in the proposal hereinafter described. In making this proposal the Bidder hereby declares that all provisions of Addenda which have been issued have been complied with in preparing bids.
Name of Bidder: Wunderlich-Malec Systems Inc.
Bidder: Corporation
(Individual, Partnership, Corporation, Joint Venture; L.L.C. as case may be)
Bidder's Business Address: 8804 Washington St. NE, Albuquerque NM 87113
Telephone No.: 505-856-6600Fax No.: 505-856-6700
Email.: sebastian.rabo@wmeng.com
Date of Bid: 4/18/2025

The undersigned, as Bidder, declares that he/she is authorized to sign this Bid Form on behalf of Bidder; that he/she has carefully examined the annexed proposed form of contract and bond and the drawings therein referred to; and that he/she proposes and agrees, if this proposal is accepted, to contract with the Albuquerque Bernalillo County Water Utility Authority (ABCWUA), in the form of the copy of the Contract deposited in the office of the ABCWUA, to perform all the work described in the Contract Specifications in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that he/she will take in full payment therefor the sums, exclusive of all taxes, proposed herein.

If this proposal shall be accepted by the ABCWUA, and the undersigned shall fail to contract as aforesaid, as specified in the General Conditions according to the address herewith given, that the

Page 9



contract is ready for signature, then the AF	BCWUA may at their option determine that the Bidder
	the proposal and acceptance shall be null and void, and
	Bond and the proceeds thereof for
	(Bid Security) accompanying this proposal shall
become the property of the ABCWUA and additionally the Bidder shall be liable to ABCWUA for any and all damages accruing to ABCWUA by reason of said default; otherwise the accompanying check and/or Bid Bond, shall be returned to the undersigned. Signature of Bidder with signatory's personal residence address and Bidder's business address:	
•	
check and/of Bid Bond, shan be retained to	the undersigned.
Signature of Bidder with signatory's person	al residence address and Bidder's business address:
Dated: 4/18/2025	Corporate Seal:
	Attest:
	Name: Sebastian Rabo
	Print:
	1 1IIIc.
	Title: Operations Manager
	04 (9 '6-)
	Other (Specify):

THE BIDDER AFFIRMS AND DECLARES:

- A. That he/she has carefully examined the site of the work and that, from his own personal investigations and research, has satisfied himself/herself as to the nature and location of the work, the character, quality, and quantity of existing materials. All difficulties likely to be encountered; the kind and extent of labor, equipment, other facilities needed for the performance of the work; the general and local conditions; and all other items and conditions which may, in any way, affect the work or its performance.
- B. The Bidder also declares that he/she has carefully examined and fully understands all the component parts of this Contract, that the work can be performed as called for by the Contract, and that he/she will execute the Contract and will completely perform it in strict accordance with its terms for the prices.
- C. That the Bidder will execute work for the Allowance items as directed by the

Page 10



Engineer. It is also understood and agreed that the Final Contract Payment for allowance Items will be based upon such actual payments, and not on the approximate amount cited herein.

- D. That the Bidder declares the attached "Qualification Form" is in all respects a true and complete statement of the qualifications and financial condition of the Bidder.
- E. The price is inclusive of New Mexico State and Federal Taxes.
- F. Prices shall also include all transportation charges on materials removed from site and charges pertaining to disposal and other costs pertaining to the execution of the work.
- G. He/She shall maintain for the duration of the work to be done under this contract, insurance in the amounts specified in the Contract. Upon execution of the Contract, the contractor shall furnish all certificates of insurance as required and set forth herein.
- H. That he/she understands and agrees to the conditions for liquidated damages.
- I. Upon completion, inspection, and acceptance by ABCWUA of the work, the contractor shall turn over to ABCWUA the Maintenance Bond (Specification Section 00 61 19) for the one (1) year Correction Period specified in the Contract Documents.
- J. The Bidder has clearly marked on the outside of the sealed envelope that contains his/her bid, the Bidder's name, contract name and number, and bid opening date.



WATER SCADA SYSTEM - PLC & CONTROLNET UPGRADE PROJECT

ITEM	QUANTITY	JANTITY LUMP SUM OR UNIT PRICE WRITTEN IN WORDS	BID PRICE WRITTEN IN FIGURES	
			Dollars	Cents
1	LUMP SUM	PROJECT MANAGEMENT & MOBILIZATION Lump Sum (Must be written in words) FOR One Hundred Four Thousand & Four Hundred Dollars Cents	\$104,400	
2	LUMP SUM	FIBER INVESTIGATION AND INSTALLATION Lump Sum (Must be written in words) FOR Forty One Thousand & Five Dollars Cents	\$41,005	
3	LUMP SUM	SWTP - CONTROLNET TO ETHERNET/IP NETWORK UPGRADES Lump Sum (Must be written in words) FOR One Hundred Eighty Thousand & Nine Hundred Sixty Four Dollars Cents	\$180,964	
4	LUMP SUM	SWTP - PLC PROCESSOR UPGRADES Lump Sum (Must be written in words) FOR One Hundred Fifty One Thousand & One Hundred Two Dollars Cents	\$151,102	
5	LUMP SUM	SWTP – LOI UPGRADES Lump Sum (Must be written in words) FOR One Hundred Six Thousand & Three Hundred Seventeen Dollars Cents	\$106,317	



