



**IMU BOARD OF TRUSTEES OF THE ELECTRIC,
WATER AND COMMUNICATIONS UTILITIES**

October 28, 2024

5:30 PM

IMU Boardroom

Agenda

- 1. Call to Order**
- 2. Roll Call**
- 3. Public Comment**
- 4. Consent Agenda**
 - A. Approval of Claims
 - B. Approval of Minutes of the prior meetings
 - C. Resolution Approving Pay App 5 to Miller Electric for the Downtown Underground Conversion Project, South Alley Premise Wiring Project
 - D. Resolution Approving Pay App 11 for Turbine 8 Control Replacement Project
- 5. Electric Utility Action Items**
 - A. Public Hearing for the 69kV Line Relay Replacement Project
 - B. Resolution approving the Plans, Specifications, Form of Contract and Estimate of Cost for the 69kV Line Relay Replacement Project
 - C. Resolution Awarding Contract for 69kV Line Relay Replacement Project
 - D. Resolution Approving Change Order #4 Turbine 8 Control Project
- 6. Electric Utility Informational Items**
- 7. Water Utility Action Items**
 - A. Resolution Approving Lime Tower Relocation, Filter Media Replacements, and Standby Generator Addition Projects: Engineering Services
 - B. Resolution Approving The Final Plans, Specifications, Form of Contract, and Estimated cost for Filter Media Replacement Project
- 8. Water Utility Informational Items**
- 9. Communications Utility Action Items**
 - A. Resolution Authorizing the Purchase of a Server for the Fiber Department
- 10. Communications Utility Informational Items**
- 11. Combined Electric, Water and Communications Action Items**
 - A. Resolution Approving Policy related to E-Bill Only credit

- B. Resolution Approving IMU Project Share Committee Members
- C. Resolution Approving special council to represent Indianola Municipal Utilities (“IMU” or the “Client”) in connection with a denial of insurance coverage
- D. Discussion of the IMU Strategic Plan

- 12. Combined Electric, Water and Communications Informational Items**
- 13. Other Business**
- 14. Adjourn**

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Approval of Claims

Recommendation:

Attachments: 1. 102924 AP Check Preview

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, October 23, 2024
11:49:52 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Account To Be Paid From			0000-10120-999								
AUTOMATIC SYSTEMS CO. - VEND-51495 - EFT File											
10/9/2024	Reclaim Pump 1	VFD Replacement	Open Terms	11,603.00	0.00	0.00	11,603.00	11,603.00	042365	BL-14581	EFT File
							11,603.00	11,603.00			
Bally Sports Midwest - VEND-1222 - EFT File											
11/21/2024	0924 Expanded Basic		Net 30	4,724.16	0.00	15.00	4,724.16	4,724.16	23281	BL-14631	EFT File
							4,724.16	4,724.16			
Big Ten Network - VEND-1096 - EFT File											
10/30/2024	0924 BTN - Core Exp Basic		Net 30	1,996.89	0.00	15.00	1,996.89	1,996.89	336410	BL-14651	EFT File
							1,996.89	1,996.89			
Border States Industries Inc - VEND-1070 - EFT File											
11/17/2024	13-Term Meter Sockets		Net 30	1,786.50	0.00	15.00	1,786.50	1,786.50	929260845	BL-14620	EFT File
							1,786.50	1,786.50			
CCP INDUSTRIES INC. - VEND-8925 - EFT File											
10/16/2024	Shop Towels		Open Terms	218.11	0.00	0.00	218.11	218.11	IN05124608	BL-14621	EFT File
							218.11	218.11			
Cedar Falls Utilities - VEND-1045 - Check											
11/4/2024	1024 Transit & Transport		Net 30	9,275.00	0.00	15.00	9,275.00	9,275.00	10.5.24	BL-14622	Check
							9,275.00	9,275.00			
DICKINSON LAW - VEND-101709 - Check											
10/11/2024	0924 Legal Services		Open Terms	771.00	0.00	0.00	771.00	771.00	1159043	BL-14582	Check
							771.00	771.00			
DOWNEY TIRE PROS - VEND-11879 - EFT File											
6/28/2024	Tire Repair		Open Terms	52.70	0.00	0.00	52.70	52.70	142661	BL-14584	EFT File
							52.70	52.70			
Dust Pros Janitorial - VEND-1011 - EFT File											
11/14/2024	Cleaning Supplies - EL		Net 30	163.18	0.00	15.00	163.18	163.18	3158	BL-14585	EFT File
11/14/2024	1024 Cleaning - EL		Net 30	856.00	0.00	15.00	856.00	856.00	3157	BL-14587	EFT File
11/14/2024	1024 Cleaning - Util Svcs		Net 30	749.00	0.00	15.00	749.00	749.00	3161	BL-14588	EFT File
11/14/2024	Cleaning Supplies - Util Svcs		Net 30	55.10	0.00	15.00	55.10	55.10	3162	BL-14589	EFT File

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
	11/14/2024	1024 Cleaning - Fiber	Net 30	856.00	0.00	15.00	856.00	856.00	3159	BL-14623	EFT File
	11/14/2024	Cleaning Supplies - Fiber	Net 30	82.39	0.00	15.00	82.39	82.39	3160	BL-14624	EFT File
	11/19/2024	Floor Care - Fiber	Net 30	267.50	0.00	15.00	267.50	267.50	3163	BL-14625	EFT File
							3,029.17	3,029.17			
Elisha Brown - VEND-1209 - EFT File											
	11/9/2024	EE Reimb Innovative Conference	Net 30	428.46	0.00	15.00	428.46	428.46	Oct 24	BL-14583	EFT File
							428.46	428.46			
Gen2 Office Furniture - VEND-1423 - EFT File											
	11/21/2024	Office Furniture - Fiber	Net 30	13,987.50	0.00	15.00	13,987.50	13,987.50	7136-39485	BL-14632	EFT File
							13,987.50	13,987.50			
GRAYMONT WESTERN LIME INC - VEND-101387 - EFT File											
	10/14/2024	High Calcium Quicklime	Open Terms	6,096.00	0.00	0.00	6,096.00	6,096.00	14-197497 RI	BL-14590	EFT File
							6,096.00	6,096.00			
Hearst Television Inc - VEND-1131 - EFT File											
	11/21/2024	0924 KCCI	Net 30	7,267.56	0.00	15.00	7,267.56	7,267.56	584337	BL-14633	EFT File
							7,267.56	7,267.56			
HPI, LLC - VEND-1409 - EFT File											
	11/7/2024	Turbine 8 Atomizing Air Compressor	Net 30	6,325.00	0.00	15.00	6,325.00	6,325.00	24-7031-08	BL-14591	EFT File
							6,325.00	6,325.00			
Infomax Office Systems Inc - VEND-1013 - Check											
	11/13/2024	1024 Copier Contract	Net 30	757.78	0.00	15.00	757.78	757.78	37655245	BL-14611	Check
							757.78	757.78			
Insight Direct USA, Inc - VEND-1133 - EFT File											
	11/21/2024	Infoblox Technical Support and Maintenance	Net 30	5,340.64	0.00	15.00	5,340.64	5,340.64	927135638	BL-14626	EFT File
							5,340.64	5,340.64			
Internal Revenue Service - VEND-1307 - Online Payments											
	11/10/2024	941 Income Tax Payable - 101124 Payroll	Net 30	31,367.16	0.00	15.00	31,367.16	31,367.16	101124 Payroll	BL-14592	Online Payments
							31,367.16	31,367.16			
Iowa Department Of Human Services - VEND-1310 - Online Payments											
	11/10/2024	Garnishment Payable - 101124 Payroll	Net 30	723.23	0.00	15.00	723.23	723.23	101124 Payroll	BL-14593	Online Payments

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
							723.23	723.23			
Iowa Department Of Revenue - VEND-1117 - Online Payments											
11/10/2024	IA Income Tax Payable - 101124 Payroll	Net 30	4,936.37	0.00	15.00	4,936.37	4,936.37	101124 Payroll	BL-14594	Online Payments	
							4,936.37	4,936.37			
Iowa One Call - VEND-1015 - EFT File											
11/7/2024	Jul, Aug, Sep24 Locates - EL	Net 30	711.90	0.00	15.00	711.90	711.90	265580	BL-14595	EFT File	
11/7/2024	0924 Locates - WA	Net 30	268.20	0.00	15.00	268.20	268.20	266313	BL-14612	EFT File	
11/7/2024	0924 Locates - Fiber	Net 30	282.60	0.00	15.00	282.60	282.60	266312	BL-14627	EFT File	
							1,262.70	1,262.70			
LINDE INC - VEND-6415 - EFT File											
10/17/2024	Carbon Dioxide	Open Terms	4,084.04	0.00	0.00	4,084.04	4,084.04	45763306	BL-14613	EFT File	
							4,084.04	4,084.04			
Marquee Sports Network - VEND-1165 - EFT File											
11/21/2024	0924 Expanded Basic	Net 30	3,123.79	0.00	15.00	3,123.79	3,123.79	Sep 24	BL-14634	EFT File	
							3,123.79	3,123.79			
McCoy Hardware Inc - VEND-1035 - Check											
10/18/2024	Muriatic Acid	Net 30	34.16	0.00	15.00	34.16	34.16	9.18.24	BL-14628	Check	
							34.16	34.16			
Mid American Energy Co - VEND-1018 - EFT File											
11/10/2024	Electric - 11634 R63, W Substation	Net 30	10.00	0.00	15.00	10.00	10.00	558823520	BL-14596	EFT File	
11/15/2024	Gas - 210 W 2nd Ave	Net 30	14.54	0.00	15.00	14.54	14.54	559035337	BL-14614	EFT File	
11/15/2024	Gas - 909 E Hillcrest Ave, Generator	Net 30	14.54	0.00	15.00	14.54	14.54	559014605	BL-14629	EFT File	
11/15/2024	Gas - 110 S B St	Net 30	16.76	0.00	15.00	16.76	16.76	559017922	BL-14630	EFT File	
11/15/2024	Gas - 111 S Buxton St	Net 30	63.51	0.00	15.00	63.51	63.51	559018038	BL-14637	EFT File	
11/15/2024	Gas - 1300 E Iowa Ave Bldg A	Net 30	34.87	0.00	15.00	34.87	34.87	559004105	BL-14638	EFT File	
11/15/2024	Gas - 1300 E Iowa Ave Bldg B	Net 30	14.54	0.00	15.00	14.54	14.54	558995966	BL-14639	EFT File	
							168.76	168.76			
MILLER ELECTRIC SERVICES - VEND-34642 - Check											
10/17/2024	South Square Project Retainage	Open Terms	4,611.00	0.00	0.00	4,611.00	4,611.00	19034	BL-14597	Check	
10/22/2024	Air Valve Wiring	Open Terms	875.00	0.00	0.00	875.00	875.00	19037	BL-14615	Check	
							5,486.00	5,486.00			

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Mission Square - VEND-1303 - Online Payments											
	11/10/2024	457 Payable - 101124 Payroll	Net 30	6,608.74	0.00	15.00	6,608.74	6,608.74	101124 Payroll	BL-14598	Online Payments
							6,608.74	6,608.74			
Nexstar Broadcasting, Inc - VEND-1092 - EFT File											
	11/21/2024	0924 NewsNation	Net 30	404.04	0.00	15.00	404.04	404.04	Sep 24	BL-14635	EFT File
	11/21/2024	0924 Nexstar - WHO	Net 30	9,056.76	0.00	15.00	9,056.76	9,056.76	584691	BL-14636	EFT File
							9,460.80	9,460.80			
Norwalk Ready Mix Concrete, Inc. - VEND-1119 - Check											
	11/7/2024	Square Project Concrete	Net 30	256.26	0.00	15.00	256.26	256.26	357099	BL-14599	Check
	11/15/2024	Concrete - 901 E Franklin	Net 30	574.50	0.00	15.00	574.50	574.50	357782	BL-14640	Check
							830.76	830.76			
Pella Printing Co, Inc - VEND-1062 - Check											
	11/14/2024	IMU Window Envelopes	Net 30	397.98	0.00	15.00	397.98	397.98	68609	BL-14600	Check
							397.98	397.98			
PETROTECH INC - VEND-102689 - EFT File											
	10/22/2024	Turbine 8 Control Project - Change Order	Open Terms	17,955.05	0.00	0.00	17,955.05	17,955.05	008940	BL-14641	EFT File
							17,955.05	17,955.05			
Power & Tel - VEND-1037 - EFT File											
	10/30/2024	FIBER DROP - 300'	Net 30	3,627.78	0.00	15.00	3,627.78	3,627.78	7992262-01	BL-14642	EFT File
							3,627.78	3,627.78			
SKARSHAUG TESTING LABORATORY INC - VEND-50410 - EFT File											
	10/16/2024	High Voltage PPE Testing	Open Terms	662.87	0.00	0.00	662.87	662.87	281125	BL-14643	EFT File
							662.87	662.87			
Teklink - VEND-1262 - EFT File											
	11/9/2024	Bore & Drop	Net 30	4,367.00	0.00	15.00	4,367.00	4,367.00	WE 8/25/24 Drop	BL-14644	EFT File
							4,367.00	4,367.00			
Terry-Durin Co - VEND-1038 - EFT File											
	11/7/2024	2" Innerduct	Net 30	2,803.60	0.00	15.00	2,803.60	2,803.60	171857-00	BL-14603	EFT File
	11/10/2024	350 MCM URD Triplex	Net 30	10,625.10	0.00	15.00	10,625.10	10,625.10	171327-00	BL-14602	EFT File
							13,428.70	13,428.70			

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, October 23, 2024
11:49:52 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
TrueNorth Companies LC - VEND-1100 - EFT File											
	10/31/2024	September Safety Meeting	Net 30	92.30	0.00	15.00	92.30	92.30	168251	BL-14604	EFT File
							92.30	92.30			
UPHDM Occupational Medicine - VEND-1101 - Check											
	11/13/2024	Employee Testing	Net 30	66.00	0.00	15.00	66.00	66.00	244343	BL-14610	Check
							66.00	66.00			
Vanderpool Plumbing & Heating - VEND-1066 - EFT File											
	11/8/2024	AC Unit Repair Iowa Shop	Net 30	144.77	0.00	15.00	144.77	144.77	7241	BL-14605	EFT File
							144.77	144.77			
VERMEER SALES & SERVICE - VEND-57608 - Check											
	10/17/2024	Directional Drill Fluids	Open Terms	1,529.05	0.00	0.00	1,529.05	1,529.05	P0811205	BL-14646	Check
	10/22/2024	Directional Drill Materials	Open Terms	187.54	0.00	0.00	187.54	187.54	P0565601	BL-14645	Check
							1,716.59	1,716.59			
Warren County Engineer - VEND-1102 - Check											
	10/12/2024	0824 Fuel Distribution	Net 30	3,585.27	0.00	15.00	3,585.27	3,585.27	0824 Fuel	BL-14606	Check
	11/11/2024	0924 Fuel Distribution	Net 30	2,936.95	0.00	15.00	2,936.95	2,936.95	0924 Fuel	BL-14607	Check
							6,522.22	6,522.22			
Waste Management - VEND-1086 - Check											
	11/2/2024	4 yd Dumpster Serv - Recycle Materials	Net 30	76.32	0.00	15.00	76.32	76.32	7128570-0516-9	BL-14647	Check
							76.32	76.32			
WESCO - VEND-60220 - EFT File											
	10/9/2024	FR Clothing	Open Terms	128.40	0.00	0.00	128.40	128.40	230229	BL-14608	EFT File
	10/12/2024	3-Phase Transformer Basement	Open Terms	1,721.16	0.00	0.00	1,721.16	1,721.16	235115	BL-14650	EFT File
	10/16/2024	Marking Tape	Open Terms	63.99	0.00	0.00	63.99	63.99	238399	BL-14648	EFT File
	10/16/2024	Marking Tape, Electric Tape	Open Terms	462.03	0.00	0.00	462.03	462.03	237820	BL-14649	EFT File
							2,375.58	2,375.58			
Wiegert Disposal Inc - VEND-1081 - EFT File											
	11/3/2024	Aug24 Pole Yard 20 yd dumpster/Landfill	Net 30	345.00	0.00	15.00	345.00	345.00	Aug 24	BL-14609	EFT File
							345.00	345.00			

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, October 23, 2024
11:49:52 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
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Total Payment Count:	42	Totals:	\$193,524.14	\$193,524.14
Total Check Count:	11	Check Totals:	\$25,933.81	\$25,933.81
Total EFT File Count:	27	EFT File Totals:	\$123,954.83	\$123,954.83
Total Online Payments Count:	4	Online Payments Totals:	\$43,635.50	\$43,635.50
Total Bank Draft Count:	0	Bank Draft Totals:	\$0.00	\$0.00
Total No Check Count:	0	No Check Totals:	\$0.00	\$0.00

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Approval of Minutes of the prior meetings

Recommendation:

Attachments: 1. 10.14.24 Minutes

**IMU BOARD OF TRUSTEES OF THE ELECTRIC,
WATER AND COMMUNICATIONS UTILITIES
October 14, 2024 Minutes**

The Indianola Municipal Utilities Board of Trustees met in regular session at 5:30 on October 14, 2024 in the IMU Conference Room. Board Chairperson Deb White called the meeting to order and on roll call the following members were present: Dom Selgrade, Lori Smith, Mike Rozga, Deb White and Adam Voigts: There was no public comment.

Voigts moved to approve the Consent Agenda Rozga seconded it. Doug Schull presented the August Financial Report and discussed details with staff. On roll call, the vote was AYES: Selgrade, Rozga, Smith, White and Voigts. NAYS: None. Whereas the Chair declared the motion carried unanimously. The Consent Agenda was as follows:

Approval of Claims

Approval of Minutes of the prior meetings

August financial report

Smith moved to consider Resolution 2024-065 Approving Contract for Downtown Underground Conversion Project, West Alley Premise Wiring Modification and Selgrade seconded it. On roll call, the vote was AYES: White, Smith, Rozga Voigts, and Selgrade. NAYS: None. Whereas the Chair declared the motion carried unanimously.