6	LUMP SUM	SWTP – DEWATERING FACILITY WORK Lump Sum (Must be written in words) FOR Eighty Four Thousand & Three Hundred Seventeen Dollars Cents	\$84,317
7	LUMP SUM	RAW WATER PUMP STATION WORK Lump Sum (Must be written in words) FOR Ninety Two Thousand & Seven Hundred Forty Dollars Cents	\$92,740
8	LUMP SUM	FACTORY ACCEPTANCE TESTING Lump Sum (Must be written in words) FOR Forty Two Thousand-Four-Hundred & Fifty-Three Dollars Cents	\$42,453
9	LUMP SUM	DEMOLITION, INSTALLATION, SITE ACCEPTANCE TESTING, STARTUP, AND COMMISSIONING Lump Sum (Must be written in words) FOR One Hundred Twenty Four Thousand & Four Hundred Thirty Three	\$124,433
10	LUMP SUM	Dollars Cents TRAINING, DOCUMENTATION, AND PROJECT CLOSEOUT Lump Sum (Must be written in words) FOR Twenty Two Thousand & Five Hundred Eighty Six Dollars Cents	\$22,586
11	ALLOWANCE	UNFORESEEN CONDITIONS Lump Sum (Must be written in words) FOR Forty Eight Thousand Dollars Cents	\$48,000



NEW A CENTRO CROSS RECEIPES TAX

One Million – Seventy-Four Thousand & Four Hundred Thirty Nine

12	LUMP SUM	Lump Sum (Must be written in words)	\$76.100	
		FOR Seventy Six Thousand & One Hundred Twenty Two Dollars Cents	\$76,122	
FOTAL F	DID DDIGE (C	en of Itama No. 4 there were No. 40\ (in Figures)		
ΓΟΤΑL E	BID PRICE (Su	m of Item No. 1 through No. 12) (in Figures) \$1,074,439		
	BID PRICE (Su	m of Item No. 1 through No. 12) (in Figures) \$1,074,439		

The "Allowance Items" are intended to provide for work that may later be determined to be necessary for the completion of the project but is not covered in the bid specifications. Written authorization by the owner for utilization of any part of the allowances for any such work shall be required.

Dollars and

Cents

H. Bid Bond / Insurance

THE CINCINNATI INSURANCE COMPANY

Bid Bond

CONTRACTOR (Name, legal status and address):

SURETY (Name, legal status and principal place of business):

Wunderlich-Malec Systems, Inc.

THE CINCINNATI INSURANCE COMPANY 6200 S. GILMORE ROAD FAIRFIELD, OHIO 45014-5141

OWNER (Name, legal status and address):

Albuquerque Bernalillo County Water Utility Authority (ABCWUA) P.O. Box 568

Albuquerque, NM 87103-0568

BOND AMOUNT:

5% of Bid Amount

PROJECT (Name, location or address, and Project number, if any): Water SCADA System - PLC & ControlNet Upgrade Project

This document has important legal consequences, Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

(Seal)

(Seal)

Project Number, if any:

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material Driede in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond the sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirements shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this

day of

(Witness)

Witness)

(Title)

(Principal)

THE CINCINNATI INSURANCE COMPANY

(Surety)

Kimberly Anderson (Title) Kimberly Anderson, Attorney In Fact

THE CINCINNATI INSURANCE COMPANY THE CINCINNATI CASUALTY COMPANY

Fairfield, Ohio

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That THE CINCINNATI INSURANCE COMPANY and THE CINCINNATI CASUALTY COMPANY, corporations organized under the laws of the State of Ohio, and having their principal offices in the City of Fairfield, Ohio (herein collectively called the "Companies"), do hereby constitute and appoint

Kimberly K. Anderson; Robert R. Kirschbaum; Linda Bregel; Ruthi Siegel; Dave Cutler and/or Neal White

of Eden Prairie, Minnesota

their true and legal Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and deliver on behalf of the Companies as Surety, any and all bonds, policies, undertakings or other like instruments, as follows:

Any such obligations in the United States, up to Twenty Million and No/100 Dollars (\$20,000,000.00).

This appointment is made under and by authority of the following resolutions adopted by the Boards of Directors of The Cincinnati Insurance Company and The Cincinnati Casualty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the President or any Senior Vice President be hereby authorized, and empowered to appoint Attorneys-in-Fact of the Company to execute any and all bonds, policies, undertakings, or other like instruments on behalf of the Corporation, and may authorize any officer or any such Attorney-in-Fact to affix the corporate seal; and may with or without cause modify or revoke any such appointment or authority. Any such writings so executed by such Attorneys-in-Fact shall be binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company.

RESOLVED, that the signature of the President or any Senior Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Secretary or Assistant Vice-President and the Seal of the Company may be affixed by facsimile to any certificate of any such power and any such power of certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company.

IN WITNESS WHEREOF, the Companies have caused these presents to be sealed with their corporate seals, duly attested by their President or any Senior Vice President this 16th day of March, 2021.





STATE OF OHIO
COUNTY OF BUTLER

)SS:

THE CINCINNATI INSURANCE COMPANY THE CINCINNATI CASUALTY COMPANY

Steplen & Vertre

On this 16th day of March, 2021 before me came the above-named President or Senior Vice President of The Cincinnati Insurance Company and The Cincinnati Casualty Company, to me personally known to be the officer described herein, and acknowledged that the seals affixed to the preceding instrument are the corporate seals of said Companies and the corporate seals and the signature of the officer were duly affixed and subscribed to said instrument by the authority and direction of said corporations.



Keith Collett, Attorney at Law Notary Public - State of Ohio

My commission has no expiration date. Section 147.03 O.R.C.

I, the undersigned Secretary or Assistant Vice-President of The Cincinnati Insurance Company and The Cincinnati Casualty Company, hereby certify that the above is the Original Power of Attorney issued by said Companies, and do hereby further certify that the said Power of Attorney is still in full force and effect.