Rozga moved to consider a Resolution 2024-066 Authorizing the Electric Department Wooden Privacy Fence Replacement Project and Selgrade seconded it. Electric Superintendent Mike Metcalf shared that the fence is over 20 years old and that the posts have failed several times at the ground line and replacement is in the budget this year. Metcalf recommended Top Rail Fencing due to the higher wind rating of the posts over the low bid. On roll call, the vote was AYES: Smith, White, Selgrade, Rozga and Voigts. NAYS: None. Whereas the Chair declared the motion carried unanimously.

Electric Superintendent Mike Metcalf shared that Turbine 8 parts are starting to come back and Petrotech will return for testing in a couple of weeks. Turbine 7's quarterly test went well. Crews have been busy with multiple construction projects. The electric meters have been getting replaced as part of the capital budget. Door knockers are hung for affected customers that weren't home at the time of the change.

Water Superintendent Justin Brand shared that they have been seeding and watering from main break work and Sewer Reduction Meters are offered for free to affected customers. They will be beginning to winterize soon. Next meeting he will be presenting four new projects.

Voigts moved to consider Public Hearing for the Fiber 2024.2025-NOFA7- -RSNo14 Phase 3 Project and Smith seconded it. Fiber Superintendent Kurt Ripperger shared that this is the final two phases of this project. There was no public comment. On roll

call, the vote was AYES: Rozga, Voigts, Smith, White and Selgrade. NAYS: None. Whereas the Chairperson declared the motion carried unanimously. Rozga moved to exit the Public Hearing. Selgrade seconded it. On roll call, the vote was AYES: Voigts, Selgrade, White, Smith and Rozga. NAYS: None.

Smith moved to consider Resolution approving the plans, specifications, form of contract and estimate of cost for the Fiber 2024.2025-NOFA7- -RSNo14 Phase 3 Project Rozga seconded it. On roll call, the vote was AYES: Smith, Voigts, Rozga, White, Selgrade. NAYS: None. Whereas the Chairperson declared the motion carried unanimously.

Voigts moved to consider Resolution Awarding and Approving Contract and Bond to TelCom Construction, LLC for Fiber 2024-2025-NOFA7-PHASE3-RSNO14 Project Selgrade seconded it. Fiber Superintendent Kurt Ripperger shared 10 bids were received and the accepted being over \$300,000 under the engineer's estimate. On roll call, the vote was AYES: Selgrade, White, Smith, Rozga and Voigts. NAYS: None. Whereas the Chairperson declared the motion carried unanimously.

Kurt Ripperger shared that the Fiber Department has been business as usual and they are wrapping up projects before winter.

General Manager Chris DesPlanques thanked all who attended the Solar Groundbreaking. Discussed the City Budget Schedule logistics. He is meeting with MEAN this week. Work Compensation Study is underway with a target completion by early December. He is meeting with reators on October 28th regarding the property purchase. Next month's first meeting will be Tuesday November 12 due to the Veteran's Day Holiday.

It was discussed that a committee will be formed to delegate funds for Project Share. Board member Smith requested Development Goals update from Chris DesPlanques. The meeting was adjourned on a motion by Smith at 5:57PM and seconded by Rozga. Question was called for and on voice vote the Chair declared the motion carried unanimously.

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Resolution Approving Pay App 5 to Miller Electric for the Downtown Underground Conversion Project, South Alley Premise Wiring Project

Recommendation:

Attachments:

1. Miller Recommendation for Payment 5
2. Resolution Approving Pay App 5 for the Downtown Underground Conversion Project; South Alley Premise Wiring Project

RECOMMENDATION FOR PAYMENT

Owner: Indianola Municipal Utilities
Contractor: Miller Electrical Services
Project: Downtown Underground Conversion Project
South Alley Premise Wiring
P&E Project No. 9731

Date of Application 10/16/2024
Application No. 5
Invoice No. 18898

Contract Amount		\$92,220.00
Change Order Adjustments	\$	-
Current Value of Contract	\$	92,220.00

Estimated Percentage of Completion		100.0%
Estimated Value of Completed Work	\$	92,220.00

Less 5% Retainage

Total Amount Due Contractor	\$	92,220.00
Less Previously Approved Applications	\$	87,609.00

Amount Due with this Application	\$	4,611.00
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(Payable to Miller Electrical Services, Inc.)

Payment Remaining on Contract	\$	-
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All work has been completed, and the project has been inspected and accepted by IMU. I recommend this final invoice for payment of retainage in accordance with the terms of the Contract.



Allan Powers, P.E.
P & E Engineering Co.



Miller Electrical Services, Inc.
PO Box 354
Indianola, IA 50125

Phone# (515) 961-5842
E-mail: office@mmillerelectric.com

Date	Invoice #
10/16/2024	19034

Bill To
IMU Att: Mike Metcalf 210 W 2nd Ave Indianola, IA 50125

P.O. No.	Terms	Due Date
	Due in 10 days	10/26/2024

Qty	Description	Rate	Amount
	RETAINAGE BILL - IMU SQUARE PROJECT AMOUNT DUE	4,611.00	4,611.00

We appreciate your business! If you like the work we provided please give a review on Google!

Please send payment within 10 days of receipt of this invoice. A finance charge of 1.5% per month will be assessed on all unpaid amounts more than 30 days past due.

Subtotal	\$4,611.00
Sales Tax (7.0%)	\$0.00
Total	\$4,611.00
Payments/Credits	\$0.00
Balance Due	\$4,611.00

	Invoice 18551		Invoice 18624		Invoice ????		Invoice ????		Invoice ????		Totals	% Complete
Building	Amount	% Complete	Amount	% Complete	Amount	% Complete	Amount	% Complete	Amount	% Complete	Amount	
B47	\$6,000.00	60%	\$3,600.00		\$1,800.00		\$500.00		\$100.00		\$0.00	\$6,000.00 100%
B48	\$5,525.00	100%	\$5,525.00		\$0.00		\$0.00		\$0.00		\$0.00	\$5,525.00 100%
B49	\$8,000.00	91%	\$7,250.00		\$0.00		\$0.00		\$750.00		\$0.00	\$8,000.00 100%
B50	\$8,500.00	90%	\$7,675.00		\$0.00		\$0.00		\$825.00		\$0.00	\$8,500.00 100%
B51	\$7,000.00		\$0.00		\$5,700.00		\$1,000.00		\$300.00		\$0.00	\$7,000.00 100%
B52	\$6,800.00	89%	\$6,050.00		\$750.00		\$0.00		\$0.00		\$0.00	\$6,800.00 100%
B53	\$7,500.00	89%	\$7,100.00		\$400.00		\$0.00		\$0.00		\$0.00	\$7,500.00 100%
B54	\$9,000.00	78%	\$7,000.00		\$0.00		\$2,000.00		\$0.00		\$0.00	\$9,000.00 100%
B55	\$6,200.00		\$0.00		\$3,700.00		\$1,555.00		\$945.00		\$0.00	\$6,200.00 100%
B56	\$6,195.00		\$0.00		\$6,195.00		\$0.00		\$0.00		\$0.00	\$6,195.00 100%
B57	\$2,000.00		\$0.00		\$855.00		\$1,145.00		\$0.00		\$0.00	\$2,000.00 100%
B58	\$2,500.00		\$0.00		\$2,500.00		\$0.00		\$0.00		\$0.00	\$2,500.00 100%
B59	\$9,000.00	58%	\$5,800.00		\$2,000.00		\$0.00		\$1,200.00		\$0.00	\$9,000.00 100%
B61	\$1,000.00		\$0.00		\$100.00		\$800.00		\$100.00		\$0.00	\$1,000.00 100%
B62	\$6,000.00		\$0.00		\$0.00		\$5,000.00		\$1,000.00		\$0.00	\$6,000.00 100%
B70	\$1,000.00		\$0.00		\$1,000.00		\$0.00		\$0.00		\$0.00	\$1,000.00 100%
Work Completed	\$92,220.00		\$50,000.00		\$25,000.00		\$12,000.00		\$5,220.00		\$0.00	\$92,220.00 100%
Retainage (5%)			\$2,500.00		\$1,250.00		\$600.00		\$261.00		\$0.00	\$4,611.00
Total Due			\$47,500.00		\$23,750.00		\$11,400.00		\$4,959.00		\$0.00	

Indianola Municipal Utilities
South Alley Premise Wiring Modification Contract
Miller Electric Invoice Record

		Invoice 18551		Invoice 18624			Invoice 18624			Invoice 18898			Invoice 19034		
Building	Amount	% Complete	Amount	% Complete	Amount Completed	Due this invoice	% Complete	Amount Completed	Due this invoice	% Complete	Amount Completed	Due this invoice	% Complete	Amount Completed	Due this invoice
B47	\$6,000.00	60%	\$3,600.00	90%	\$5,400.00	\$1,800.00	98%	\$5,900.00	\$500.00	100%	\$6,000.00	\$100.00	100%	\$6,000.00	\$0.00
B48	\$5,525.00	100%	\$5,525.00	100%	\$5,525.00	\$0.00	100%	\$5,525.00	\$0.00	100%	\$5,525.00	\$0.00	100%	\$5,525.00	\$0.00
B49	\$8,000.00	91%	\$7,250.00	91%	\$7,250.00	\$0.00	91%	\$7,250.00	\$0.00	100%	\$8,000.00	\$750.00	100%	\$8,000.00	\$0.00
B50	\$8,500.00	90%	\$7,675.00	90%	\$7,675.00	\$0.00	90%	\$7,675.00	\$0.00	100%	\$8,500.00	\$825.00	100%	\$8,500.00	\$0.00
B51	\$7,000.00		\$0.00	81%	\$5,700.00	\$5,700.00	96%	\$6,700.00	\$1,000.00	100%	\$7,000.00	\$300.00	100%	\$7,000.00	\$0.00
B52	\$6,800.00	89%	\$6,050.00	100%	\$6,800.00	\$750.00	100%	\$6,800.00	\$0.00	100%	\$6,800.00	\$0.00	100%	\$6,800.00	\$0.00
B53	\$7,500.00	89%	\$7,100.00	100%	\$7,500.00	\$400.00	100%	\$7,500.00	\$0.00	100%	\$7,500.00	\$0.00	100%	\$7,500.00	\$0.00
B54	\$9,000.00	78%	\$7,000.00	78%	\$7,000.00	\$0.00	100%	\$9,000.00	\$2,000.00	100%	\$9,000.00	\$0.00	100%	\$9,000.00	\$0.00
B55	\$6,200.00		\$0.00	60%	\$3,700.00	\$3,700.00	85%	\$5,255.00	\$1,555.00	100%	\$6,200.00	\$945.00	100%	\$6,200.00	\$0.00
B56	\$6,195.00		\$0.00	100%	\$6,195.00	\$6,195.00	100%	\$6,195.00	\$0.00	100%	\$6,195.00	\$0.00	100%	\$6,195.00	\$0.00
B57	\$2,000.00		\$0.00	43%	\$855.00	\$855.00	100%	\$2,000.00	\$1,145.00	100%	\$2,000.00	\$0.00	100%	\$2,000.00	\$0.00
B58	\$2,500.00		\$0.00	100%	\$2,500.00	\$2,500.00	100%	\$2,500.00	\$0.00	100%	\$2,500.00	\$0.00	100%	\$2,500.00	\$0.00
B59	\$9,000.00	58%	\$5,800.00	87%	\$7,800.00	\$2,000.00	87%	\$7,800.00	\$0.00	100%	\$9,000.00	\$1,200.00	100%	\$9,000.00	\$0.00
B61	\$1,000.00		\$0.00	10%	\$100.00	\$100.00	90%	\$900.00	\$800.00	100%	\$1,000.00	\$100.00	100%	\$1,000.00	\$0.00
B62	\$6,000.00		\$0.00		\$0.00	\$0.00	83%	\$5,000.00	\$5,000.00	100%	\$6,000.00	\$1,000.00	100%	\$6,000.00	\$0.00
B70	\$1,000.00		\$0.00	100%	\$1,000.00	\$1,000.00	100%	\$1,000.00	\$0.00	100%	\$1,000.00	\$0.00	100%	\$1,000.00	\$0.00
Contract	\$92,220.00														
Work Completed			\$50,000.00		\$75,000.00	\$25,000.00		\$87,000.00	\$12,000.00		\$92,220.00	\$5,220.00		\$92,220.00	\$0.00
Retainage (5%)			\$2,500.00		\$3,750.00	\$1,250.00		\$4,350.00	\$600.00		\$4,611.00	\$261.00			\$0.00
Total Due to Date			\$47,500.00		\$71,250.00			\$82,650.00			\$87,609.00			\$92,220.00	
Prev Payments			\$0.00		\$47,500.00			\$71,250.00			\$82,650.00			\$87,609.00	
Due this invoice			\$47,500.00			\$23,750.00			\$11,400.00			\$4,959.00			\$4,611.00

Indianola Municipal Utilities
RESOLUTION NO 2024-

**RESOLUTION APPROVING PAY APP 5 FOR THE DOWNTOWN UNDERGROUND CONVERSION PROJECT;
SOUTH ALLEY PREMISE WIRING PROJECT**

WHEREAS, Miller Electric contracted with the Board of Trustees of the Indianola Municipal Utilities to perform the Downtown Underground Conversion Project; South Alley Premise Wiring Project in the Electric Department; and

WHEREAS, Miller Electric has previously completed work on this project and been paid for their work but for contractually agreed upon 5% retainage which totals \$4,611.00, and

WHEREAS, Upon a review of the project as completed and after consultation with P& E Engineering, it has been determined to be appropriate to release the retainage and pay Miller Electric the retainage balance in the amount of \$4,611.00 at this time, and

WHEREAS, The Board of Trustees of the Indianola Municipal Utilities finds that the retainage should be released and payment made to Miller Electric in the amount of \$4,611.00.

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Board of Trustees that:

1. The retainage to Miller Electric Inc. in the amount of \$4,611.00 is hereby approved; and
2. The IMU staff is authorized and directed to execute the payment application on behalf of the IMU Board of Trustees.

Passed and approved this 28th day of October 2024.

Deb White, Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: October 28, 2024
Subject: Resolution Approving Pay App 11 for Turbine 8 Control Replacement Project

Recommendation:

Attachments:

1. Turbine 8 Controls - Payment Recommendation #11
2. Res 2024- Petrotech Turbine 8 Pay App #11



Petrotech, Inc.

Rotating Machinery Controls

INVOICE

Invoice Number **008940**
Invoice Date October 21, 2024
PO Number **Turbine 8**
Contract 22--0101
Project 22-12-6-0-01
Bill Currency U.S. Dollars
Page 1 of 1

INVOICE TO:

Accounts Payable
Indianola Municipal Utilities
210 W. 2nd Ave
Indianola, IA 50125

FOR ELECTRONIC PAYMENT:

Bank name: WHITNEY BANK
Beneficiary: PETROTECH, INC.
ABA Routing No.: 065400153
Account No.: 715061038
Swift Code: WHITUS44

TERMS: Due in 30 Days + 2% Per Month Thereafter

Project Indianola Muni E Iowa substation power plant
Indianola IA

Turbine 8 control replacement project
Task commissioning

Labor	Hours	Rate	Ext.Amt
CO-007 vibration equipment	1.00	8,618.00	8,618.00
troubleshooting			
Field commssioning labor and expenses	0.15	68,547.00	10,282.05
(including emissions testing)			
retainer	-0.05	18,900.00	-945.00
		Subtotal : Labor	17,955.05

Invoice Total: \$ 17,955.05 (USD)

					Work Progress & Invoicing																				
	Value	Taxes (7%)	Sub-Total	% Complete	Invoice Value	Feb-23		Mar-23		Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		Oct-23		Nov-23	
Performance and Payment Bonds	\$8,866.00		\$8,866.00	100%	\$8,866.00	100%	\$ 8,866	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Project Management, Engineering, Drafting, and Programming // Task 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H	\$208,002.00		\$208,002.00	100%	\$208,002.00	25%	\$ 52,001	\$ -	\$ -	\$ -	\$ -	15%	\$ 31,200	15%	\$ 31,200	15%	\$ 31,200	\$ -	\$ -	10%	\$ 20,800				
Controls Upgrade Materials //Task 01	\$153,133.00	\$10,719.00	\$163,852.00	100%	\$153,133.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Panel Fabrication Labor //Task 01	\$17,000.00		\$17,000.00	100%	\$17,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	20%	\$ 3,400	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Panel Testing and FAT //Task 1D	\$19,778.00		\$19,778.00	100%	\$19,778.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Field Installation Materials // Task 02	\$9,178.00	\$642.00	\$9,820.00	100%	\$9,178.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Field Installation Labor and Expenses // Task 03	\$93,686.00		\$93,686.00	100%	\$93,686.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Field Commissioning Labor and Expenses (Including Emissions Testing) // Task 04	\$68,547.00		\$68,547.00	100%	\$68,547.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Training // Task 08	\$10,363.00		\$10,363.00	100%	\$10,363.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CO-003 Diesel Engine Temperature and Pressure Signals // Task 1C	\$1,524.00		\$1,524.00	100%	\$1,524.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CO-004 VITEC Velocity Transd. // Task 01, 1C, 1E, 1F	\$15,221.00		\$15,221.00	100%	\$15,221.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CO-005 Frequency Repeters	\$3,967.00		\$3,967.00	100%	\$3,967.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CO-006 Second Emission Test	\$37,294.00		\$0.00	0%	\$0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CO-007 Vibration Equipment Troubleshooting	\$8,618.00		\$8,618.00	100%	\$8,618.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Contract	\$655,177.00	\$11,361.00	\$629,244.00	94%	\$617,883.00	\$ 60,867	\$ -	\$ -	\$ -	\$ -	\$ 31,200	\$ 31,200	\$ 34,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Petrotech retainer (5%)					\$ (30,894)	\$ (3,043)	\$ -	\$ -	\$ -	\$ -	\$ (1,560)	\$ (1,560)	\$ (1,730)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Invoice value					\$ 617,883	\$ 57,823	\$ -	\$ -	\$ -	\$ -	\$ 29,640	\$ 29,640	\$ 32,870	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
IMU						Inv. #7909					Inv. #7919A	Inv. #8093	Inv. #8155											Inv. #8346	

	Value	Taxes (7%)	Sub-Total	% Complete	Invoice Value	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Performance and Payment Bonds	\$8,866.00		\$8,866.00	100%	\$8,866.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Project Management, Engineering, Drafting, and Programming // Task 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H	\$208,002.00		\$208,002.00	100%	\$208,002.00	\$ -	\$ -	\$ -	10%	\$ 20,800	10%	\$ 20,800	\$ -	\$ -	\$ -	\$ -
Controls Upgrade Materials //Task 01	\$153,133.00	\$10,719.00	\$163,852.00	100%	\$153,133.00	\$ -	\$ -	\$ -	95%	\$145,476	5%	\$ 7,657	\$ -	\$ -	\$ -	\$ -
Panel Fabrication Labor //Task 01	\$17,000.00		\$17,000.00	100%	\$17,000.00	\$ -	\$ -	60%	\$ 10,200	20%	\$ 3,400	\$ -	\$ -	\$ -	\$ -	\$ -
Panel Testing and FAT //Task 1D	\$19,778.00		\$19,778.00	100%	\$19,778.00	\$ -	\$ -	20%	\$ 3,956	80%	\$ 15,822	\$ -	\$ -	\$ -	\$ -	\$ -
Field Installation Materials // Task 02	\$9,178.00	\$642.00	\$9,820.00	100%	\$9,178.00	\$ -	\$ -	\$ -	100%	\$ 9,178	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Field Installation Labor and Expenses // Task 03	\$93,686.00		\$93,686.00	100%	\$93,686.00	\$ -	\$ -	\$ -	\$ -	100%	\$ 93,686	\$ -	\$ -	\$ -	\$ -	\$ -
Field Commissioning Labor and Expenses (Including Emissions Testing) // Task 04	\$68,547.00		\$68,547.00	100%	\$68,547.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	60%	\$ 41,128	\$ -	25%	\$ 17,137
Training // Task 08	\$10,363.00		\$10,363.00	100%	\$10,363.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%	\$ 10,363	\$ -
CO-003 Diesel Engine Temperature and Pressure Signals // Task 1C	\$1,524.00		\$1,524.00	100%	\$1,524.00	\$ -	\$ -	\$ -	\$ -	100%	\$ 1,524	\$ -	\$ -	\$ -	\$ -	\$ -
CO-004 VITEC Velocity Transd. // Task 01, 1C, 1E, 1F	\$15,221.00		\$15,221.00	100%	\$15,221.00	\$ -	\$ -	\$ -	\$ -	80%	\$ 12,177	\$ -	\$ -	\$ -	20%	\$ 3,044
CO-005 Frequency Repeters	\$3,967.00		\$3,967.00	100%	\$3,967.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%	\$ 3,967	\$ -
CO-006 Second Emission Test	\$37,294.00		\$0.00	0%	\$0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CO-007 Vibration Equipment Troubleshooting	\$8,618.00		\$8,618.00	100%	\$8,618.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%
Total Contract	\$655,177.00	\$11,361.00	\$629,244.00	94%	\$617,883.00	\$ -	\$ -	\$ 14,156	\$ 194,677	\$ 135,844	\$ -	\$ 41,128	\$ -	\$ 34,511	\$ -	\$ -
Petrotech																
retainer (5%)					\$ (30,894)	\$ -	\$ -	\$ (708)	\$ (9,734)	\$ (6,792)	\$ -	\$ (2,056)	\$ -	\$ (1,726)	\$ -	\$ -
Invoice value					\$ 617,883	\$ -	\$ -	\$ 13,448	\$ 184,943	\$ 129,051	\$ -	\$ 39,072	\$ -	\$ 32,785	\$ -	\$ -
IMU								Inv. #8539	Inv. #8540	Inv. #8627		Inv. #8761		Inv. #8825		Inv. #8826

	Value	Taxes (7%)	Sub-Total	% Complete	Invoice Value	Oct-24
Performance and Payment Bonds	\$8,866.00		\$8,866.00	100%	\$8,866.00	\$ -
Project Management, Engineering, Drafting, and Programming // Task 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H	\$208,002.00		\$208,002.00	100%	\$208,002.00	\$ -
Controls Upgrade Materials //Task 01	\$153,133.00	\$10,719.00	\$163,852.00	100%	\$153,133.00	\$ -
Panel Fabrication Labor //Task 01	\$17,000.00		\$17,000.00	100%	\$17,000.00	\$ -
Panel Testing and FAT //Task 1D	\$19,778.00		\$19,778.00	100%	\$19,778.00	\$ -
Field Installation Materials // Task 02	\$9,178.00	\$642.00	\$9,820.00	100%	\$9,178.00	\$ -
Field Installation Labor and Expenses // Task 03	\$93,686.00		\$93,686.00	100%	\$93,686.00	\$ -
Field Commissioning Labor and Expenses (Including Emissions Testing) // Task 04	\$68,547.00		\$68,547.00	100%	\$68,547.00	\$ 10,282
Training // Task 08	\$10,363.00		\$10,363.00	100%	\$10,363.00	\$ -
CO-003 Diesel Engine Temperature and Pressure Signals // Task 1C	\$1,524.00		\$1,524.00	100%	\$1,524.00	\$ -
CO-004 VITEC Velocity Transd. // Task 01, 1C, 1E, 1F	\$15,221.00		\$15,221.00	100%	\$15,221.00	\$ -
CO-005 Frequency Repeters	\$3,967.00		\$3,967.00	100%	\$3,967.00	\$ -
CO-006 Second Emission Test	\$37,294.00			0%	\$0.00	\$ -
CO-007 Vibration Equipment Troubleshooting	\$8,618.00		\$8,618.00	100%	\$8,618.00	\$ 8,618
Total Contract	\$655,177.00	\$11,361.00	\$629,244.00	94%	\$617,883.00	18,900
Petrotech						
retainer (5%)					\$ (30,894)	(945)
Invoice value					\$ 617,883	\$ 17,955
IMU						1. #8940

RECOMMENDATION FOR PAYMENT

Owner: Indianola Municipal Utilities
Contractor: Petrotech, Inc.
Project: Turbine 8 Control Replacement
P&E Project No. 9900

Date of Application 8/30/2024
Application No. 11
Invoice No. 8940

Contract Amount	\$599,914.00
Change Order Adjustments	\$ 66,624.00
Current Value of Contract	\$ 666,538.00

Estimated Percentage of Completion	92.7%
Estimated Value of Completed Work	\$ 617,883.00

Less 5% Retainage	\$ 30,894.15
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Total Amount Due Contractor	\$ 586,988.85
Less Previously Approved Applications	\$ 569,033.78

Amount Available with this Application	\$ 17,955.07
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Amount Requested with this Application	\$ 17,955.05
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(Payable to Petrotech, Inc.)

Payment Remaining on Contract	\$ 79,549.17
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The status of the work as reported by Petrotech is shown on the attached sheets. I recommend the above amounts for payment, based on the status of the work, and the terms of the Contract.



Jared Kline, P.E.
P & E Engineering Co.

Indianola Municipal Utilities
RESOLUTION NO 2024-

**RESOLUTION APPROVING PAYMENT APPLICATION 11
FOR TURBINE 8 CONTROL REPLACEMENT PROJECT**

WHEREAS, the Board of Trustees of the Indianola Municipal Utilities has deemed it necessary to replace the Turbine 8 Control in the Electric Department; and

WHEREAS, on December 12, 2022, the Board passed and approved Resolution 2022-058 “Making Award of Construction Contract for the Turbine 8 Control Replacement Project”; and

WHEREAS, the contract was awarded to Petrotech Inc. in the amount of \$599,914.00; and

WHEREAS, on October 21st, 2024, Petrotech submitted a recommendation for payment #11 for said contract in the amount of \$17,955.05.

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Board of Trustees that:

1. The payment to Petrotech Inc. in the amount of \$17,955.05 is hereby approved; and
2. The IMU staff is authorized and directed to execute the payment application on behalf of the IMU Board of Trustees.

Passed and approved this 28th day of October 2024.

Deb White Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: October 28, 2024
Subject: Public Hearing for the 69kV Line Relay Replacement Project

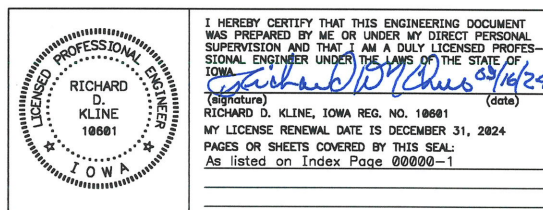
Recommendation:

Attachments: 1. 69kV Line Relay Replacement Issued for Bidding Sealed 2024-09-23

INDIANOLA MUNICIPAL UTILITIES

EAST IOWA SUBSTATION AND WESTSIDE SUBSTATION 69KV LINE RELAY REPLACEMENT PROJECT

CONTRACT AND SPECIFICATIONS



INDIANOLA MUNICIPAL UTILITIES



ISSUED FOR BIDDING
SEPTEMBER 23, 2024

P & E ENGINEERING CO.
POWER SYSTEM ANALYSIS AND DESIGN

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 00000 - Index

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NOTICE OF HEARING AND LETTING 69kV LINE RELAY REPLACEMENT PROJECT

Sealed proposals will be received by the Board of Trustees of Indianola Municipal Utilities (IMU), Indianola, Iowa, (Buyer) at the IMU Customer Service Center, 210 W. 2nd Ave., Indianola, Iowa until 2:00 P.M. local time on October 22, 2024 for a project identified as the 69kV LINE RELAY REPLACEMENT PROJECT, and as described in detail in the specifications for the project now on file in the office of the Board Secretary. Proposals will be opened in public session at that time. Proposals will be acted upon by the Board of Trustees at a meeting to be held at the IMU Customer Service Center, 210 W. 2nd Ave., Indianola, Iowa at 5:30 P.M. local time on October 28, 2024, or at such later time and place as may then be fixed. At that time and place a hearing will be held on the proposed plans, specifications, form of contract and estimate of cost for the improvements, and at the hearing any interested person may appear and file objections to the project or to the cost of the improvements.

The contract includes providing materials and performing work necessary to replace, test, and commission relaying on three 69kV line terminals, two at the East Iowa Substation, 1300 E. Iowa Avenue, Indianola, IA and one at the Westside Substation, 11634 R63 Hwy, Indianola, IA.

Each proposal shall be sealed in an envelope marked "69kV LINE RELAY REPLACEMENT PROJECT". Each bid must be accompanied in a separate envelope by a bid bond, certified check or cashier's check drawn on a State of Iowa or federally chartered bank, or a certified share draft on a State of Iowa or federally chartered credit union, in an amount not less than five per cent (5%) of the total value of the Proposal, and made payable to the Buyer as a security that the bidder will enter into a contract for the Work within ten (10) days after the award of the contract to such bidder.

Bidders shall not be permitted to withdraw their bids for a period of sixty (60) days after they are opened.

100% of the amount due the successful bidder will be paid not earlier than 31 days from the final acceptance of the improvements by IMU, subject to the conditions and in accordance with the provisions of Chapter 384 and 573 of the Code of Iowa

Payment to the Contractor for completion of the improvements will be made in cash derived from available cash on hand from revenue and such other sources as may be available to IMU. The City of Indianola shall not incur any general obligation for the Improvements. The contract for the furnishing of the improvements shall not constitute a general obligation of the City of Indianola nor be payable in any manner by taxation.

If the successful bidder fails to execute a contract with IMU for the Improvements, the certified check or cashier's check deposited by the Supplier shall be cashed, or the bid bond declared forfeited, and proceeds retained by IMU as agreed liquidated damages.

Bidders will be required to complete a Bidder Status Form from the Iowa Department of Labor regarding Bidder's resident status within the State of Iowa and to submit that form with the bid. Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.

Work is to commence on or about November 14, 2024 and shall be substantially complete not later than March 31, 2025. Work shall be completed and ready for final payment not later than 30 days after substantial completion.

Plans and specifications governing the furnishing of materials have been prepared by P&E Engineering Co., 500 SW 7th Street, Suite 100, Des Moines, Iowa 50309. The plans and specifications, prior proceedings of IMU referring to and defining the improvements and a proposed contract are hereby made a part of this notice by reference. The proposed contracts shall be executed in accordance with them. Copies of the specifications may be obtained from P & E Engineering Co.

By virtue of statutory authority, preference will be given to products and provisions grown and produced within the State of Iowa and Iowa domestic labor.

IMU reserves the right to reject any or all proposals and to waive informalities. Published upon order of the Board of Trustees Indianola Municipal Utilities, Indianola, Iowa.

MONICA THOMPSON
Board Secretary

**INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 00200 – Instructions to Bidders**

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ARTICLE 1—DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders. The Issuing Office for this project will be P & E Engineering Co., 500 SW 7th St., Suite 100, Des Moines, IA 50309.

ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Contract for Construction of a Small Project for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Bidder may register as a plan holder and obtain complete sets of Bidding Documents in printed or electronic (digital) format (compact disk, USB, or direct transmittal) from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.
- 2.05 *Electronic Documents*
- A. Bidding Documents will be made available as Electronic Documents. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf). It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

- B. The Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.05.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.
- C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.
 - 1. Electronic Documents that are available in native file format include:
 - a. None
 - 2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.
 - 3. The Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.
 - 4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 Bidders must complete a Bidder Status Form from the Iowa Department of Labor regarding the Contractor's resident status within the State of Iowa and submit that form with the bid. Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.
- 3.02 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder must submit the following information:
 - A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.

- 3.03 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.04 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

- 4.01 A pre-bid conference will not be held for this project.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 *Site Visit and Testing by Bidders*

- A. Bidder may visit the Site and conduct a thorough visual examination of the Site and adjacent areas.
- B. Bidders visiting the Site are required to arrange their own transportation to the Site.
- C. All access to the Site other than during a regularly scheduled Site Visit must be coordinated through the following Owner contact. Bidder must conduct the required Site visit during normal working hours.

Mr. Nate Edwards
Lead Generation
Indianola Municipal Utilities
515-961-9444 (office)
nedwards@indianolaiowa.gov

- D. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- E. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

5.02 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.03 *Other Work at the Site*

- A. Reference is made to Article 4 of the General Requirements for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

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ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder’s examination of Project documentation and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents via email to Rich Kline at rdkline@peengr.com. Email message must include “Question regarding IMU Line Relay Replacement Project” in the subject line. Confirm the email has been received by calling Rich Kline at 515-989-3083.
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **5** percent of Bidder’s maximum Bid price (determined by adding the base bid and all alternates) and in the form prescribed in the NOTICE OF HEARING AND LETTING.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 10 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture will be Owner’s exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the

Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Contract for Construction of a Small Project.

ARTICLE 10—SUBSTITUTE AND “OR EQUAL” ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for any portion of the Work within five days after Bid opening:
- 11.02 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute.
- 11.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to another Bidder who submits the Bid in the best interests of the project that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.04 of the Contract for Construction of a Small Project.

ARTICLE 12—PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
 - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 12.06 A Bid by an individual must show the Bidder’s name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder’s authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder’s licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such

certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Lump Sum*

- A. Bidders must submit a Bid on a lump sum basis for each item listed in the lump sum section of the Bid Form.

ARTICLE 14—SUBMITTAL OF BID

14.01 The Bidding Documents include one separate unbound copy of the Bid Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security, Bidder Status Form, and the other documents required to be submitted under the terms of Article 2 of the Bid Form. See Paragraph 12.02 for submittal of a Bid from Bid Documents that are received as Electronic Documents

14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, and the name and address of Bidder. This package shall be plainly labeled "BID ENCLOSED."

14.03 The sealed envelope containing the Bid and all required documents must be plainly marked with the notation "BID ENCLOSED".

14.04 The sealed envelope containing the bid security must be plainly marked with the notation "BID SECURITY ENCLOSED".

14.05 A Bid sent by mail shall be addressed to:

Indianola Municipal Utilities
Attn: Ms. Chris Longer
210 West 2nd Avenue
Indianola, IA 50125
515-961-9444

14.06 A bid sent by delivery service or hand delivered shall be delivered to:

Indianola Municipal Utilities
Attn: Ms. Chris Longer
210 West 2nd Avenue
Indianola, IA 50125
515-961-9444

14.07 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

- 16.01 Bids will be opened at the time and place indicated in the Notice of Hearing and Letting and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder whose bid is considered to be in the best interest of the Owner.
- 18.05 *Evaluation of Bids*
 - A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

- B. For the determination of the apparent successful Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
- 18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

ARTICLE 20—SIGNING OF CONTRACT FOR CONSTRUCTION OF A SMALL PROJECT

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Contract for Construction of a Small Project along with the other Contract Documents as identified in the Contract for Construction of a Small Project. Within 10 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Contract for Construction of a Small Project and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Contract for Construction of a Small Project to Successful Bidder, together with printed and/or electronic copies of the Contract Documents as stated in Paragraph 2.02 of the Contract for Construction of a Small Project.

ARTICLE 21—SALES AND USE TAXES

- 21.01 Owner is subject to state and local sales and use taxes on materials and equipment to be incorporated in the Work. **SAID TAXES SHALL BE INCLUDED IN THE BID.**

**INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 00410 – Bid Form for Construction Contract**

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders and the Contract for Construction of a Small Project.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

Indianola Municipal Utilities
210 West 2nd Avenue
Indianola, IA 50125

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
- B. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- C. A completed Bidder Status Form regarding the Contractor's resident status within the State of Iowa. A blank Bidder Status Form follows this Bid Form.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Lump Sum Bids*

- A. Bidder (_____) will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s):

- 1. Lump Sum Price (Single Lump Sum)

Lump Sum Bid Price	\$
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ARTICLE 4—TIME OF COMPLETION

4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Article 4 of the Contract for Construction of a Small Project (Section 00522) on or before the dates or within the number of calendar days indicated in the Contract.