Given under my hand and seal of said Companies at Fairfield, Ohio, this 16 day of April

2025





ESA

INDIVIDUAL

STATE OF)	INDIVIDUAL	
) SS:		
COUNTY OF)		
On thisday of	, before me personally appeared	
	the individual described in and who executed the foregoing instru	
acknowledged to me that	executed the same in his/her indivi	dual capacity.
	(Notar	y Public)
	<u>COPARTNERSHIP</u>	
STATE OF)		
COUNTY OF		
0-11-		
	,, before me personally appeared	
	one of the firm of	
firm.	thereupon acknowledged to me that he executed the same as ar	nd for the act and deed of said
nrm.		
	(Notar	y Public)
	CORROBATE	
STATE OF)	<u>CORPORATE</u>	
) SS:		
COUNTY OF)		
On this day of	,, before me personally appeared	
to me known, who, being by me first	duly sworn, did depose and say that he resides in	
	of	
	instrument; that he knows the corporate seal of said corporation;	
	it was so affixed by order and authority of the Board of Directors of	
signed his name thereto by like order and auth		5 N
	(Notar	y Public)
	SURETY	
STATE OF Minnesota	CONETT	
) SS:		
COUNTY OF Hennepin)		
I,Robert R Kirschbaum, Notary	Public of Hennepin County, in the State of Minne	sotado hereby certify
that Kimberly Anderson	,Attorney-in-fact, of theCincinnati Insurance Co	
	n whose name is subscribed to the foregoing instrument, appeare	0.55 0.5
	d delivered said instrument, for and on behalf of theCincin	
for the uses and poses therein set forth. Giver	n under my hand and notarial seal at my office in the City of	den Prairie in said County, this
day of	, A.D	
Robert R Kirsch		Moum
NOTARY PUE		ry Public)
My Commission Expires J	in the same of the	*



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

CONTACT NAME: Kim Anderson Hub International Great Plains, LLC NC, No. Ext): 952-914-7145 6500 City West Parkway, Suite 100 FAX (A/C, No): 952-956-3357 Eden Prairie MN 55344 ADDRESS: kim.anderson@hubinternational.com INSURER(S) AFFORDING COVERAGE NAIC # INSURER A : Hartford Fire Insurance Company 19682 INSURED WUNDENG-01 INSURER B: Charter Oak Fire Insurance Company Wunderlich-Malec Engineering Inc, Wunderlich-Malec 25615 Services, Inc., Wunderlich-Malec Systems, Inc. INSURER C: The Travelers Indemnity Company of America 25666 6101 Blue Circle Drive INSURER D: Travelers Property Casualty Company of America Eden Prairie MN 55344 25674 INSURER E: Travelers Casualty & Surety Company of America 31194 INSURER F: The Travelers Indemnity Company of Connecticut COVERAGES 25682

CERTIFICATE NUMBER: 234806829 REVISION NUMBER: THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS

NSR LTR		TYPE OF INSURANCE	ADDL	SUBR	POLICY NUMBER	POLICY EFF	POLICY EXP (MM/DD/YYYY)		
С	X	CLAIMS-MADE X OCCUR	Y	Y	P630-1N669205-TIA-25	1/1/2025	1/1/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 1,000,000 \$ 300,000
								MED EXP (Any one person)	\$ 10,000
	GEN	N'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	\$ 1,000,000
İ		POLICY X PRO- X LOC						GENERAL AGGREGATE	\$ 2,000,000
I		OTHER:					1	PRODUCTS - COMP/OP AGG	\$2,000,000
)	AUT	OMOBILE LIABILITY	Y						\$
T	X	ANY AUTO	1	Υ	BA1N651564-25-43-G	1/1/2025	1/1/2026	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000
+	_	OWNED SCHEDULED						BODILY INJURY (Per person)	\$
1	v	AUTOS ONLY AUTOS						BODILY INJURY (Per accident)	\$
ŀ	^	AUTOS ONLY X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	\$
	v	UMBRELLA LIAB X OCCUP		-					\$
+	^	EVCESSIVAD	Υ	Υ	CUP-1N707158-25-43	1/1/2025	1/1/2026	EACH OCCURRENCE	\$ 20,000,000
-	-	CLAIMS-MADE						AGGREGATE	\$ 20,000,000
٠,	WOR	DED X RETENTION \$ 10,000 KERS COMPENSATION							\$
	AND	EMPLOYERS' LIABILITY		Y	UB-1N673083-25-43-G CA UB-1N673083-24-43G	1/1/2025 1/1/2025	1/1/2026 1/1/2026	X PER OTH-	
10	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBEREXCLUDED? (Mandatory in NH) If yes, describe under		N/A		NH-UB-1N673083-25-43-G	1/1/2025	1/1/2026	E.L. EACH ACCIDENT	\$1,000,000
- 13				1 1				E.L. DISEASE - EA EMPLOYEE	\$ 1,000,000
	OESC Crime	CRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	\$1,000,000
	Inland	e d Marine mobile			105877082 41MSRC0983 BA1N651564-24-43-G	1/1/2025 1/1/2025 1/1/2025	1/1/2026	Employee Dishonesty Equipment Hired/Physical Damage	1,000,000 395,000 50,000

SCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) Blanket Additional Insured, Blanket Primary & Non-Contributory, Blanket Waiver of Subrogation applies to the general liability, Automobile Liability and Umbrella. Auto: Comprehensive Ded \$1000 and Collision Ded \$1,000. General Liability - No Deductible; Excess/Umbrella Follow Form and is over the General, Automobile, and Employers Liability; Blanket Waiver of Subrogation applies to the Workers Compensation: Monopolistic Stop Gap included for OH, WA, WY, ND: All coverages are per the forms and endorsements on the policies listed above. Should any of the above described policies be cancelled before the expiration date 60 days notice will be sent in accordance with the policy provisions. 10 Days notice of cancellation due to non-payment of premium in

Project: Water SCADA System - PLC & ControlNet Upgrade Project Additional Insured (applies to general liability only - when required by written contract): Albuquerque Bernalillo County Water Utility Authority With regard to work performed by the named insured.