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**INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 00410 – Bid Form for Construction Contract**

ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. If necessary, Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
 5. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

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Section 00410 – Bid Form for Construction Contract

6. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
7. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
8. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 Bidder's Certifications

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 6.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable)

To be completed by all bidders		Part A
Please answer "Yes" or "No" for each of the following:		
☐ Yes ☐ No	My company is authorized to transact business in Iowa. (To help you determine if your company is authorized, please review the worksheet on the next page).	
☐ Yes ☐ No	My company has an office to transact business in Iowa.	
☐ Yes ☐ No	My company's office in Iowa is suitable for more than receiving mail, telephone calls, and e-mail.	
☐ Yes ☐ No	My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.	
☐ Yes ☐ No	My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.	
If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.		
If you answered "No" to one or more questions above, your company is a nonresident bidder. Please complete Parts C and D of this form.		

Worksheet: Authorization to Transact Business

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

- ☐ Yes ☐ No My business is currently registered as a contractor with the Iowa Division of Labor.
- ☐ Yes ☐ No My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.
- ☐ Yes ☐ No My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.
- ☐ Yes ☐ No My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.
- ☐ Yes ☐ No My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.
- ☐ Yes ☐ No My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

Bidder Status Form

To be completed by all bidders

Part A

Please answer "Yes" or "No" for each of the following:

☐ Yes ☐ No

My company is authorized to transact business in Iowa.
(To help you determine if your company is authorized, please review the worksheet on the next page).

☐ Yes ☐ No

My company has an office to transact business in Iowa.

☐ Yes ☐ No

My company's office in Iowa is suitable for more than receiving mail, telephone calls, and e-mail.

☐ Yes ☐ No

My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.

☐ Yes ☐ No

My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.

If you answered "No" to one or more questions above, your company is a nonresident bidder. Please complete Parts C and D of this form.

To be completed by resident bidders

Part B

My company has maintained offices in Iowa during the past 3 years at the following addresses:

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

You may attach additional sheet(s) if needed.

City, State, Zip: _____

To be completed by non-resident bidders

Part C

1. Name of home state or foreign country reported to the Iowa Secretary of State:

2. Does your company's home state or foreign country offer preferences to resident bidders, resident labor force preferences or any other type of preference to bidders or laborers?

☐ Yes ☐ No

3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

You may attach additional sheet(s) if needed.

To be completed by all bidders

Part D

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

Firm Name: _____

Signature: _____ Date: _____

Worksheet: Authorization to Transact Business

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

- ☐ Yes ☐ No My business is currently registered as a contractor with the Iowa Division of Labor.
- ☐ Yes ☐ No My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.
- ☐ Yes ☐ No My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.
- ☐ Yes ☐ No My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.
- ☐ Yes ☐ No My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.
- ☐ Yes ☐ No My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

BID BOND (PENAL SUM FORM)

Bidder Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: INDIANOLA MUNICIPAL UTILITIES Address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Bid Project <i>(name and location)</i> : 69KV LINE RELAY REPLACEMENT PROJECT INDIANOLA, IOWA Bid Due Date: OCTOBER 22, 2024
Bond Penal Sum: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

CONTRACT FOR CONSTRUCTION OF A SMALL PROJECT

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This Contract is by and between INDIANOLA MUNICIPAL UTILITIES (Owner) and _____ (Contractor).

Owner and Contractor hereby agree as follows:

ARTICLE 1 - THE WORK

1.01 Work

- A. Work includes all labor, materials, equipment, services, and documentation necessary to construct the Project defined herein. The Work may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
- B. The Contractor shall complete all Work as specified or indicated in the Contract Documents. The Project is generally described as follows:
 - 1. **69KV LINE RELAY REPLACEMENT PROJECT** which includes providing materials and labor to replace relays and devices at the East Iowa Substation and the Westside Substation, including device installation, wiring, relay and SCADA system testing, making incidental changes to relay, meter, and RTAC data concentrator settings, providing serial extender settings, and testing and commissioning of the protection and SCADA systems.
 - 2. The Site of the Work includes property, easements, and designated work areas described in greater detail in the Contract Documents but generally located at the Indianola Municipal Utilities East Iowa Substation and Westside Substation.

ARTICLE 2 - CONTRACT DOCUMENTS

2.01 Intent of Contract Documents

- A. It is the intent of the Contract Documents to describe a functionally complete project. The Contract Documents do not indicate or describe all the Work required to complete the Project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Owner and Engineer. This Contract supersedes prior negotiations, representations, and agreements, whether written or oral. The Contract Documents are complementary; what is required by one part of the Contract Documents is as binding as if required by other parts of the Contract Documents.
- B. During the performance of the Work and until final payment, Contractor and Owner shall submit all matters in question concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents to the Engineer.

Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

- C. Engineer will render a written clarification, interpretation, or decision on the issue submitted, or initiate a modification to the Contract Documents.
- D. Contractor, and its subcontractors and suppliers, shall not have or acquire any title to or ownership rights to any of the Drawings, Specifications, or other documents (including copies or electronic media editions) prepared by Engineer or its consultants.

2.02 Contract Documents Defined

A. The Contract Documents consist of the following documents:

- 1. This Contract.
- 2. Performance bond.
- 3. Payment bond.
- 4. Specifications listed in the Table of Contents.
- 5. Appendices listed in the Table of Contents.
- 6. Drawings as listed on the Drawing Sheet Indexes.
- 7. Addenda.
- 8. Exhibits to this Contract (enumerated as follows):
 - a. Contractor Bid.
- 9. The following which may be delivered or issued on or after the Effective Date of the Contract:
 - a. Work Change Directives (EJCDC C-940).
 - b. Change Orders (EJCDC C-941).
 - c. Field Orders.

ARTICLE 3 - ENGINEER

3.01 Engineer

- A. The Engineer for this Project is P&E Engineering Co. with offices at 500 SW 7th Street Suite 100, Des Moines, IA 50309.

ARTICLE 4 - CONTRACT TIMES

4.01 Contract Times

- A. The Work will be substantially completed on or before March 31, 2025 and completed and ready for final payment on or before April 30, 2025.

4.02 Liquidated Damages

- A. Liquidated damages will not be assessed.

4.03 Delays in Contractor's Progress

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor or their subcontractors or suppliers.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times.
- D. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor or Contractor's subcontractors or suppliers.

4.04 Progress Schedules

- A. Contractor shall develop a progress schedule and submit to the Engineer for review and comment before starting Work on the Site. The Contractor shall modify the schedule in accordance with the comments provided by the Engineer.
- B. The Contractor shall update and submit the progress schedule to the Engineer each month. The Owner may withhold payment if the Contractor fails to submit the schedule.

ARTICLE 5 - CONTRACT PRICE

5.01 Payment

- A. Owner shall pay Contractor in accordance with the Contract Documents, the lump sum amount of \$**[Contract Price]** for all Work.

ARTICLE 6 - BONDS AND INSURANCE

6.01 Bonds

- A. Before starting Work, Contractor shall furnish a performance bond and a payment bond from surety companies that are duly licensed or authorized to issue bonds in the required amounts in the jurisdiction in which the Project is located. Each bond shall be in an amount equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until the completion of the correction period specified in Paragraph 7.12 but, in any case, not less than one year after the date when final payment becomes due.

6.02 Insurance

- A. Before starting Work, Contractor shall furnish evidence of insurance from companies that are duly licensed or authorized in the jurisdiction in which the Project is located with a

minimum AM Best rating of A-VII or better. Contractor shall provide insurance in accordance with the following:

1. Contractor shall provide coverage for not less than the following amounts, or greater where required by Laws and Regulations:

- a. Workers' Compensation:

State:	<u>Statutory</u>
Employer's Liability:	
Bodily Injury, each Accident	\$ <u>1,000,000</u>
Bodily Injury By Disease, each Employee	\$ <u>1,000,000</u>
Bodily Injury/Disease Aggregate	\$ <u>1,000,000</u>

- b. Commercial General Liability:

General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>2,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

- c. Automobile Liability herein:

Bodily Injury:	
Each Person	\$ <u>500,000</u>
Each Accident	\$ <u>1,000,000</u>
Property Damage:	
Each Accident	\$ <u>500,000</u>
Combined Single Limit of:	\$ <u>1,000,000</u>

- d. Excess or Umbrella Liability:

Per Occurrence	\$ <u>3,000,000</u>
General Aggregate	\$ <u>3,000,000</u>

- e. Contractor's Pollution Liability:

Each Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>1,000,000</u>

- B. All insurance policies required to be purchased and maintained will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the insured and additional insured.

- C. Automobile liability insurance provided by Contractor shall provide coverage against claims for damages because of bodily injury or death of any person or property damage arising out

of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

- D. Contractor's commercial general liability policy shall be written on a 1996 or later ISO commercial general liability occurrence form and include the following coverages and endorsements:
 - 1. Products and completed operations coverage maintained for three years after final payment;
 - 2. Blanket contractual liability coverage to the extent permitted by law;
 - 3. Broad form property damage coverage; and
 - 4. Severability of interest; underground, explosion, and collapse coverage; personal injury coverage.
- E. The Contractor's commercial general liability and automobile liability, umbrella or excess, and pollution liability policies shall include and list Owner and Engineer and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each as additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis.
 - 1. Additional insured endorsements will include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 - 2. Contractor shall provide ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent for design professional additional insureds.
- F. Umbrella or excess liability insurance shall be written over the underlying employer's liability, commercial general liability, and automobile liability insurance. Subject to industry-standard exclusions, the coverage afforded shall be procured on a "follow the form" basis as to each of the underlying policies. Contractor may demonstrate to Owner that Contractor has met the combined limits of insurance (underlying policy plus applicable umbrella) specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policies and an umbrella or excess liability policy.
- G. The Contractor shall provide property insurance covering physical loss or damage during construction to structures, materials, fixtures, and equipment, including those materials, fixtures, or equipment in storage or transit.
- H. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 15.

ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. Contractor shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, safety, and procedures of construction.
- B. Contractor shall assign a competent resident superintendent who is to be present at all times during the execution of the Work. This resident superintendent shall not be replaced without written notice to and approval by the Owner and Engineer except under extraordinary circumstances.
- C. Contractor shall at all times maintain good discipline and order at the Site.
- D. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday.

7.02 Other Work at the Site

- A. In addition to and apart from the Work of the Contractor, other work may occur at or adjacent to the Site. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be new, of good quality and shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable supplier, except as otherwise may be provided in the Contract Documents.

7.04 Subcontractors and Suppliers

- A. Contractor may retain subcontractors and suppliers for the performance of parts of the Work. Such subcontractors and suppliers must be acceptable to Owner.

7.05 Quality Management

- A. Contractor is fully responsible for managing quality to ensure Work is completed in accordance with the Contract Documents.

7.06 Licenses, Fees and Permits

- A. Contractor shall pay all license fees and royalties and assume all costs incident to performing the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others.

- B. Contractor shall obtain and pay for all construction permits and licenses unless otherwise provided in the Contract Documents.

7.07 Laws and Regulations; Taxes

- A. Contractor shall give all notices required by and shall comply with all local, state, and federal Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages if Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations.
- C. Contractor shall pay all applicable sales, consumer, use, and other similar taxes Contractor is required to pay in accordance with Laws and Regulations.

7.08 Record Documents

- A. Contractor shall maintain one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved shop drawings in a safe place at the Site. Contractor shall annotate them to show changes made during construction. Contractor shall deliver these record documents to Engineer upon completion of the Work.

7.09 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work.
- B. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. All persons on the Site or who may be affected by the Work;
 - 2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.
- C. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, or anyone for whose acts the Contractor may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Contract Documents or to the acts or omissions of Owner or Engineer and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor).
- D. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

- E. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor shall act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.10 Shop Drawings, Samples, and Other Submittals

- A. Contractor shall review and coordinate the shop drawing and samples with the requirements of the Work and the Contract Documents and shall verify all related field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information.
- B. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
- C. With each submittal, Contractor shall give Engineer specific written notice, in a communication separate from the submittal, of any variations that the shop drawing or sample may have from the requirements of the Contract Documents.
- D. Engineer will provide timely review of shop drawings and samples.
- E. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs.
- F. Engineer's review and approval of a separate item does not indicate approval of the assembly in which the item functions.
- G. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of shop drawings and submit, as required, new samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
- H. Shop drawings are not Contract Documents.

7.11 Warranties and Guarantees

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

7.12 Correction Period

- A. If within one year after the date of substantial completion, any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly and without cost to Owner, correct such defective Work.

7.13 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts they may be liable.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Owner's Responsibilities

- A. Except as otherwise provided in the Contract Documents, Owner shall issue all communications directly to Contractor. Engineer will be responsive to questions from Owner and Contractor.
- B. Owner shall make payments to Contractor as provided in this Contract.
- C. Owner shall provide Site and easements required to construct the Project.
- D. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, unless stated elsewhere in the Contract Documents, Owner shall have sole authority and responsibility for such coordination.
- E. The Owner shall be responsible for performing inspections and tests required by applicable codes.
- F. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- G. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- H. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 Engineer's Status

- A. Engineer will be Owner's representative during construction. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in this Contract.

- B. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any subcontractor, any supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- C. Engineer will make visits to the Site at intervals appropriate to the various stages of construction. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work.
- D. Engineer has the authority to reject Work if Contractor fails to perform Work in accordance with the Contract Documents.
- E. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work.
- F. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

ARTICLE 10 - CHANGES IN THE WORK

10.01 Authority to Change the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work.

10.02 Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in the Work which are: (a) ordered by Owner or (b) agreed to by the parties or (c) resulting from the Engineer's decision, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 - 3. Changes in the Contract Price or Contract Times or other changes which embody the substance of any final binding results under Article 12.
- B. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 11 - DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS

11.01 Differing Conditions Process

- A. If Contractor believes that any subsurface or physical condition including but not limited to utilities or other underground facilities that are uncovered or revealed at the Site either differs materially from that shown or indicated in the Contract Documents or is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
- B. After receipt of written notice, Engineer will promptly:
 - 1. Review the subsurface or physical condition in question;
 - 2. Determine necessity for Owner obtaining additional exploration or tests with respect to the condition;
 - 3. Determine whether the condition falls within the differing site condition as stated herein;
 - 4. Obtain any pertinent cost or schedule information from Contractor;
 - 5. Prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and
 - 6. Advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

ARTICLE 12 - CLAIMS AND DISPUTE RESOLUTION

12.01 Claims Process

- A. The party submitting a claim shall deliver it directly to the other party to the Contract and the Engineer promptly (but in no event later than 10 days) after the start of the event giving rise thereto.
- B. The party receiving a claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the claim through the exchange of information and direct negotiations. All actions taken on a claim shall be stated in writing and submitted to the other party.

- C. If efforts to resolve a claim are not successful, the party receiving the claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the claim within 45 days, the claim is deemed denied.
- D. If the dispute is not resolved to the satisfaction of the parties, Owner or Contractor shall give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction unless the Owner and Contractor both agree to an alternative dispute resolution process.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION OF DEFECTIVE WORK

13.01 Tests and Inspections

- A. Owner and Engineer will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access.
- B. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests. Testing and commissioning services will be provided by Contractor as part of the Work.
- C. If any Work that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense.

13.02 Defective Work

- A. Contractor shall ensure that the Work is not defective.
- B. Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. The Contractor shall promptly correct all such defective Work.
- E. When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. If the Work is defective or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

ARTICLE 14 - PAYMENTS TO CONTRACTOR

14.01 Progress Payments

- A. The Contractor shall prepare a schedule of values that will serve as the basis for progress payments. The schedule of values will be in a form of application for payment acceptable to Engineer. The unit price breakdown submitted with the bid will be used for unit price work. Break lump sum items into units that will allow for measurement of Work in progress.

14.02 Applications for Payments:

- A. Contractor shall submit an application for payment in a form acceptable to the Engineer, no more frequently than monthly, to Engineer. Applications for payment will be prepared and signed by Contractor. Contractor shall provide supporting documentation required by the Contract Documents. Payment will be paid for Work completed and materials stored on Owner premises as of the date of the application for payment.
- B. Beginning with the second application for payment, each application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior applications for payment.

14.03 Retainage

- A. The Owner shall retain 5% of each progress payment until the Work is substantially complete.

14.04 Review of Applications

- A. Within 10 days after receipt of each application for payment, the Engineer will either indicate in writing a recommendation for payment and present the application for payment to Owner or return the application for payment to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. The Contractor will make the necessary corrections and resubmit the application for payment.
- B. Engineer will recommend reductions in payment (set-offs) which, in the opinion of the Engineer, are necessary to protect Owner from loss because the Work is defective and requires correction or replacement.
- C. The Owner is entitled to impose set-offs against payment based on any claims that have been made against Owner on account of Contractor's conduct in the performance of the Work, incurred costs, losses, or damages on account of Contractor's conduct in the performance of the Work, or liquidated damages that have accrued as a result of Contractor's failure to complete the Work.

14.05 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

14.06 Substantial Completion

- A. The Contractor shall notify Owner and Engineer in writing that the Work is substantially complete and request the Engineer issue a certificate of substantial completion when Contractor considers the Work ready for its intended use. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Engineer will make an inspection of the Work with the Owner and Contractor to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor and Owner in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete or upon resolution of all reasons for non-issuance of a certificate identified in 14.06.B, Engineer will deliver to Owner a certificate

of substantial completion which shall fix the date of substantial completion and include a punch list of items to be completed or corrected before final payment.

14.07 Final Inspection

- A. Upon written notice from Contractor that the entire Work is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.08 Final Payment

- A. Contractor may make application for final payment after Contractor has satisfactorily completed all Work defined in the Contract, including providing all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents and other documents.
- B. The final application for payment shall be accompanied (except as previously delivered) by:
 - 1. All documentation called for in the Contract Documents;
 - 2. Consent of the surety to final payment;
 - 3. Satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any liens or other title defects, or will so pass upon final payment;
 - 4. A list of all disputes that Contractor believes are unsettled; and
 - 5. Complete and legally effective releases or waivers (satisfactory to Owner) of all lien rights arising out of the Work, and of liens filed in connection with the Work.
- C. The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

14.09 Waiver of Claims

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 60 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension.

15.02 Owner May Terminate for Cause

- A. Contractor's failure to perform the Work in accordance with the Contract Documents or other failure to comply with a material term of the Contract Documents will constitute a default by Contractor and justify termination for cause.
- B. If Contractor defaults in its obligations, then after giving Contractor and any surety ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. Declare Contractor to be in default, and give Contractor and any surety notice that the Contract is terminated; and
 - 2. Enforce the rights available to Owner under any applicable performance bond.
- C. Owner may not proceed with termination of the Contract under Paragraph 15.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- D. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- E. In the case of a termination for cause, if the cost to complete the Work, including related claims, costs, losses, and damages, exceeds the unpaid contract balance, Contractor shall pay the difference to Owner.

15.03 Owner May Terminate for Convenience

- A. Upon seven days written notice to Contractor, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for, without duplication of any items:
 - 1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. Other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

15.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner, and provided Owner does not remedy such

suspension or failure within that time, either stop the Work until payment is received, or terminate the Contract and recover payment from the Owner.

ARTICLE 16 - CONTRACTOR'S REPRESENTATIONS

16.01 Contractor Representations

A. Contractor makes the following representations when entering into this Contract:

1. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on:
 - a. The cost, progress, and performance of the Work;
 - b. The means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and
 - c. Contractor's safety precautions and programs.
5. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
6. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
7. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
8. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that, without exception, all prices in the Contract are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 17 - MISCELLANEOUS

17.01 Cumulative Remedies

- A. The duties and obligations imposed by this Contract and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.02 Limitation of Damages

- A. Neither Owner, Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

17.03 No Waiver

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.04 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract.

17.06 Controlling Law

- A. This Contract is to be governed by the law of the state in which the Project is located.

IN WITNESS WHEREOF, Owner and Contractor have signed this Contract.

This Contract will be effective on _____ (which is the Effective Date of the Contract).

OWNER: INDIANOLA MUNICIPAL UTILITIES

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

210 WEST 2ND AVE

INDIANOLA, IA 50125

License No.: _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Contract.)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

PERFORMANCE BOND

Contractor Name: [Full formal name of Contractor] Address <i>(principal place of business)</i> : [Address of Contractor's principal place of business]	Surety Name: [Full formal name of Surety] Address <i>(principal place of business)</i> : [Address of Surety's principal place of business]
Owner Name: INDIANOLA MUNICIPAL UTILITIES Mailing address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Contract Description <i>(name and location)</i> : 69kV LINE RELAY REPLACEMENT PROJECT INDIANOLA, IOWA Contract Price: [Amount from Contract] Effective Date of Contract: [Date from Contract]
Bond Bond Amount: [Amount] Date of Bond: [Date] <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☐ None ☐ See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- 6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
- 7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
- 9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
- 10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**

PAYMENT BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: INDIANOLA MUNICIPAL UTILITIES Mailing address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Contract Description <i>(name and location)</i> : 69KV LINE RELAY REPLACEMENT PROJECT INDIANOLA, IOWA Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☒ None ☐ See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 - 16.1.7. The total amount of previous payments received by the Claimant; and
 - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: **NONE**

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01000 – General Requirements

1.0 PROJECT DESCRIPTION

- 1.1 The Project includes replacing existing 69kV line relays and panel meters, installation of a serial port extender, addition of a digital output card and terminal blocks to an RTU, including panel wiring additions and removals at two substations within the City of Indianola, Iowa, including furnishing materials, labor, tools, equipment, supervision, and other items necessary to complete the entire project defined in these bid documents.
- 1.2 In addition to replacing relays and meters, the Project includes testing necessary to assure correct operation of the new relays, protection schemes, and new meters, verifying that that scanned points are correctly provided to the SCADA system data concentrator, that control points operate correctly, that analog outputs from meters are received correctly by the MidAmerican Energy RTU at East Iowa, and making minor changes to SEL relay and digital panel meter settings.

2.0 SCOPE OF WORK

- 2.1 The drawings, bill of materials, and specifications listed in the Index in Section 00000 are intended to cover all materials, equipment, and work necessary to complete this project as described, except for those items that are specifically listed as being supplied or completed by Owner or by others, and except for certain locations where wiring diagrams are not complete. These locations are explained in more detail below.
- 2.2 Work generally consists of the following major items of work but is not limited to the items listed below. Refer to drawings for each substation for plans and details and definition of the work to the extent possible.
- a. Contractor shall schedule preconstruction meeting within two weeks after receiving Notice to Proceed. Meeting will be held at Indianola Municipal Utilities. A virtual preconstruction meeting will not be acceptable.
 - b. Furnish labor and materials as required.
 - c. At East Iowa Substation:
 - 1) Retap three sets of CTs in each circuit breaker CKX611 and CKX612
 - 2) Reconnect control circuit cabling in circuit breakers CKX611 and CKX612
 - 3) Preschedule outage of the 69kV Bus
 - 4) Revise secondary connections and add jumpers in three 69kV bus PTs
 - 5) Provide and install a fuseblock and rewire bus PT connections in existing PT junction box
 - 6) Extend buried 2-inch conduit from grade level into existing PT junction box and from grade level through the building wall and into the cable trench in the East Iowa control building, including installing rigid conduit from ground level to PT junction box and PVC LBs and PVC conduit to pass through building wall above grade. Buried conduit will be installed by Owner.

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01000 – General Requirements

- 7) Provide and install a control cable to carry Y-winding potentials from the PT junction box to Relay Panel 1 in the control enclosure.
- 8) In relay panel 2, relocate existing red and green CKX213 breaker status indicating lamps 2-1/2" to the right (in front view) to provide room for new equipment mounting panel
- 9) Remove one existing SEL-121G relay and one existing SEL-DTA from each relay panel
- 10) Remove one existing SEL-501 relay from Relay Panel 1
- 11) Remove existing electromechanical line relays from each relay panel as shown in the drawings
- 12) Provide and install two equipment mounting panels on each relay panel
- 13) Provide and install four SEL-411L relays in new equipment mounting panels in existing relay panels
- 14) Replace three existing AB40 panel meters with a Bitronics M650 panel meters in each existing relay panel
- 15) Provide and install shielded, twisted pair cables to connect analog outputs from new M650 panel meters to terminal blocks in relay panels
- 16) Remove one SB-1 ammeter switch from each relay panel
- 17) Provide and install eight blank covers over panel openings left after removal of four meters, two ammeter switches, and two FT-1 test switches.
- 18) Provide and install three sets of FT-19R test switches in new equipment mounting panels in each relay panel.
- 19) Provide and install SEL-3620 serial port expander in new equipment mounting panel in Relay Panel 1.
- 20) Provide and install Cat5e cable between SEL-3620 and RTAC module in RTU cabinet
- 21) Provide and install serial communication cables between SEL-3620 and each of the four new SEL-411L relays
- 22) Provide and install fuseblocks and fuses in each relay panel as shown in the drawings
- 23) Provide and install control wiring as shown in the drawings
- 24) Investigate drawing and wiring discrepancies and missing details marked in the drawings and found during the wiring process
- 25) Provide and install terminal blocks and one SEL-2244-5 digital output module in existing Axion RTU in RTU cabinet
- 26) Provide and install new wiring to connect new SEL-2244-5 module to new terminal blocks in RTU cabinet.
- 27) Add wiring between RTU and relay panels and between relay panels 1 and 2 as shown in the drawings.
- 28) Provide and install engraved nameplates as shown in the drawings
- 29) Provide and install two 2-pole 20 amp branch circuit breakers in 125VDC Panelboard No. 2.
- 30) Provide and install DC supply cables between 125VDC Panelboard No. 2 and Relay Panel Nos. 1 and 2
- 31) Install settings provided by Engineer in AcSELeRator format in new SEL-411L relays

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01000 – General Requirements

- 32) Determine SEL-3620.Settings and install in device.
- 33) Install revised settings in RTAC. Settings file will be provided by Engineer. Contractor to revise settings as needed to provide necessary analog, binary, and control points and to fit final panel wiring.
- 34) Install M650 meter display, CT ratio, PT ratio, analog output, and other settings as required. Settings will be provided by Engineer in pdf format.
- 35) Test and commission new equipment
- 36) Cooperate as needed during testing to verify SCADA system additions and deletions

d. At Westside Substation:

- 1) Retap two sets of CTs in circuit breaker CM602
- 2) Remove two existing SEL-311B relays from existing relay panel 6
- 3) Provide and install two SEL-411LA relays in existing relay panel 6
- 4) Remove and reuse three blank fill panels. Cut one fill panel to fit space remaining after installation of SEL-411LA relays
- 5) Reinstall or replace eight engraved nameplates
- 6) Reconnect two existing serial communications cables to each new relay
- 7) Provide and install control wiring as shown in the drawings
- 8) Install settings provided by Engineer in SEL-411L relays. SEL-411L settings will be provided in AcSELeRator format.
- 9) Test and commission new equipment.
- 10) Cooperate as needed during testing to verify SCADA system additions and deletions

2.3 Contractor will furnish all equipment and materials required to complete the Work.

2.4 Contractor shall provide as-built data for the system as installed as described in Section 17839. This shall include red-line notations on drawings to show all field changes that affect the schematic or wiring diagrams.

3.0 DRAWINGS

3.1 Drawings showing device and wiring removals and additions are listed on the coversheet for the drawing volume. Panel layout and schematic diagrams are provided with bid drawings and point to point wiring diagrams, where available, will be provided with final construction drawings.

3.2 Drawings are as complete and accurate as possible, however, neither Owner nor Engineer guarantees complete accuracy. Contractor shall investigate discrepancies that affect the Work and show corrections on red-line drawings. Contractor shall investigate missing schematic and wiring diagram information marked in the East Iowa relay panel wiring diagrams and mark up record drawings to show correct schematic configuration and wiring.

3.3 Point to point wiring diagrams are listed on the drawing coversheets.

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01000 – General Requirements

- 3.4 Schematic and wiring diagrams do not exist for internal wiring and cable connections to the RTU at East Iowa. Contractor will be required to remove and install connections to existing terminal blocks in the RTU, add terminal blocks and a digital output card to the existing RTU, add internal wiring between the new card and the new terminal blocks, and connect the new terminal blocks to new control points in the existing relay panel without benefit of any wiring diagrams. All time required to investigate and formulate these connections must be included in the Contractor bid and no scope changes will be made to cover this work.

4.0 WORK BY OWNER OR BY OTHERS

- 4.1 The following work is not a part of this Contract and will be performed by the Owner or others.
- a. Owner will install the buried portion of the 2 inch PVC conduit at East Iowa Substation and will leave new conduit stubbed up out of the ground at both ends. Contractor will extend the new conduit into the existing 69kV PT Junction box and into the cable tray in the floor of the East Iowa control building as shown in the drawings.
 - b. Owner will Install fiber optic cables to SEL-411L relays at both ends of the East Iowa to Westside 69kV line.
 - c. Owner will provide and install SCADA master station programming for both substations.

5.0 SCHEDULE

- 5.1 Contractor may begin work at any time after receiving a Notice to Proceed. The Notice to Proceed is expected to be issued on or about November 14, 2025. Work must be substantially completed by March 31, 2025; with Final Completion by April 30, 2025.
- 5.2 Contractor will cooperate with Owner in scheduling equipment outages. Outages must be agreed upon by Owner, MidAmerican Energy, ITC, and CIPCO, so early scheduling will improve chances that outages will be available at the desired time.
- 5.3 For purposes of preparing their bid, Contractor shall assume work will be permitted normal business days, Monday through Friday, between 7:00 AM and 5:00 PM at East Iowa Substation and any day other than holidays, Monday through Sunday, between 7:00 AM and 5:00 PM at Westside Substation. Requests by Contractor for Owner to permit Contractor personnel that are qualified to work in an energized substation to work outside of these stated hours will be considered by Owner. Owner retains the sole right to grant or deny permission to work outside of the stated hours.

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01000 – General Requirements

- 5.4 Contractor shall manage and schedule the Work to permit returning the breakers and lines to service as soon as possible and to minimize the length of time needed to complete the project.

6.0 SEQUENCE OF WORK

- 6.1 A suggested sequence is shown in Section 01001. Final Work sequence is subject to adjustment with agreement of the Contractor and Owner. The Contractor must provide a general work plan for approval by the Owner prior to starting work on the Project.

7.0 NEW MATERIALS

- 7.1 Contractor is to furnish and pay for all materials necessary for the completion of the Work. All materials supplied by Contractor shall be new and unused and shall be as specified in the Bill of Materials.
- 7.2 Contractor may arrange with Owner to store materials to be provided by Contractor at the work locations.

8.0 REMOVED MATERIALS

- 8.1 Contractor to return the following removed devices to Owner:
One SEL-501 relay from East Iowa Substation
Two SEL-311B relays from Westside Substation

The contractor will be responsible for disposing of all other materials.

9.0 SITE AND OTHER AREAS

- 9.1 Contractor shall confine his operations to the substation and control room sites described in the drawings.

10.0 ENERGIZED EQUIPMENT

- 10.1 Contractor acknowledges that Contractor and Contractor's employees are aware of the potentially dangerous nature of electricity and are qualified to work on and in the vicinity of secondary (600 volt class), medium voltage (15kV class), and high voltage (69kV class) electric facilities that have not been de-energized. The existing facilities shall remain in operation and energized at all times except when outages are scheduled. Contractor shall take whatever steps are necessary to protect the existing facilities and maintain them so that they do not interfere with or pose a danger to either the new construction, Contractor activities, Owner's workers, or the general public. The cost of such actions shall be included in Contractor's prices as no separate payment will be made.

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01000 – General Requirements

- 10.2 In the event the work cannot be performed safely, Contractor shall notify Owner and Engineer, and shall cease work until arrangements are made to proceed safely.
- 10.3 Contractor shall ensure that only qualified persons are permitted to work on or near energized facilities, and that all applicable standards and regulations are followed, including observance of approach boundaries as specified in NFPA 70E-2021.
- 10.4 As much as possible, bus differential and breaker failure relaying at both substations shall remain in service during the project. Contractor shall provide prior notice to Owner and Engineer when these protection systems will need to be removed from service.

11.0 OUTAGES

- 11.1 All equipment outages required for the execution of the Work shall be kept to the shortest time duration possible.
- 11.2 Any and all required equipment outages shall be scheduled and coordinated with Owner in advance of the expected date of the outage.
- 11.3 The outages listed below are anticipated to be necessary for the work. The contractor is encouraged to suggest revisions to this list with the overall goals of reducing the quantity of outages needed or reducing outage durations while maintaining personnel safety and security of electrical service to Owner's customers.
- 11.4 Contractor shall understand that the schedule for the 69kV bus outage and outages of all three line terminals must be approved by Owner, MidAmerican Energy, ITC, and CIPCO. Contractor shall submit the requested outage schedule to Owner as early as possible to improve the chances that desired outage dates will be acceptable to all parties.

11.5 East Iowa Substation

- a. An outage of the 69kV bus at East Iowa Substation will be provided to revise connections and add wiring in the low voltage connection boxes of the three 69kV bus PTs. An acceptable weather forecast for the day of the outage will be required. The outage will be limited to one working day. Contractor shall provide any equipment necessary to reach the PTs, since they are mounted high on the 69kV box structure.
- b. Breaker CKX611 will be opened to permit work necessary to replace DPS line relays.
- c. Breaker CKX612 will be opened to permit work necessary to replace Westside line relays. This outage will be simultaneous with the outage on breaker CM602 at Westside Substation.

11.6 Westside Substation

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01000 – General Requirements

- a. Breaker CM602 will be opened to permit work necessary to replace East Iowa line relays. This outage will be simultaneous with the outage on breaker CKX612 at East Iowa.

12.0 SWITCHING

- 12.1 All switching required for the prosecution of the Work will be done by Owner.

END OF SECTION 01000

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01001 – Sequence of Work

1.0 SCHEDULE

- 1.1 Contractor may begin work at any time after receiving a Notice to Proceed and receipt of materials. The start date will be mutually agreed to by the Owner and Contractor.
- 1.2 The Notice to Proceed is expected to be issued on or about November 14, 2024. All Work must be substantially completed by March 31, 2025, with Final Completion by April 30, 2025.
- 1.3 Contractor shall order materials to provide for delivery of all materials before the start date.

2.0 SEQUENCE OF WORK

- 2.1 Contractor shall schedule a preconstruction meeting within two weeks of receipt of Notice to Proceed. Meeting shall be held at Indianola Municipal Utilities. Virtual participation is not acceptable.
- 2.2 Contractor shall perform as much prework and preparatory work as possible before beginning of outages to minimize the duration of each equipment outage. Following is a list of recommended work that should be completed before equipment outages.
 - A. Prewire PT junction cabinet.
 - B. Set and test all new relays.
 - C. Set panel meters.
 - D. Set SEL-3620.
 - E. Install conduit risers and new PT cable from existing PT junction box to relay panel 1 in East Iowa control building.
 - F. Add digital output module, terminal blocks, and wiring to existing East Iowa RTU.
 - G. Premount relays and test switches in equipment mounting panels for East Iowa Substation and, where possible, install wiring between relays and test switches mounted in the same equipment panel.
- 2.2 A preliminary suggested sequence is provided below. The actual Work sequence is subject to change depending upon needs of the Contractor and the Owner. The Contractor must submit a general work plan for approval by the Owner prior to starting work on the Project. Revisions to the sequence suggested by Contractor will be considered by Owner. Owner retains the sole right to approve the work sequence.
 - A. Contractor receive Notice to Proceed.
 - B. Contractor schedule preconstruction meeting within two weeks of receipt of Notice to Proceed. Meeting shall be held at Indianola Municipal Utilities. Virtual participation is not acceptable.