CERTIFICATE HOLDER

Albuquerque Bernalillo County Water Utility Authority (ABCWUA) P.O. Box 568 Albuquerque NM 87103-0568

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Janiel & contruella



CERTIFICATE OF LIABILITY INSURANCE DATE (MM/DD/YYYY) 4/18/2025 THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER. IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s). NAME: Kim Anderson Hub International Great Plains, LLC (A/C, No. Ext): 952-914-7145 E-MAIL FAX (A/C, No): 952-914-3357 6500 City West Parkway, Suite 100 Eden Prairie MN 55344 ADDRESS: kim.anderson@hubinternational.com INSURER(S) AFFORDING COVERAGE NAIC# INSURER A: Continental Casualty Company 20443 INSURED WUNDENG-01 INSURER B : Wunderlich-Malec Engineering Inc, Wunderlich-Malec Services Inc., Wunderlich-Malec Systems, Inc. INSURER C: 6101 Blue Circle Drive INSURER D: Eden Prairie MN 55343 INSURER E : INSURER F : COVERAGES **CERTIFICATE NUMBER: 1704603928 REVISION NUMBER:** THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. ADDL SUBR POLICY EFF POLICY EXP (MM/DD/YYYY) TYPE OF INSURANCE POLICY NUMBER COMMERCIAL GENERAL LIABILITY EACH OCCURRENCE \$ CLAIMS-MADE DAMAGE TO RENTED OCCUR PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GEN'L AGGREGATE LIMIT APPLIES PER: GENERAL AGGREGATE \$ PRO-JECT POLICY LOC PRODUCTS - COMP/OP AGG \$ OTHER: \$ **AUTOMOBILE LIABILITY** COMBINED SINGLE LIMIT (Ea accident) \$ ANY AUTO BODILY INJURY (Per person) \$ OWNED SCHEDULED AUTOS ONLY HIRED BODILY INJURY (Per accident) \$ AUTOS NON-OWNED PROPERTY DAMAGE (Per accident) AUTOS ONLY AUTOS ONLY \$ \$ **UMBRELLA LIAB OCCUR EACH OCCURRENCE** \$ **EXCESS LIAB** CLAIMS-MADE AGGREGATE \$ DED RETENTION \$ WORKERS COMPENSATION PER STATUTE AND EMPLOYERS' LIABILITY ANYPROPRIETOR/PARTNER/EXECUTIVE E.L. EACH ACCIDENT NIA OFFICER/MEMBER EXCLUDED? (Mandatory in NH)
If yes, describe under E.L. DISEASE - EA EMPLOYEE \$ If yes, describe under DESCRIPTION OF OPERATIONS below E.L. DISEASE - POLICY LIMIT Errors & Omissions (Professiona) Includes Pollution Liability AEH133332961 1/1/2025 Per Claim/350,000 Ded 1/1/2026 10,000,000 Aggregate 10,000,000 DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) Additional Insured Status applies to Pollution Liability coverage only as outlined in the definition of the insured (Item IV) and Conditions (Item d). Does not apply to the Errors & Omissions/Professional liability coverage.

Primary and Non-contributory and Waiver of Subrogation included in the forms. Includes Technology E&O as per the forms and endorsements on the policy. Knowledge Date: 1/1/2004/Inception Date 3/29/1989 Project: Water SCADA System - PLC & ControlNet Upgrade Project

See Attached..

CERTIFICATE HOLDER

CANCELLATION

Albuquerque Bernalillo County Water Utility Authority (ABCWUA) P.O. Box 568 Albuquerque NM 87103-0568

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Janiel & cartenella

AGENCY	CUSTOMER	ID:	WUNDENG-01

LOC #:

ACORD	DDITIONAL REMA	ARKS SCHEDULE Pag	ge <u>1</u> of 1
AGENCY Hub International Great Plains, LLC		NAMED INSURED Wunderlich-Malec Engineering Inc, Wunderlich-Malec	
POLICY NUMBER		Wunderlich-Malec Engineering Inc, Wunderlich-Malec Services Inc., Wunderlich-Malec Systems, Inc. 6101 Blue Circle Drive Eden Prairie MN 55343	
CARRIER	NAIC CODE	EFFECTIVE DATE:	
ADDITIONAL REMARKS		EFFECTIVE DATE:	
THIS ADDITIONAL REMARKS FORM IS A SC	HEDIU E TO ACORD FORM		
	CERTIFICATE OF LIABILITY I	INSURANCE	
Additional Insured (applies to general liability on performed by the named insured.	ly - when required by written con	ntract): Albuquerque Bernalillo County Water Utility Authority W	ith regard to work

I. Project Profiles

PROJECT PROFILE OF IMPLEMENTED SYSTEM		
TITLE AND LOCATION:		
City of Santa Fe Water Dept., New Mexico		Wunderlich-Malec
Potable Water RTU Retrofits		
		YEAR COMPLETED:
PROJECT OWNER:		2020
City of Santa Fe, New Mexico		
POINT OF CONTACT:	POINT OF CONTACT P	HONE NUMBER:
Alex Gamino	(505)-917-2855	

BRIEF DESCRIPTION OF PROJECT

Financial Data (Multiple Contracts)

Bid Price: \$ 664,864 **Final Price:** \$ 700,664

Total Change Orders: 1 due to customer requests

Total Hardware: \$ 128,950 Total Labor: \$ 638,714

Programming Labor: \$ \$540,554

Schedule Milestones
Notice to proceed: 9/2015

Original schedule completion date: Open

Original substantial completion target date: **Open**Actual substantial completion target date: **5/2020**Actual days added through change orders: **Zero**

Prime System Integrator: Wunderlich-Malec Engineering Inc.