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01001 – Sequence of Work

- C. Contractor verify dimensions of equipment mounting panels for installation in relay panels at East Iowa Substation.
- D. Contractor schedule bus and line outages as soon as reasonably practical after receipt of Notice to Proceed. Outages must be agreed upon by Owner, MidAmerican Energy, ITC, and CIPCO, so early scheduling will improve chances that outages will be available at the desired time.
- E. Contractor order and receive materials.
- F. Contractor prewire PT junction box, install conduit risers and PT cable from PT junction box to relay panel 1 at East Iowa Substation.
- G. Contractor install settings and test all new SEL-411L relays, panel meters, and SEL-3620 serial port expander.
- H. Owner switch customer load normally served from East Iowa Substation to Westside Substation.
- I. Owner deenergize 69kV bus at East Iowa. During bus outage,
- J. Contractor make changes to secondary connections in PT LV connection boxes and complete wiring in PT junction box.
- K. Contractor complete work necessary to replace DPS line relaying in relay panel 1 at East Iowa Substation and function test new DPS line protection schemes and associated SCADA points.
- L. Contractor complete work necessary to replace Westside line relaying in relay panel 2 at East Iowa Substation and function test new Westside protection schemes and associated SCADA points.
- M. Owner return 69kV bus to service, leaving CKX612 open.
- N. Contractor perform load checks to verify current and voltage magnitudes and phase angles on new DPS line relays and meters.
- O. Owner switch East Iowa load temporarily served from Westside Substation back to East Iowa.
- P. Contractor complete work necessary to replace East Iowa line relaying in panel 6 at Westside Substation and function test new East Iowa protection schemes and associated SCADA points.
- Q. Contractor perform end-to-end testing on East Iowa – Westside line relaying.
- R. Owner return CKX612 and CM602 to service.

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 01001 – Sequence of Work

- S. Contractor perform load checks to verify current and voltage magnitudes and phase angles on new line relays at both ends of the line.

END OF SECTION 01001

INDIANOLA MUNICIPAL UTILITIES
69kV Line Relay Replacement Project
Section 16910 – Materials

1.0 PROJECT MATERIAL

- 1.1 Project Materials quantities and catalog numbers are called out in the construction drawings. This section provides a guide to help Contractor find all material items included in the construction drawings.
- 1.2 This section is provided solely as a reference and guide for Contractor. All material required to complete the Work as described by the Contract Documents is to be provided by Contractor, regardless of whether or not any specific items are included in the drawings or this specification section.
- 1.3 Contractor shall submit shop drawings for fabricated equipment mounting plates and cover plates needed at East Iowa Substation to Engineer for review prior to ordering. Contractor shall verify dimensions of equipment mounting plates prior to preparation of shop drawings and placing of order. Such verification must be done at the East Iowa Substation. When reviewing mounting plate dimensions, Contractor shall pay special attention to locations of wiring looms on backs of relay panel doors to make sure all conflicts can be managed.
- 1.4 Materials required at East Iowa Substation are summarized below.

Drawing	Item	Comments
CKR-301A	Blank covers Equipment mounting panels FT-19R test switches SEL-411L-1 relays SEL-3620 gateway Bitronics M650 meter 3-pole fuse blocks 2-pole fuse blocks 1-pole fuse blocks 3A fuses Communications cables Shielded, twisted pair cable Nameplates	See details for equipment mounting panels and nameplates on Dwg. CKR-301D.
CKR-302A	Blank covers Equipment mounting panels FT-19R test switches SEL-411LA relays Bitronics M650 meter 3-pole fuse blocks 2-pole fuse blocks 1-pole fuse blocks 3A fuses Shielded, twisted pair cable Nameplates	See details for equipment mounting panels and nameplates on Dwg. CKR-302D.
CKR-310A	SEL-2244-5 output module Terminal blocks	
CKR-410	3-pole fuse block 4-pole terminal block 6A fuses	

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CKR-472	2-pole branch circuit breakers	
E-15	PVC conduit and PVC LBs for building conduit entrance RGC conduit for riser at PT junction box	

1.5 Materials required at Westside Substation are summarized below.

Drawing	Item	Comments
CMR-300B	SEL-411A relays Nameplates	See nameplate details on Dwg. CMR-300C

END OF SECTION 16910

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SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Product Data.
 - 3. Miscellaneous record submittals.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Locations and depths of underground utilities.
 - d. Revisions to routing of conduits.
 - e. Revisions to electrical circuitry.
 - f. Actual equipment locations.

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- g. Changes made by Change Order or Work Change Directive.
 - h. Changes made following Engineer's written orders.
 - i. Details not on the original Contract Drawings.
 - j. Discrepancies in the original Contract Drawings.
 - k. Field records for variable and concealed conditions.
 - l. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 4. Mark record sets with red-colored pencil or pen. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - 6. Note Construction Change Directive numbers, Change Order numbers, and similar identification, where applicable.

2.2 TESTING DOCUMENTATION

- A. Testing Documentation: Provide test logs, test reports, event records, AcSEerator database, and test reports as described in Section 337233.19.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Engineer's reference during normal working hours.

END OF SECTION 017839

INDIANOLA MUNICIPAL UTILITIES REPLACE 69KV LINE RELAYS

SECTION 337233.19 – SUBSTATION TESTING & COMMISSIONING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Section 337243 Substation Control Wiring.

1.2 SUMMARY

- A. This Section includes the following: Testing and commissioning of substation equipment, auxiliary equipment, relays, circuits, and controls, etc.
- B. Equipment and systems to be tested include the following:
 - 1. All relays, meters, communications devices, SCADA Axion cards, cables, and wiring provided and installed by the Contractor. RTU testing shall prove proper operation, scaling, and statuses of all points added or revised as part of this project. Settings for relays, RTUs, and digital meters will be provided by the Engineer. SEL-3620 settings will be determined and installed by Contractor.
 - 2. Current circuits revised for this project shall be tested by pushing currents from terminal blocks in the relay panels or in the 69kV circuit breakers through the relays and meters and verifying correct phase angles and magnitudes in all devices.
 - 3. Potential circuits revised for this project shall be tested by determining that voltage phasors have correct amplitudes and phase angles in the new devices. Magnitude and phase angles of Y-winding potentials shall be verified by comparison with the X-winding potentials.
 - 4. Contractor shall verify proper operation of all relay and control circuits and schemes that were modified for this project. Contractor shall verify proper tripping of the circuit breakers.
 - 5. The Owner will switch all load normally fed from the East Iowa Substation to the Westside Substation during work at East Iowa to reduce the risk of inadvertent loss of load during the relay replacement, testing, and commissioning work. However, problems with existing circuit switcher CK601 on the high side of East Iowa Transformer No. 1 require that the circuit switcher not be tripped during this project. Circuit Switcher CK601 is presently closed, but the main breaker on the low side of East Iowa Transformer No. 1 is open, leaving the transformer energized but not carrying load.
 - 6. Contractor shall verify that contacts in the new SEL-411L relays at East Iowa will trip the bus lockout. Test switches are not installed on the lockout trip contacts. The problems with the existing circuit switcher CK601 require that it not be tripped during the relay replacement, testing, or commissioning work, so Contractor must take all precautions necessary to prevent tripping of the circuit switcher. Contractor shall provide Owner with details of the method to be employed to prevent outages for review and acceptance prior to the testing.

7. Contractor shall perform satellite-controlled end to end testing on the primary and secondary SEL-411L relaying on the East Iowa to Westside 69kV line.
8. Contractor shall cooperate with MidAmerican Energy in testing and verifying analog quantities provided to the MidAmerican Energy RTU at East Iowa Substation.
9. Testing contractor shall cooperate with testing of the Owner's RTUs at East Iowa and at Westside by providing analog quantities, alarms, and status point changes as necessary to verify new or revised points shown in the points lists for each substation. Testing contractor will be responsible for installing revised settings (provided by Engineer) in existing RTACs and testing of new substation devices that interface with the Owner's SCADA system. Contractor will determine settings and install them in the new SEL-3620 at East Iowa Substation.

C. The following tests will be performed by Others:

1. Fiber testing will be provided by others.
2. Owner's SCADA Master Station will be programmed by others.

1.3 STANDARDS

A. Testing shall adhere to the requirements and recommendations contained in the following standards:

1. American National Standards Institute (ANSI):
 - C12.1 Code for Electricity Metering
 - C12.11 Instrument Transformers for Revenue Metering, 10 kV BIL through 350 kV BIL.
 - C12.13 Electronic Time-of-Use Registers for Electricity Meters.
 - C12.15 Electricity Metering - Solid-State Demand Registers for Electromechanical Watthour Meters
 - C12.16 Solid-State Electricity Meters.
 - C63.2 Electromagnetic Noise and Field-Strength Instrumentation, 10kHz to 40GHz.
2. American Society for Testing and Materials (ASTM):
 - D877 Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes.
 - D1816 Test Method for Dielectric Breakdown Voltage of Insulating Oils of Petroleum Origin Using VDE Electrodes.
3. Institute of Electrical and Electronics Engineers (IEEE):
 - C2 National Electrical Safety Code.
 - C37.20.1 Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear.
 - C37.20.2 Metal-Clad and Station-Type Cubicle Switchgear.
 - C37.20.3 Metal-Enclosed Interrupter Switchgear.
 - C57.13 Requirements for Instrument Transformers.
 - C57.13.1 Guide for Field Testing of Relaying Current Transformers.
 - C57.13.2 Conformance Test Procedures for Instrument Transformers.
 - C57.13.3 Guide for Grounding of Instrument Transformer Secondary Circuits and Cases.
 - 450 Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations
4. National Fire Protection Association (NFPA)

- 70 National Electrical Code.
5. National Electrical Manufacturers Association (NEMA) and Insulated Cable Engineers Association (ICEA):
- | | |
|--------------------|--|
| WC 3/ICEA S-19-81 | Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. |
| WC 5/ICEA S-61-402 | Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. |
| WC 7/ICEA S-66-524 | Cross-Linked-Thermosetting-Polyethylene-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. |
| WC 8/ICEA S-68-516 | Ethylene-Propylene-Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. |
7. InterNational Electrical Testing Association (NETA)
ATS-2017 Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems
8. North American Electric Reliability Council (NERC)
- | | |
|---------|---|
| PRC-005 | Transmission and Generation Protection System Maintenance and Testing |
| PRC-008 | Underfrequency Load Shedding Equipment Maintenance Programs |
| PRC-011 | UVLS System Maintenance and Testing |
| PRC-017 | Special Protection System Maintenance and Testing |

1.4 TESTING CONTRACTOR

- A. Testing shall be performed by a contractor routinely engaged in the setting and testing of utility grade power system equipment, relays, protection schemes, and associated devices.
- B. Detailed information concerning the proposed testing contractor's experience shall be provided if requested. Documentation of contractor's experience shall include, at minimum, a list of substation relay and control projects completed during the last year; detailed description of experience with transmission line distance relaying, transmission system breaker failure relaying, and Schweitzer Engineering Laboratories devices; a listing of the contractor's testing equipment; names and resumes of personnel who will be assigned to the project; and utility references including names and phone numbers for the specific personnel and the contractor in general.

1.5 PERSONNEL

- A. The lead testing technician shall have a minimum of 10 years experience testing utility protection and control equipment. Experience shall include a minimum of 5 years being in responsible charge of testing programs for substations of similar size and nature as this project and shall include the testing and commissioning of substations with similar types of relays and control schemes. Experience shall include a complete scope of testing such as is specified in these specifications. Lead testing technicians shall be certified in accordance with ANSI/NETA ETT-2000 and shall have a current Level III or higher certification.
- B. Additional testing technicians shall have a minimum of 5 years testing experience in utility testing. Experience shall include the testing and commissioning of substations with similar types of relays and control schemes and shall include a complete scope of testing such as is

specified in these specifications. Testing technicians shall be certified in accordance with ANSI/NETA ETT-2000.

- C. Resumes of lead testing technician and all additional testing technicians that will be assigned to the project shall be provided to Owner at least 30 days prior to commencement of testing. Testing contractor shall replace any testing personnel that Owner does not deem qualified at any time before or during the testing process. Owner reserves absolute right to determine the necessity of such replacement.

1.6 TEST EQUIPMENT

- A. Test equipment listed below is the minimum required to perform the testing and checkout of the relay and control systems. Test technicians must be familiar with the use of this equipment and have a thorough understanding of the devices that are being tested.
- B. All test equipment shall have been tested, calibrated, and certified by the equipment manufacturer within 12 months prior to performing the tests. Copies of all certificates shall be provided to Owner prior to testing.
- C. Relay Test Set
 - 1. Voltage Source: Device(s) capable of supplying three independent voltage sources (1-250V) that are accurately variable both in magnitude and phase angle.
 - 2. Current Source: Device(s) capable of supplying three independent current sources (0-25A) that are accurately variable both in magnitude and phase angle.
 - 3. Frequency source: Device that is capable of supplying two voltage sources (0-150V) with one of the sources capable of supplying accurately variable frequency. Frequency shall be variable from 55-65 Hz minimum with at least 0.1 degree resolution.
 - 4. Digital Timer: Device capable of timing contact or DC voltage transitions integral with the operation of the voltage and current sources. Timer resolution must be 0.0001 second or better.
 - 5. The accuracy of all sources shall be equal to or better than the following:
 - a. Magnitude: $\pm 0.5\%$
 - b. Phase Angle: ± 0.5 degrees
 - c. Frequency: $\pm 0.01\%$
 - d. Time Measurement: ± 0.0001 sec
 - e. The distortion of the sine wave sources must be less than 2 percent.
- D. Voltmeter and Ammeter; Multimeters used during the calibration of meters, transducers and relays must be high accuracy digital meters that meet the following specifications:
 - 1. 4 ½ digit or better resolution
 - 2. True RMS AC measurement
 - 3. Basic DC Accuracy: 0.05% of scale used
 - 4. Basic AC Accuracy: 0.2% of scale used
- E. Phase Angle Meter
 - 1. An analog or digital phase angle meter shall be utilized during testing of the auto synchronizing system or sync check functions.
 - 2. Digital or analog phase angle meters are acceptable for recording voltage and current load and phase angle values. Clamp-on phase angle meters are not acceptable.

- F. Test Jack Devices: ABB FT-1 and FT-19R test switches are used extensively throughout the protective relay, control, and metering systems to facilitate testing. Disconnection of internal wiring is discouraged and is to be performed only when absolutely necessary. To this end, it will be necessary to have sufficient quantities of the appropriate ABB test jacks to enable use of the test switches.

1.7 SCHEDULE

- A. Lead testing technician shall provide a testing program and schedule to indicate the sequence of the work and the time period during which it will be completed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

- A. See Section 01001 Sequence of Work for schedule details.
- B. Existing relay panels shall remain energized at all times. When testing relay panels, Contractor shall take all necessary precautions to prevent inadvertent operation of relays or controls.
- C. Furnish qualified test personnel to initiate and manage the test program for this project. Provide qualified test technicians as necessary to perform all testing required under these specifications.
- D. Furnish all test equipment as specified or required to properly perform each specified or required test to completely verify the proper operation of all equipment and systems.

3.2 REQUIRED TESTING AND COMMISSIONING SERVICES

- A. Testing is to be as complete and as extensive as necessary to assure the proper operation of all equipment and protective systems for all equipment within the substation and for all equipment extending from the substation.
- B. Contractor shall provide a written test plan for the testing to be completed for this project. The plan shall be inclusive, indicating the tests that are to be completed, the equipment that will be tested, and the schemes that will be tested. The test plan shall incorporate a schedule that indicates when item-specific testing will be performed. Owner may assign representatives to witness testing based upon this schedule. Contractor may be required to repeat testing in the presence of Owner's representative should performance of testing vary from the schedule without advance notice to Owner.
- C. Test and set all of the relays according to settings provided by Engineer. Revisions to relay settings must be pre-approved by Engineer.

- D. Function test all circuits installed for this project using primary or secondary current and voltage injection. Current and voltage values used to activate relays shall be based on values necessary to confirm the differing modes of operation for each relay, such as zone 1, zone 2, zone 3, overcurrent conditions, overvoltage conditions, undervoltage conditions, underfrequency conditions, and etc. This will include all AC potential and current circuits and all control circuits. This testing will be done in conjunction with the testing and checkout by Owner on the SCADA system. These values will be used to confirm the data connections to the communications processors, ethernet switch, SCADA RTU, and Control Center.
- E. Provide contact status change and signal inputs to devices providing data to RTU equipment to confirm proper operation of the equipment.
- F. Coordinate testing of transmission line protection equipment with Contractor personnel or outside parties at remote terminals and with utility to confirm proper operation of the control schemes.
- G. Simulate in-service fault operation using current and voltage injection tests to trip protective equipment for all protective schemes.
- H. Perform all initial pre-energization tests or checks to confirm the readiness of equipment to be energized.
- I. Perform all load tests, checks or verification procedures to confirm the proper connection and operation of circuits, relays, protection schemes, etc. being placed in service. This includes satellite-controlled synchronous end-to-end tests on all transmission lines that utilize piloted protection schemes.
- J. Confirm the proper operation of all circuits installed for the substation. This will include using a set of substation control drawings and checking the proper operation of each contact opening/closure, switch opening/closure, operation of each coil, relay, etc. that is connected into the circuits. Each device confirmed for proper operation shall be "yellow lined" to indicate the device has been checked and found operating properly. If necessary, incidental corrections shall be coordinated with the Engineer, implemented, placed into service, and functionally tested. For the purpose of the Contract, the testing contractor shall include a minimum of 50 conductor termination relocations and the addition of 50 wire jumpers, complete with terminations.
- K. Provide thermal infrared scans of power equipment, bus, control equipment, auxiliary equipment, etc under the maximum load conditions possible.

3.3 REQUIRED RELAY AND RELATED DEVICES TESTS

- A. Tests covered by this specification shall include but not be limited to the following:
- B. Current Transformer Tests
 - 1. Verify grounding.
 - 2. Verify correct connections with system requirements.
 - 3. Verify that all CT secondary circuits are grounded at one and only one point as shown on drawings.

- C. Voltage Transformer Tests:
 - 1. Verify grounding.
 - 2. Verify correct connections with system requirements.

- D. Microprocessor-based Relays:
 - 1. Verify nameplate data.
 - 2. Verify grounding.
 - 3. Record model, style, and serial numbers.
 - 4. Verify and record connected CT ratios and rated control voltage.
 - 5. Record firmware and software revision numbers.
 - 6. Verify operation of target LEDs and displays.
 - 7. Check tightness of connections.
 - 8. Perform acceptance tests per manufacturer's instruction.
 - 9. Install settings provided by others.
 - 10. Apply voltages and currents and test for proper element pickups and logic operation.
 - 11. Check functional operation of each element used in the protection scheme.
 - 12. Perform satellite-synchronized end-to-end tests for piloted schemes.
 - 13. Verify DTT operation for pilot schemes with DTT enabled.
 - 14. Reset all demand, statistical, SOE, and event records after completion of testing.
 - 15. Download a complete set of as-left settings and provide to Engineer with testing documentation. Include protection and logic settings for all settings groups, global settings, port settings, and passwords.

- E. Relay Switchboards:
 - 1. Visually inspect all equipment, wiring, etc.
 - 2. Verify grounding.
 - 3. Instrument transformer tests.
 - 4. Relay testing.
 - 5. Verify correctness/completeness of engraved nameplates.

- F. Communications Processors:
 - 1. Verify cabling between communications processors, SEL relays, and other devices.
 - 2. Install settings and functionally test communications processors.
 - 3. Adjust analog point scaling as required to provide correct analog quantities to SCADA systems.
 - 4. Verify grounding.

- G. Meter and transducer tests
 - 1. Verify nameplate data.
 - 2. Verify grounding.
 - 3. Inspect physical and mechanical condition.
 - 4. Check mechanical electrical connections.
 - 5. Record model number, serial number, firmware revision, software revision, and rated control voltage.
 - 6. Verify operation of display and indicating devices.
 - 7. Record passwords.
 - 8. Install settings file provided by others or set required parameters, including IT ratios, system type, frequency, power demand methods and intervals, and communications requirements.
 - 9. Verify grounding per manufacturer's instructions.

10. Apply voltages and currents to analog inputs and verify correct measurement and indication.
 11. Verify correct operation of all auxiliary digital or analog input or output, including scaling.
- H. Protection and control scheme wire checks:
1. Testing shall include a thorough review of the schematic diagrams and checking each element to verify that it is functioning properly within the scheme. The drawing elements are to be yellow-lined when it is determined that part of the circuit is operating correctly. The circuits to be included for the review include:
 2. Current transformer circuits
 3. Potential transformer circuits
 4. Control circuits
 5. Auxiliary power circuits
 6. Include all circuits to the yard equipment
- I. Functional Tests:
1. Functional tests shall include a complete simulation of operation of the protection and control schemes by injecting current and voltage signals into the secondary or primary circuits to confirm proper operation of the circuits and controlled equipment. This testing is to be concluded prior to energization of any equipment associated with the protection and control scheme. This testing shall include the following:
 - a. Inject current and voltages into the secondary circuits to the relays, meters, and monitoring devices. Primary current injection may be used in lieu of secondary current injection.
 - b. Measure voltage, current, and phase angles into or out of all equipment on the circuit.
 - c. Increase values to actuate pickup of the relays for the different relay settings to demonstrate proper operation of the relays and the control circuits.
 2. Perform the trip tests for the differing substation configurations that the station may experience during switching or operating conditions. All functions, including, but not limited to, pilot trip, non-pilot trip, reclosing, and breaker failure schemes with direct transfer trip shall be demonstrated.
 3. Record all tests on forms provided by the tester.

3.4 EQUIPMENT TESTS

- A. Supervisory Remote Terminal:
1. Contractor will test all cables and wires and check terminations to the supervisory remote terminal.
 2. Verify grounding.
 3. Contractor will assist the owner or manufacturer's field representative in functional and operational tests of the supervisory remote terminal unit to assure correctness of control, status point, and analog metering operation.
 4. Verify grounding.
 5. Visually inspect all equipment for drainage.
 6. Assist manufacturer's representative in the calibration and testing of the carrier system to assure correctness of operation of equipment within the substation.

3.5 LINE TERMINAL REENERGIZATION

A. Planning

1. A meeting will be held between responsible parties approximately two (2) weeks ahead of line outages and scheduled equipment energizations to review the work to be accomplished.
2. The schedule for the work, including the tasks to be accomplished, the time periods for the tasks, intermediate testing and check points, etc. will be reviewed.
3. During any scheduled outage, a weekly meeting, or more often as site conditions dictate, will be held to review progress, status, and site conditions that may affect the progress of the work.

B. Line Outages

1. Line outages will not take place until all equipment, circuits, and schemes for the line have been installed, tested and made ready.
2. The scheduling and release of a line outage will be completely at the discretion of the Owner and interconnecting utilities.
3. The installation and testing of the equipment, circuits, and schemes shall be planned and sequenced to minimize the amount of outage time required, and as much as is practicable, allow the line to be re-energized when not required for construction or testing.
4. Work to be accomplished during the line outage:
 - a. Perform final circuit and control scheme testing on the line or equipment terminals.
 - b. Perform end-to-end trip tests of piloted line relaying using synchronized input to relays via satellite controlled tests.
 - c. Physically connect the transmission line into the substation, if required.
 - d. For new or rebuilt lines, perform phasing checks to confirm the phasing of the conductors into the substation.

C. Equipment energization:

1. A coordination meeting shall be held approximately 1 week in advance of the scheduled energization.
2. Responsibilities of Contractor during the pre-energization and energization tasks.
 - a. Witness initial energization of equipment.
 - b. Assure that the initial energization sequence is followed as determined in the initial coordination meeting.
 - c. Perform all testing and checks necessary to confirm the equipment, relays, etc. are operating properly, seeing the proper voltage, currents, phase angles, or other properties as required for proper operation.
 - d. Record all tests and checks on forms provided by the testing technician.
 - e. Coordinate with test technicians (including test technicians with other company affiliations) at other locations remote from the substation to assure proper operation of the facilities being placed in service.
 - f. Provide notification to other responsible personnel when tests have proven the equipment is operating satisfactorily and he is ready to proceed with additional energization of equipment.
3. Energization
 - a. Perform the energization of equipment in accordance with the energization schedule previously established.
 - b. Perform the necessary tests and checks.

- c. Continue with the next step of the energization procedure when and only when responsible parties agree the tests and checks are complete and the equipment is operating properly.

3.6 POST ENERGIZATION TESTS AND FOLLOWUP

- A. Immediately after the initial energization of new equipment, the testing technician shall complete load tests and checks to include the following:
 1. Measure currents, voltages, and phase angles at the inputs or outputs of all relays, meters, monitoring equipment, etc. Confirm the proper inputs to all equipment due to external equipment measurements.
 2. Using "Meter" command on SEL relays, verify current polarity, and substation throughput in line and breaker protection relays.
 3. Plug into all relays, meters, and monitoring equipment, etc. with a computer and read and save all internal registers to confirm the inputs to the equipment according to the equipment's internal data. Compare to the external readings to verify proper readings.
 4. Conduct "live end-to-end" tests using fault simulation hardware/software or equivalent on all lines with piloted relaying.
 5. Record all measurements on forms provided by the testing technician.
 6. Confirm with responsible parties when all post-energizing testing is completed and the equipment or sub-sections thereof are ready for commercial operation.
- B. Complete marks, comments to record drawings and submit to Engineer for revision of drawings.
- C. Test technician shall submit final copies of all test reports to Engineer.
- D. Contractor shall provide an event record, in electronic format, from each microprocessor-based relay set or reset under this project to Engineer. Event shall be generated by a trigger command to the relay. The trigger shall be initiated after final settings have been placed on the relay. Events shall be emailed to Engineer no later than 24 hours after the line terminal is commissioned and placed into service.

3.7 DOCUMENTATION

- A. A written log shall be maintained of the testing performed noting the date, time and personnel performing the tests. Contractor shall develop and maintain test forms for each device or system tested. The form shall include all pertinent nameplate data including model and serial numbers, the date and time of the test and the person performing the tests.
- B. The testing logs and test forms shall be available on-site for viewing by Owner or his representatives at all times. At the completion of the project, two copies of the testing log and the testing forms shall be delivered to Owner for his records.
- C. Contractor shall provide an event record, in electronic format, from each microprocessor-based relay set or reset under this project to Engineer. Event shall be generated by a trigger command to the relay. The trigger shall be initiated after final settings have been placed on the relay. Events shall be emailed to Engineer no later than 24 hours after the line terminal is commissioned and placed into service.

- D. Testing Documentation. Contractor shall provide test data forms and record all tests. Tests shall be recorded on the actual forms. Recording test data on backup data sheets and transposing the data at a later date is not acceptable. Completed test forms shall be signed and dated on the date they are completed. Two copies of completed test forms shall be submitted to OWNER on a weekly basis. Testing technician shall maintain two sets of full size drawings. One set shall be used to yellow line circuits/schemes indicating that the testing has been completed and schemes have been proven correct. The second set shall be used to mark any changes, revisions, etc. to the drawings. Both sets shall be submitted to the Engineer at the completion of the project.
- E. Maintain an as-constructed set of drawings during the construction of the Work. Deliver the as-constructed drawings to Engineer at the completion of the Work.
- F. Test reports shall at minimum include the following:
 - 1. Summary of project.
 - 2. Description of equipment tested.
 - 3. Description of tests.
 - 4. Test data.
 - 5. Analysis and recommendations.
- G. Test data records shall at minimum include the following:
 - 1. Identification of the testing contractor.
 - 2. Equipment identification.
 - 3. Humidity, temperature, and other conditions that may affect test results.
 - 4. Date of inspections, maintenance, tests, or calibrations.
 - 5. Identification of the testing technician.
 - 6. Indication of inspections, tests, maintenance, and/or calibrations to be performed and recorded.
 - 7. Indication of the expected results when calibrations are to be performed.
 - 8. Indication of as-found and as-left results, as applicable.
 - 9. Sufficient spaces to allow all results and comments to be included.
- H. Documentation of test procedures, test results, and test equipment certifications shall be provided for all systems and equipment as required in applicable NERC standards. Documentation shall be in a format acceptable to demonstrate compliance with NERC standards in effect at the time the testing is completed. Contractor shall assist the Owner with the initial NERC compliance audit following commissioning of the project by providing any additional documentation or certification necessary to assure compliance with NERC standards that apply to protection system testing.

END OF SECTION 337233.19

INDIANOLA MUNICIPAL UTILITIES REPLACE 69KV LINE RELAYS

SECTION 337233.33 - RACEWAY FOR SUBSTATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including general and supplementary conditions and Division 01 Specification Sections apply to this section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Conduit, ducts, and duct accessories for direct-buried duct banks and in single duct runs
 - 2. Conduit, ducts, and duct accessories for concrete encased ducts.
 - 3. Raceways, fittings, boxes, enclosures, and cabinets for substation electrical wiring.
 - 4. Cable trench.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. ENT: Electrical nonmetallic tubing.
- C. FMC: Flexible metal conduit.
- D. IMC: Intermediate metal conduit.
- E. RGS: Rigid galvanized Steel conduit.
- F. RNC: Rigid nonmetallic conduit.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI C2.
- B. Comply with NFPA 70.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver ducts to Project site with ends capped. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.

1.6 COORDINATION

- A. Coordinate layout and installation of ducts, cable trench, and boxes with final arrangement of other below grade items, site grading, and surface features as determined in the field.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. RGS: ANSI C80.1.
- B. IMC: ANSI C80.6.
- C. EMT: ANSI C80.3.
- D. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

2.2 NONMETALLIC CONDUIT AND TUBING (PVC)

- A. RNC: NEMA TC 2, Type EPC-40-PVC or Type EPC-80-PVC, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.
- B. Duct Accessories:
 - 1. Duct Separators: Factory-fabricated rigid PVC interlocking spacers, sized for type and sizes of ducts with which used, and selected to provide minimum duct spacings indicated while supporting ducts during concreting or backfilling.
 - 2. Warning Tape: Underground-line warning tape.

2.3 BOXES, ENCLOSURES, AND CABINETS

- A. Surface Mounted or Exposed Boxes: Cast aluminum or cast iron, with steel or aluminum cover plates. Crouse-Hinds, Russel & Stoll, or similar approved types. Sheet metal boxes are not acceptable.
- B. Junction Boxes:
 - 1. Indoor: NEMA 250, Type 1, galvanized-steel box with removable interior panel and finished inside and out with manufacturer's standard enamel.
 - 2. Outdoor: NEMA 250, Type 3R, stainless steel or aluminum box with removable interior back panel.
 - 3. Hinged door in front cover with latch.
 - 4. Additional accessories as indicated on the drawings.

2.4 CABLE TRENCH

- A. Cable trench shall be precast concrete underground utility trench system for electrical cabling.

- B. Comply with ASTM C857-07 Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures and ASTM C858-07 Specifications for Underground Precast Utility Structures.
- C. Cable trench may be modular or one piece construction.
- D. One piece system shall consist of precast concrete U-shaped bases and removable covers. The U-shaped bases shall have openings in the bottom for conduit entrance. The system shall be design to support a minimum of 200 lbs per square foot live load for pedestrian.
- E. Covers shall be furnished in light weight sections, sized to permit removal by one person. Provide tools for removal of covers.
- F. Trench interior dimensions and layout shall be as indicated in the drawings.
- G. Manufacturers: Trenwa or approved equal.

2.5 CONCRETE

- A. Concrete shall have a twenty-eight (28)-day compressive strength of at least 2000 psi. The aggregate shall be less than three-fourths (3/4) inch in diameter.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: Rigid galvanized steel (RGS) conduit.
 - 2. Straight Runs of Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
 - 3. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
 - 4. Connection to Equipment: RGS or LFMC.
- B. Indoors: Comply with the following applications, unless otherwise indicated:
 - 1. Exposed, Not Subject to Physical Damage: EMT.
 - 2. Exposed and Subject to Severe Physical Damage: RGS. Includes raceways as indicated on the drawings.
 - 3. Boxes and Enclosures: NEMA 250, Type 1.
 - 4. Connection to Equipment: FMC.
- C. Minimum Raceway Size: 1/2-inch trade size for indoor and 1 inch for outdoor installations unless indicated otherwise.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings.

- E. Flexible conduit: Conduit shall be steel reinforced and liquid tight. Maximum runs of metallic flexible conduits shall be 18 inches at equipment connections.

3.2 GENERAL INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Section are stricter.
- B. Conduits shall be installed in a workmanlike manner. Whenever possible, the runs shall be parallel to the centerlines of structures or parallel to each other in the case do multiple runs. Underground runs shall be as direct as possible, using the least number of bends as practical.
- C. Factory or field bends made with a hydraulic bender shall be used for conduit larger than one (1) inch. Minimum bend radius shall be seven (7) times the diameter of the conduit.
- D. All exposed ends of conduit shall be protected during construction to prevent entrance of any foreign material or moisture.
- E. Burrs or sharp projections on shall be removed.
- F. Round, flexible, nylon-covered tapes or nylon ropes shall be used for fishing and wire-pulling in conduit.
- G. Where conduit enters a box, vault, cable trench, or any other fitting or termination, a bushing or bell end shall be installed to protect the cable from abrasions. At all points where the conduit terminates, the bushing shall be of the grounding type to provide an effective connection to ground.
- H. Install no more than the equivalent of four quarter-bends (360 degree total) in any conduit run between outlet and outlet, fitting and fitting, or between outlet and fitting, including bends located immediately at the outlet or fitting. Pull boxes shall be installed, if required, to limit any run of conduit to four (4) quarter-bends (360 degree total).
- I. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- J. Complete raceway installation before starting conductor installation.
- K. Before backfilling operations are begun, the Contractor shall inspect all trenches, conduit, cable placement, risers, and other construction not accessible after backfilling. If corrections are required, a second inspection shall be made after completion of the changes.
- L. Conduits shall be installed clean and free from debris.
- M. Conduit ends shall be sealed with foam or ductseal as indicated on the bill of material.

3.3 SUPPORTS

- A. Outdoor above grade conduits shall be supported at least every six (6) feet horizontally and eight (8) feet vertically. Fittings and outlets that are for conduit feed through shall have the attached conduit supported within three (3) feet. Eighteen (18) inches shall be the distance between conduit support and outlets that contain devices (such as receptacles) or boxes that support fixtures.
- B. Conduit runs in control buildings shall have supports at a maximum of eight (8) feet horizontally and vertically.
- C. Drilling through junction boxes is not acceptable for NEMA ratings equal to three (3) or above. Unitstrut C-channel shall be used for mounting unless otherwise indicated on the drawings.
- D. Conduits shall be bent so that no more than four (4) inches separate the conduit and the adjacent surface.

3.4 INSTALLATION OF DIRECT BURIED CONDUIT

- A. Control and equipment power conduits shall be buried a minimum of eighteen (18) inches below grade. Conduits shall be installed below the ground grid
- B. Excavate trench bottom to provide firm and uniform support for conduit, Trench bottom shall be smooth or filed with two (2) inches of sand to provide a smooth bottom.
- C. First six (6) inches of backfill shall be sand or soil free of materials that would damage or be corrosive to the conduit.
- D. Restore any ground grid conductors to original condition before backfilling trench.
- E. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run. Firmly hand tamp backfill around conduit to provide maximum supporting strength.
- F. Restore substation surfacing to original condition after trench is backfilled.
- G. Install risers at junction boxes and building entrances as shown in the drawings.

3.5 INSTALLATION OF CONCRETE ENCASED CONDUIT

- A. Concrete encased conduits shall be installed at the depth and spacing as indicted on the drawings. Minimum concrete encasement envelope shall also be as indicated on the drawings.
- B. Conduit, conduit fittings, and conduit boxes to be embedded in concrete shall be held securely in place while the concrete is being placed. All concrete shall be cleaned from the inside of conduit boxes after the forms have been removed, and threads for attaching devices an cover shall also be cleaned.
- C. Separator Installation: Space separators close enough to prevent sagging and deforming of ducts, with not less than 4 spacers per 20 feet of duct. Secure separators to earth and to ducts to

prevent floating during concreting. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.