Project Description:

Reservoir and Well Telemetry and RTUs Retrofits

The legacy existing MDS telemetry system and Modicon RTU's were retrofitted with a new telemetry and RTU's consisting of Rockwell PLC's & 900MHz Xetawave radios. A licensed microwave point-to-point system was supplied earlier as part of the Buckman Direct Diversion Project, consisting of 3 locations spanning across Santa Fe connecting the two main surface water plants (BDD & CRWTP) with an end-to-end full duplex throughput of 60MBits/sec.

The original ground water RTU telemetry radio system was comprised of 34 existing RTU's, utilizing legacy licensed MDS radios. One of the main design modifications of the new RTU SCADA system was diversifying the system from a single polling master radio to multiple masters utilizing new fiber optic and microwave connections greatly improving system reliability and performance.

Path Study and RTU Radio Network Upgrade

W-M subsequently performed a telemetry path study and designed a new RTU radio network to improve reliability and performance. The original licensed MDS radios were retrofitted with 900MHz unlicensed radios. W-M also retrofitted the outdated Modicon RTU PLC's with new Allen-Bradley CompactLogix PLC's into the existing enclosures, as well as performing SCADA screen replacements making the system more user friendly and enhancing operator awareness and functionality.

W-M was responsible for all software development and acceptance testing from PLC's to SCADA & local HMI's

Pressure Reducing Valve (PRV) RTU Retrofits

The PRV (Pressure Reducing Valve) system maintains the City of Santa Fe potable water system at specific pressures to avoid over pressurizing the water system as well as monitor and alarm the system for water main breaks, intrusions, etc...

The original SCADA system consisted seventeen serial based RTU's which connected to the MTU (Master Terminal Unit with a leased line telemetry system. The system had a poll rate of 18 minutes which caused response time issues. The system also consisted of obsolete hardware that was difficult to maintain.

W-M recommended a cellular modem solution since many of the PRV stations were located near residences and homeowners had become vocal about having large towers and antennas located "in their backyard"

W-M performed path studies comparing the two main cellular providers in the area (Verizon & AT&T), then designed a retrofit replacement of the new equipment into the original enclosures.

The new communications system consists of retrofitting RTU's and an MTU that utilize the DNP3 protocol for efficient bandwidth utilization of the cellular network. As opposed to the MTU polling the RTU's at a periodic interval the RTU's push data to the MTU on data change (report by exception), this not only reduces the cellular subscription cost but provides data and alarms immediately on occurrence.

The city requested a third party firm to perform a network penetration test in order to determine the security designed into the system protected the Cities assets, the system passed the penetration test with very high ratings.

The new system also utilizes a web server based operator interface built into the MTU that provides efficient and user friendly access to the City operators via cell phones, iPads, etc... as well as providing emailed alarms notifications to City operators regardless of where they are located.

WM provided all hardware, programming and installation

CASE STUDY OF IMPLEMENTED SYSTEM	ı
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TITLE AND LOCATION: Explosive Components Facility Safety Interlock System	WWW Wunderlich-Malec
PROJECT OWNER:	DATE COMPLETED:
Sandia National Laboratory	Dec 2017
Albuquerque, NM	
FOR REFERENCE POINTS OF CONTACT:	POINT OF CONTACT PHONE NUMBER:
Justin Henderson	(505) 844-9607

BRIEF DESCRIPTION OF PROJECT:

Financial Data

Bid Price: \$ 302,634

Final Price: \$ 302,634

Total Change Orders: \$0

Total Hardware: \$ 106,700

Total Labor: \$ 195,934

Programming Labor: \$ 170,034

Schedule Milestones

Notice to proceed: 8/2015

Original schedule completion date: Open

Original substantial completion target date: Open

Actual substantial completion target date: 10/2017 – Support Ongoing

Actual days added through change orders: 0

Project General Description:

W-M originally designed, programmed, and commissioned a Safety interlock system for the ECF in 1995, The system prevents dangerous situations from occurring by monitoring and controlling activity among numerous explosive labs and vaults. The original system was based on A-B SLC5/03 DH-485 controllers and subsequently upgraded to A-B SLC5/05 Ethernet controllers in 2005. This project upgraded all of the A-B SLC based controllers to CompactLogix L33 controllers which greatly increased the robustness and speed of the system.

Primary W-M Deliverables:

- Redesigned the controller/HMI network from a star configuration with single points of failure to a robust redundant ring design.
- Complete detail design installation package consisting of electrical diagrams and Installation details to retrofit the new controllers into the existing control panels. All drawings were as-built at project completion.
- Revised the messaging protocol between the CompactLogix PLC's from explicit messages (MSG) to a Produced/Consumed model.
- Subcontracted and supervised the electrical contractor (B&D Industries) performing the onsite retrofit installation work both during normal and after hours.
- Coordinated installation schedule to accommodate programmatic activities onsite.
- Converted 18 SLC based PLC programs into the new CompactLogix based platform. Re-tagged 18 PanelView HMI's to be compatible with the new PLC programs

- Supplied and configured 18 CompactLogix PLC systems with appropriate I/O compatible with the
 existing instrumentation. Supplied and configured 15 N-Tron industrial network switches to provide a
 robust ring configuration.
- Performed factory acceptance test (FAT) in the WM Albuquerque office to confirm proper operation prior to site deployment.
- Assisted SNL personnel in site acceptance tests (SAT), verifying the new system performed in accordance with the existing functional/safety matrices.
- Provided onsite emergency support agreement for troubleshooting and functional modifications as needed.

Project Team:	
Sebastian Rabo – Principal Engineer, Project Manager	
Sebastian Rabo Trincipal Engineer, Project Manager	
PROJECT PROFILE OF IMPLEMENTED SYSTEMS	
TITLE AND LOCATION:	W
SUMCO USA Facility SCADA Replacement	Wunderlich-Malec

TITLE AND LOCATION: SUMCO USA Facility SCADA Replacement	Wunderlich-Malec
PROJECT OWNER: SUMCO USA, Albuquerque, New Mexico	YEAR COMPLETED: 2016

POINT OF CONTACT:	POINT OF CONTACT PHONE NUMBER:
Jason Neilson	(505)-681-6926

BRIEF DESCRIPTION OF PROJECT

Description of Project:

Replaced obsolete proprietary Facility Management System based on Andover Controls with an open architecture Rockwell/Iconics based system.

The original Andover Controls system consisted of Andover Infinity CX9200 controllers using a proprietary communication protocol, controlling Main Air Handlers, Recirc Air Handlers, industrial chillers, cooling towers, air compressors, boilers, VAVs, and other ancillary devices.

The new system consists of 8 PLC's, 20 VAV controllers, 5000 SCADA tags, and 100 SCADA screens. Communication using Ethernet/IP, Modbus, and BACnet protocols is via fault tolerant N-Tron N-Ring topology, using the KEPServerEX OPC server.

W-M services included:

- Programming all existing equipment in the new PLC and SCADA software environment,
- Developing a new installation drawing package,
- Fabricating and installing new control panels (by Omega Contractors),
- Providing commissioning services, and
- Completing as-built revisions of all drawings.

This facility could not tolerate extended downtime, so all cutover operations required careful coordination with production and occurred after hours and during holidays.

STANDARD TERMS AND CONDITIONS OF SALE

1. Name Reference

SELLER means Wunderlich-Malec Engineering, Inc. and/or its Affiliates (including Wunderlich-Malec Services, Inc., Wunderlich-Malec Systems, Inc., Wunderlich-Malec AECM, Inc., and/or Case RMC, LLC), whichever is noted in the Proposal, Quote, Invoice, or Acknowledgement ("SELLER's Offer"). SELLER is responsible for performance of the Work as hereinafter defined. BUYER refers to person or entity that receives SELLER's Offer and/or authorizes SELLER to perform the Work. BUYER is responsible for payment for the Work. BUYER and SELLER are referred to herein as a "Party" or collectively as the "Parties".

2. Applicable Terms

These Standard Terms and Conditions of Sale ("Terms") govern the sale by SELLER of all goods, services, equipment, design, procurement, and/or consultation (collectively, "Work") referred to in SELLER's Offer. SELLER's Offer is conditioned on BUYER's assent to these Terms. SELLER rejects all additional or different terms in any of BUYER's forms or documents and, if BUYER insists on one or more of its terms, then there is no meeting of the minds as to this transaction, and conflicting terms must be stricken unless written documentation shows a negotiated resolution agreed to by the Parties.

3. Scope of Work and Changes

The scope of Work, including any exclusions or clarifications thereto, is as listed on SELLER's Offer. Both BUYER and SELLER may request/propose changes to the Work. These changes may be implemented upon mutual agreement in writing, which agreement shall address changes to pricing and/or schedule. SELLER shall not be required to proceed with any requested changes until a mutually executed change order or other documentation has been received and accepted. Unless otherwise agreed, fees for all changed or additional Work shall be charged at the standard SELLER rates (including any markup) in effect at the time of the change.

4. Authorization to Proceed

Unless otherwise stated, the terms and price of SELLER's Offer are valid for sixty (60) days from the date of issue unless SELLER, in its sole discretion, withdraws its Offer prior to Buyer's unqualified acceptance thereof. BUYER's acceptance of SELLER's Offer in writing shall be authorization for SELLER to proceed with the Work and adoption of these Terms. All orders are subject to credit approval by SELLER.

5. Reimbursable Expenses

SELLER's direct costs shall be those actual costs incurred in commission of or directly for the Work or in connection with BUYER's project, including travel costs, and will be separately itemized on SELLER's invoice. Backup documentation shall be made reasonably available to BUYER upon request.

6. Payment to SELLER

Invoices, in US dollars, shall be issued monthly by SELLER for all Work performed, and shall include labor hours, materials, and reimbursable expenses, or per the schedule of values/payments included with SELLER's Offer. Invoices are due and payable by BUYER no later than thirty (30) calendar days after the date of SELLER's invoice. BUYER shall be charged the lower of 1.5% interest per month or the maximum legal rate on all amounts not received by the due date and shall pay all of SELLER's reasonable costs (including attorneys' fees and costs) of collecting unpaid amounts. If BUYER disputes all or part of an invoice in good faith, it shall state in writing the reason(s) for its dispute within five (5) days of receiving SELLER's invoice, and BUYER shall promptly pay all undisputed portions in accordance with these Terms.

7. Disclaimer for Cost Estimates and Supply Chain Impacts

Any preliminary or budgetary cost estimates that may be provided by SELLER as a part of its Work or as a quotation for extra work are made on the basis of experience and judgment only. Because SELLER has no control over market conditions or bidding procedures, SELLER cannot warrant that ultimate costs will not vary from preliminary cost estimates. Additionally, given market fluctuations and shortages of certain critical supply items, including labor and component materials, pricing and schedule in SELLER's Offer may be based on an allowance or range, or may be subject to a deadline for BUYER's acceptance.

8. Standard of Care and Warranty

The standard of care applicable to SELLER's Work is as follows: (i) for services, SELLER represents and warrants that any services will be performed with degree of skill and care that is required by current industry standards by appropriately qualified personnel for the particular service under similar circumstances at the same time and in the same locality; and (ii) for goods and equipment, SELLER represents and warrants that any goods and equipment provided will be free from defects in materials or workmanship under normal use and care. Subject to the foregoing standard of care, SELLER may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards. Unless otherwise stated in SELLER's Offer, the warranty period shall be as follows (the "Warranty Period"): (a) for services, twelve (12) months from the date the services are performed; and (b) for goods and equipment, twelve (12) months from the date of delivery to the place designated. If during the Warranty Period BUYER gives SELLER prompt written notice of breach of this warranty, SELLER shall, at its sole option and as BUYER's sole remedy, repair or replace the subject parts or refund the purchase price therefor. If SELLER determines that any claimed breach is not, in fact, covered by this warranty, BUYER shall pay SELLER its then customary charges for any repair or replacement made by SELLER. This warranty is conditioned on BUYER's proper operation and maintenance of equipment and connecting equipment in accordance with manufacturer's instructions, and fulfillment of BUYER's payment obligations to SELLER. This

warranty does not cover damage caused by chemical action or abrasive material, misuse, unauthorized repairs or alterations, or improper installation by others. SELLER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, FOR ITS SERVICES OR HARDWARE FURNISHED BY SELLER BUT MANUFACTURED BY OTHERS (WHICH SHALL REMAIN SUBJECT TO THE STANDARD MANUFACTURER'S WARRANTY WHICH SHALL BE PASSED ON TO BUYER BY SELLER).

9. Disclaimer for Site Supervision

Unless specifically stated in SELLER's Offer as part of the scope of services offered, SELLER shall not at any time supervise, direct, control, or have authority over any site contractor's work, nor shall SELLER have authority over or be responsible for the means, methods, techniques, sequences, or procedures of construction selected or used by any site contractor, or the safety precautions and programs incident thereto, for security or safety at the project site, nor for any failure of a site contractor to comply with laws and regulations applicable to such contractor's furnishing and performing of its work. SELLER neither guarantees the performance of any contractor nor assumes responsibility for any contractor's failure to furnish and perform its work in accordance with the contract between BUYER and such contractor.

10. Termination

The right or obligation to proceed under this agreement may be terminated, in whole or in part, by either party (i) for convenience, on thirty (30) days' written notice, or (ii) for cause, if either party fails substantially to perform through no fault of the other and does not commence correction of such non-performance within five (5) days of written notice and diligently complete the correction thereafter. On termination, SELLER shall be paid for all Work performed prior to the effective date of termination, along with termination expenses including, but not limited to, reassignment of personnel, demobilization costs, subcontract termination costs, equipment order cancellation costs, and related closeout costs for design and project management coordination at standard hourly rates.

11. Cancellation

If, prior to completion of the Work, BUYER cancels or suspends its order, or any part of it, for any reason other than SELLER's breach, BUYER shall promptly pay SELLER for work performed prior to the effective date of cancellation or suspension along with any other direct costs incurred by SELLER as a result of such cancellation or suspension, as well as overhead and profit on all such costs and expenses, for the portion of the Work cancelled or suspended.

12. Use of SELLER Affiliates

SELLER may use any one or more of its local offices or Affiliates as a subconsultant or supplier for the Work without further authorization from BUYER, provided that SELLER remains responsible for such Work, and such Work will be deemed to be performed by an approved subcontractor or supplier under all applicable project requirements.

13. Ownership of Work Product

All work product and design deliverables (including sketches, drawings, plans, specifications, programs, graphic screens, configuration, and program documentation in native file format), estimates, prices, notes, electronic data and other documents or information prepared or disclosed by SELLER (in electronic or hard copy formats), and all related proprietary and intellectual property rights (collectively, "Work Product"), shall remain SELLER's sole property. SELLER grants BUYER a non-exclusive, non-transferable, limited license to use the Work Product solely for BUYER's use to operate and maintain the project and/ or installed application provided BUYER has substantially performed its obligations, including prompt payment of sums due. BUYER shall not disclose Work Product to third parties or use Work Product for another application or location without SELLER's prior written consent. Any limited license supplied pursuant to this paragraph that relates to intellectual property of others, including third-party software, is only to the extent of SELLER's license, and subject to any end user license agreements or other applicable conditions.

14. Confidentiality

Unless the Parties have executed a prior mutual non-disclosure agreement, the following provision shall apply to any information exchanged under this Agreement. The Parties agree that information which pertains to the business activities of the other, and which is not the subject of general public knowledge, including, without limitation, proprietary processes, technical information and know how, management policies, economic policies, financial and other data, customer lists, and computer software ("Confidential Information") is to be used only in connection with the execution of the Work. The receiving party shall treat Confidential Information with at least the same degree of care in safeguarding as it uses to safeguard its own similar, confidential information that it does not wish to disclose, provided such degree of care is reasonably calculated to prevent inadvertent disclosure and unauthorized use thereof. The receiving party agrees to notify the disclosing party immediately upon discovery of any inadvertent disclosure or unauthorized use of Confidential Information and to promptly use reasonable efforts to prevent any further inadvertent disclosure or unauthorized use. Confidential Information may not be disclosed to any third party without the written consent of the disclosing party, except to the extent required by law or in response to a court order, regulatory agency request, or other legal process; provided however, that the party receiving such compulsory process or request shall promptly notify the disclosing party and shall, insofar as possible, consult with the disclosing party about the timing and manner of disclosure. Upon request by the disclosing party, the receiving party shall promptly deliver Confidential Information and any copies thereof in the receiving party's and its representatives' possession, provided that receiving party may retain one (1) copy of such portions of the Confidential Information as is required to comply with internal policy or laws relating to document retention in the normal course of business.

15. Indemnification

Except as stated otherwise herein, the Parties agree to indemnify and defend each other from and against all liabilities claims, expenses, losses, or damages, including attorney's fees and costs, to the extent caused by any negligent act or omission of the indemnifying party in execution of the Work herein.

16. Limitation of Liability

To the maximum extent permitted by law, SELLER's liability to BUYER or any third party for claims and/or damages for any cause or combination of causes related to this Agreement shall, in the aggregate, not exceed the lesser of: (i) the fee received by SELLER under this Agreement, or (ii) the amount of insurance proceeds recoverable, not to exceed the limits in Article 24. This provision takes precedence over any conflicting provisions of these Terms, any document referred to or incorporated by SELLER's Offer, or any other project document.

17. Mutual Waiver of Consequential Damages

Notwithstanding any other provision herein to the contrary, in no event shall either party be liable to the other or any third party for any special, indirect, punitive, or consequential damages. This waiver includes, but is not limited to, loss of profits, loss of income, delay, loss of reputation, loss of use of equipment or facility, escape of contaminants, employment or lack of employment of BUYER's personnel or equipment, loss of opportunity, unrealized savings, or diminution of property value and shall apply to any cause of action including, without limitation, negligence, strict liability, breach of contract, statutory, and breach of warranty.

18. No Third Party Beneficiaries

SELLER's Offer and these Terms give no rights or benefits to anyone other than the BUYER and SELLER, and there are no third party beneficiaries hereto. SELLER's Work is defined solely by these Terms, and not by any other contract or agreement that may be associated with the project.

19. Hazardous Substances

If BUYER requests SELLER to undertake obligations for BUYER's benefit involving the presence of hazardous substances at the project site, BUYER agrees to hold harmless, indemnify, and defend SELLER from and against any and all claims, losses, damages, liability, and costs (including attorneys' fees and experts fees and costs), arising out of or in any way connected to the presence, discharge, release, or escape of contaminants of any kind at the project site, including, but not limited to any solid, liquid, gaseous, or thermal irritant or contaminant, including smoke, vapor, fumes, chemicals, acids or alkalis, or waste. BUYER's obligations under this article apply regardless of whether the underlying cause is or is alleged to be due to the joint or partial negligence of SELLER, and is separate and additive to the obligations in Article 15.

20. Force Majeure

Neither Party shall be liable for unforeseen and unforeseeable delays due to causes beyond its control such as, but without limitation, labor shortages, strikes, lockouts, fires, acts of God and nature, any strike or labor disturbance, shortage of supply, equipment or transmission failure, epidemic, pandemic, quarantine, acts of government, acts of war, terrorism, sabotage, third party software anomalies, or computer viruses (each a "Force Majeure"). A Party claiming the benefit of this provision shall, as soon as reasonably practicable after the occurrence of the event, (a) provide written notice to the other Party of the nature and extent of the Force Majeure condition; and (b) use commercially reasonable efforts to remove any such causes and resume performance as soon as reasonably practicable. If the Force Majeure continues for longer than 90 days, either Party may terminate this Agreement for convenience and BUYER shall thereupon pay SELLER in accordance with Article 10.

21. Taxes

Unless otherwise specified, SELLER's prices do not include sales, use, VAT, or other such taxes, or project bonding. Any applicable taxes shall be added to the invoice as a separate line item unless a valid exemption certificate or self-pay certificate has been provided by BUYER. SELLER shall not bear any risk of sales, use, or any other such taxes.

22. Governing Law

These Terms shall be governed, construed, and interpreted in accordance with the laws of the State of Minnesota, without regard to its choice-of-law principles. If for any reason the governing law set forth herein is deemed to be in violation of law or against public policy, then these Terms shall be governed by the laws of the state where the Work is performed.

23. Disputes

Any controversy or claim arising out of, in connection with, or relating to this Agreement or any subsequent agreements between BUYER and SELLER or the breach thereof shall be resolved by binding arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association; any award tendered shall be final and binding upon the parties hereto; and judgment on the award rendered by the arbitrator(s) may be entered in and enforceable in any court having jurisdiction thereof. The right to arbitrate shall be enforceable under the Federal Arbitration Act. The location of arbitration shall be in Hennepin County, Minnesota, unless otherwise agreed by the parties or mandated by the laws of the state where the Work is performed. In the event legal action is brought to enforce any of the obligations hereunder or arising out of the Work, the losing party shall pay the prevailing party's reasonable fees, costs, and expenses, including attorneys' and expert fees and costs.

24. Insurance

SELLER bases the prices in its Offer on the following insurance coverages and limits: (i) **Commercial General Liability**, \$1,000,000 each occurrence / \$2,000,000 aggregate; (ii) **Excess Liability**, \$10,000,000 each occurrence / \$10,000,000 general aggregate; (iii) **Automobile Liability**, \$1,000,000 combined single limit; (iv) **Workers' Compensation**, statutory; (vi) **Employer's Liability**, \$1,000,000; (vii) **Professional Liability**, \$5,000,000; and (viii) **Cybersecurity**, \$1,000,000. Additional limits may be procured at increased cost.