- D. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation. Start at one end and finish at the other, allowing for expansion and contraction of ducts as their temperature changes during and after the pour. If more than one pour is necessary, terminate each pour in a vertical plane and install 3/4-inch reinforcing rod dowels extending 18 inches into concrete on both sides of joint near corners of envelope.
- E. Pouring Concrete: Spade concrete carefully during pours to prevent voids under and between conduits and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Use a plank to direct concrete down sides of bank assembly to trench bottom. Allow concrete to flow to center of bank and rise up in middle, uniformly filling all open spaces. Do not use power-driven agitating equipment unless specifically designed for duct-bank application
- F. Reinforcement: Reinforce concrete-encased duct banks where they cross disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.
- G. Forms: Use walls of trench to form walls of duct bank where soil is self-supporting, and concrete envelope can be poured without soil inclusions; other wise use forms.
- H. Stub-ups: Use manufactured duct elbows for stub-ups at risers and equipment and at building entrances through the floor, unless otherwise indicated. Extend concrete encasement throughout the length of the elbow.
- I. The ends of conduits shall be protected to prevent the entrance of any foreign materials.
- J. Backfilling: When the backfill above the concrete must be compacted, the concrete shall cure for seven (7) days before backfilling. When compaction of the backfill is not required, he concrete shall cure for twenty-four (24) hours before backfilling.

3.6 CABLE TRENCH INSTALLATION

- A. Unloading and Storage: Care should be taken in unloading and storage of trench materials. All material shall be stored on level ground.
- B. Preparation and Excavation: Excavate trench to a minimum width for the specified size of trench and to a sub-grade elevation of 2-3" below the bottom of the trench, Cut wall as vertical as possible. Place clean backfill material such as sand, level the material, and compact to the bottom trench elevation.
- C. Follow manufacturer's instructions for placing component system or one piece trench units.
- D. Place a 4" bed of sand in the bottom of the trench to form a level bottom just covering the support base.

3.7 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 337233.33

INDIANOLA MUNICIPAL UTILITIES REPLACE 69KV LINE RELAYS

SECTION 337233.13 – SUBSTATION RELAYS & CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 33 Substation Control Wiring.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Relays and control devices
 - 2. Communication devices.
 - 3. Special cables.
 - 4. Accessories.

1.3 DEFINITIONS

- A.

ANSI	American National Standards Institute
ASTM	American Society for the Testing of Materials
IEEE	Institute of Electrical and Electronics Engineers
NEMA	National Electric Manufacturers Association
NFPA	National Fire Protection Association
UL	Underwriters Laboratories

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 RELAYS AND DEVICES

- A. Digital Relays: Furnish relays with the manufacturer and model number as indicated on the drawings. Furnish special cables with the relays as indicated.
- B. Auxiliary Relays: Furnish auxiliary relays, timers, and other accessory devices with the manufacturer and model number as indicated on the drawings.

- C. Meters: Furnish meters with the manufacturer and model number as indicated on the drawings. Furnish special cables with the relays as indicated.
- D. Communications equipment: Furnish communications equipment with the manufacturer and model number as indicated on the drawings. Furnish special cables with the relays as indicated.

2.2 ACCESSORIES

- A. Fuses Holder & Fuses: Fuse manufacturer, model number, and fuse ratings shall be as indicated on the drawings. Provide spare fuses as indicated.
- B. Branch Circuit Breakers: Circuit breaker manufacturer, model number, and ratings shall be as indicated on the drawings.
- C. Terminal Blocks: Terminal block manufacturer and model number shall be as indicated on the drawings.
- D. Device Nameplates: Nameplates shall consist of professionally engraved plastic. Engraving shall be as indicated on the drawings. Device nameplate materials shall match as closely as possible those presently in service at each substation. Nameplates shall be attached using 3M-brand 4032 foam tape. No other tape is acceptable.
- E. Device Labels: Device labels shall be adhesive labels and have 3/8" (minimum) black lettering on a white background.
- F. Wiring Ducts: Furnish Panduit or approved equivalent, plastic snaps-slot wiring ducts.
- G. Required wiring accessories: Furnish accessories such as cleats, mounting straps, and mounting hardware.
- H. Blank Covers: Blank cover plates shall be 11-gauge steel and painted to match the panel.
- I. Equipment Mounting Plates: Equipment mounting plates for new relays, test switches, or other devices shall be 11-gauge steel and be sufficiently braced to properly support the weight of the equipment. Plates and bracing shall be painted to match the panel.

2.3 INSTRUCTION MANUALS

- A. All equipment instruction literature shall be bound in a heavy duty "D" ring binder. Additional binders, numbered consecutively, may be used if required. The front of each binder shall be labeled with the Owner, Contractor, and Project name. Each binder shall include a Table of Contents.

PART 3 - EXECUTION

3.1 GENERAL

- A. All work performed on the relay panels shall be performed by personnel experienced in working with energized utility style relay and control panels.
- B. The existing relay panels shall remain energized as much as possible subject to Contractor work procedures. When modifying the existing relay panels, Contractor shall take all necessary precautions to prevent inadvertent operation of relays or controls.
- C. All work performed on the relay panels shall be performed by personnel experienced in working with energized utility-style relay and control panels. Experience in utility transmission and distribution substations is required. Personnel must be fully capable of reading, interpreting, and completing wiring in accordance with prepared wiring diagrams.

3.2 NEW PANELS

- A. Mount panels as indicated on the drawings.
- B. Properly secure each panel to the building structure and to adjacent panels.
- C. Ground all panels.

3.3 EXISTING PANELS

- A. The existing relay panels shall remain energized as much as possible subject to Contractor work procedures. When modifying the existing relay panels, Contractor shall take all necessary precautions to prevent inadvertent operation of relays or controls
- B. All panel cuts and scratches shall be touched up with paint to match the existing panel finish.
- C. Blank Covers: Install blank cover plates over openings for future devices or removed.
- D. New devices shall be mounted parallel and perpendicular to existing devices
- E. All panel cuts and scratches shall be touched up with paint to match the existing panel finish.
- F. Contractor shall be responsible for maintaining an as-constructed set of drawings which will be provided to the Engineer at the completion of the project.
- G. At locations described on the drawings, Contractor shall install blank cover plates over openings that result from removal of some devices. Coverplates shall be constructed from 11-gauge steel and painted to match the existing panels.
- H. Adapter plates for new relays and test switches shall be furnished and installed by the Contractor where indicated in the drawings. The adapter plates shall be constructed from 11-gauge steel and sufficiently braced to support the equipment. Contractor shall attach the adapter plates to the relay panels with sufficient hardware to properly support the weight of the new

equipment. If necessary, Contractor shall be responsible for additional panel bracing if the new equipment adversely affects the relay panel. Adapter plates and bracing shall be painted to match the existing panels.

3.4 WIRING

- A. All wiring shall be 600 volt, crosslink polyethylene insulated, Type SIS, No. 12 (65 strand) switchboard wire.
- B. All wiring to Electroswitch rotary switches and lockout relays shall be spirally bundled around the switch to allow the switch to be “rolled” out of the panel for future wiring changes.
- C. All wires shall be kept as short as practical with no excess wire coiled up or looped in the wire ducts. All wiring shall be neatly and carefully installed by workmen skilled in such installation.
- D. Cables and wires shall be installed and terminated in accordance with Substation Control Wiring Requirements as noted on the drawings.
- E. All wires shall be kept as short as practical with no excess wire coiled up or looped in the wire ducts. All wiring shall be neatly and carefully installed by workmen skilled in such installation.
- F. Wires shall be terminated with insulated ring type insulated lugs, securely crimped. Ring lug terminals shall be Thomas & Betts or Burndy. NOTE: No slotted terminal connectors shall be used. Use of non-approved lugs may result in rejection of work and complete retermination of all wiring
- G. Sufficient care shall be exercised in the use of crimp-on terminal connectors to insure that each wire is firmly attached to the connector and that proper wire strip length, as determined by the lug manufacturer, is followed. Conductor insulation shall be squarely and evenly cut and shall be continuous with the connector barrel.
- H. Only controlled-cycle compression tools supplied by the manufacturer of the ring lug being used are acceptable. Use of compression tools not supplied by the ring lug manufacturer may result in rejection of work and complete retermination of all wiring
- I. Install special cables as required.
- J. All wiring or cables that are disconnected shall be completely removed from wireways and wire looms. Disconnected wiring shall not be left in the relay panels.

3.5 ACCESSORIES

- A. Device Nameplates: Assure a clean surface exists prior to adhering nameplates. Nameplates to be installed level.
- B. Device Labels: A device location label used to locate each device with respect to the point-to-point wiring diagrams shall be installed next to each device inside the panel. These adhesive labels shall have 3/8” black letters on a 3/4” x 1” white background.

- C. Wiring ducts shall be used as much as possible for all wire bundles. These plastic ducts shall be securely fastened to the panel and shall be completely independent of the relay cases and other equipment mounted on the panel.
- D. Required wiring accessories such as cleats, mounting straps, terminal connectors, fuse blocks, terminal boards, cartridge fuses of the ratings shown and the like, shall be provided by the Contractor.

END OF SECTION 337233.13

INDIANOLA MUNICIPAL UTILITIES REPLACE 69KV LINE RELAYS

SECTION 337243 – SUBSTATION CONTROL CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Control wires and cables.

1.3 DEFINITIONS

- A.
 - ANSI American National Standards Institute.
 - ASTM American Society for the Testing of Materials
 - ICEA Insulated Cable Engineers Association
 - IEEE Institute of Electrical and Electronics Engineers
 - NEMA National Electric Manufacturers Association
 - NFPA National Fire Protection Association
 - UL Underwriters Laboratories

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Copper Conductor: Stranded, bare (per ASTM B3) or tinned (per ASTM B33) copper. Stranding shall be per ASTM B8 class B (7 strand) or class C (19 strand).
- B. Multi-conductor Control Cable:
1. Service Conditions: Designed for service at a maximum continuous operating temperature of 90 degrees C in dry and damp locations or 75 degrees C in wet locations. All control cables shall be suitable for installation in conduits, ducts, trays, or direct buried. Cables shall be resistant to damage from heat, flame, moisture, oil, sunlight, and mechanical abrasion which can occur in an electrical substation environment.
 2. Multi-conductor Control Cable: Rated 600 volt, Type TC, and meet the requirements of ICEA S-73-532. Individual conductors shall be stranded copper with a minimum of 30 mils of cross-linked polyethylene flame-retardant insulation. The insulated conductors shall have an overall jacket. The jacket shall be black in color and a minimum of 60 mils of a flame retardant material. When required, the cable shall include a 5 mil corrugated copper tape shield, applied longitudinally.
 3. Multi-conductor Color Code: Per ICEA Method 1, Table K-2. Color codes shall be as follows for control circuits and DC supply circuits:

4 and 12 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>	<u>Tracer Color</u>
1	Black	
2	Red	
3	Blue	
4	Orange	
5	Yellow	
6	Brown	
7	Red	Black
8	Blue	Black
9	Orange	Black
10	Yellow	Black
11	Brown	Black
12	Black	Red

2 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>
1	Black
2	White

- C. Twisted Pair Control Cable (where required): Rated 300 volts, Type PLTC. Individual conductors shall be stranded copper with a polyvinyl chloride or cross-linked polyethylene flame-retardant insulation. The insulated conductor assembly shall be covered with a shield and have an overall jacket. The jacket shall be flame retardant.

- D. Internal Panel or Equipment Wiring For Field Installation: 600 volt, #12 AWG, 65 strand, copper wire with cross-linked polyethylene, type SIS insulation. Color to be gray unless noted otherwise on the drawings.

2.2 ACCESSORIES

- A. Lugs: Non-Insulated ring type insulated lugs. Ring lug terminals shall be Thomas & Betts or Burndy. NOTE: No slotted (spade type) terminal connectors shall be used.
- B. Cable Identification Tags: Panduit part no. SSM2S-C, SSM2S-D or approved equal. Tags shall be hand lettered using an ultrafine point, black ink, permanent marking pen as manufactured by Sharpie or approved equal.
- C. Cable Ties: Black plastic, weather and ultraviolet resistant, Panduit type PLT or approved equal.
- D. Wire Labels: All wires shall be labeled at both ends with heat shrink machine-printed markers. Each marker shall clearly indicate the exact individual wire designation as shown on the cable connection diagrams. Non-heat shrink markers may be permitted on a case-by-case basis upon request. Markers shall face out and will be labeled to be read with minimal effort.
- E. Cable Shield Bond Connections: Tyco Electronics Termi-Foil terminals and splices for aluminum or copper foil or strip, catalog no. 329254, with barrel for #10-#12 AWG wire. Install Termi-Foil connectors with Tyco Electronics Termi-Foil Hand Crimping Tool, catalog no. 68026.
- F. Terminations on Phoenix Terminal Blocks: When required by the manufacturer, use ferrules manufactured by Phoenix Contact, correctly sized for the conductor to be landed on that terminal.

PART 3 - EXECUTION

3.1 INSTALLATION OF CONTROL CABLES

- A. All wiring between the various pieces of equipment shall be installed as shown on the plans. All wiring shall be enclosed in raceway, cable trays, or wireways of the size specified on the plans or as approved by Engineer.
- B. The Cable Schedule, which is included in the drawings, lists power, control, and communications cables necessary for this installation. The Schedule shows the endpoints of each circuit, the number of conductors, size of the conductors, and the approximate lengths. The lengths are not cutting lengths, but are included only as an aid in laying out the circuits.
- C. Cable jackets shall be removed using the appropriate cable tool which has a settable cutter adjusted so as not to damage the conductor insulation. Conductor insulation shall be removed using the appropriate stripping tool adjusted so as not to damage the wire strands. Knives shall not be used on any cables. Any cables or wire damaged during installation shall be replaced at Contractor's expense.

- D. No cable shall be installed until the conduits for the particular cable runs have been completely installed, thoroughly cleaned and mandreled.
- E. Sue pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway. Cable lubricants recommended by the cable manufacturer may be used as an aid to the pulling of cable. Grease or other materials harmful to cable insulation shall not be allowed.
- F. All cables in each conduit shall be pulled simultaneously, using cable grips and swivels or other devices subject to the approval Engineer. Cable tension shall not exceed the maximum tension recommended by the cable manufacturer. Cables shall always be protected from mechanical injury and from moisture at the unprotected ends.
- G. Conductors shall be continuous from terminal to terminal. No splices will be permitted.
- H. Care must be taken not to have the conductors pulled tight or kinked in the conduits or boxes. Where control wires from more than one conduit pass through a common pull box, the group of wires from each conduit shall be bound together with tie wraps spaced at six inch intervals.
- I. All cable and wire shall be installed in a workmanlike manner. Cables shall be neatly trained, without interlacing, in all trays and boxes. Sufficient lengths of cable shall be pulled into equipment panels, boxes, etc., to permit a neat arrangement. Groups of control wires carried in the same conduit to a terminal block or like termination point shall, after leaving the conduit, be formed and firmly, but not tightly, tied with cable tie wraps.
- J. Cable forming shall be done in a manner that will not permit sharp bends over conduit bushings. The bending radius in any cable shall not be less than the minimum bending radius recommended by the cable manufacturer. Damaged or out-of-place cable shall be replaced at the Contractor's expense.
- K. Multi-conductor cable jackets shall be removed as required to train and terminate the conductors. In control cabinets, the cable jacket shall be left on the cable, as far as possible, to the point of the first conductor branch. At relay panels the cable jackets shall be removed to within 3 inches of the entrance to the panel or, in the case of existing substations, removed in a manner similar to existing cable jackets. Cables shall be clamped or secured in a manner to avoid tension on individual conductors or terminals. Spare conductors shall be left long enough to reach any terminal.
- L. Insulated conductors from which the jacket is removed shall be neatly trained in bundles and the bundle firmly but not tightly tied, using cable tie wraps made for this purpose. The individual conductors, including all spare conductors, of the cables shall be unlaced prior to tying in bundles.
- M. Identify all cables at terminations and in all pull boxes. Cable tags shall bear the corresponding cable number shown on the Cable Schedule. Cable numbers shall be written legibly with a permanent marker.
- N. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

- O. Arrange cables in parallel and fasten each cable in place as required to maintain cables in parallel runs.
- P. Install all jumpers as shown on wiring and connection diagrams.
- Q. Bundle cables in the cable tray where the cables pass from the tray to relay panels so that they can pass through one opening in the tray at each side of the relay panel.
- R. Install dropout fittings to protect communications cables at exits from communication cable tray to relay panels.
- S. All communication cables that extend from relay panel to relay panel or from a relay panel to equipment located elsewhere within the control building shall be installed in the overhead communication cable tray.

3.2 WIRE TERMINATIONS

- A. Extra care shall be exercised in the use of crimp-on terminal connectors to make certain that each wire is firmly attached to the connector. Use only controlled cycle compression tools supplied by the manufacturer of the ring lug being used (Thomas & Betts or Burndy). Conductor insulation shall be squarely and evenly cut and it shall be continuous with the connector barrel.
- B. Cable shields, when present, shall be terminated by connecting the drain wire or corrugated copper tape shield to a ground bus with a compression terminal. Approved termination methods for corrugated tape shields include Tyco Electronics Termi-foil terminals (installed with controlled-cycle compression tools manufactured expressly for that purpose) and the BSW Floating Bond manufactured by Electric Motion Company, Inc. Cable shields may be terminated at one or both ends depending on the application and on the substation design. The proper method will be noted on the drawings or defined in the Special Conditions.
- C. Solderless ring-type terminal lugs shall be used to connect all wires #8 AWG and smaller to studs.
- D. Terminations on larger conductors shall have at least two indentations.
- E. Wires terminated on Phoenix terminal blocks shall have the correct size of Phoenix ferrule installed to prevent individual strands from straying and making contact with adjacent wires and terminals.

3.3 ACCESSORIES

- A. Identify all cables at terminations and in all pull boxes. Cable tags shall bear the corresponding cable number shown on the Cable Schedule. Cable numbers shall be written legibly with a permanent marker.

3.4 REMOVALS

- A. All cables and wires that are disconnected and not reused shall be completely removed from panels, wireways, and wire looms.

END OF SECTION 337243

IMU EAST IOWA NO. 1 RTU POINT LIST

Cover Page

Revision: 1

Date:

RTU ID:

Note: Latest revisions are shaded

Additions

Removals

Comments



RTU Address:

Master Station Protocol:

RTU Type:

RTU SN:

RTU Firmware:

DNP

SEL-2241 RTAC

REVISION HISTORY

Revision	Description	By	Phone #	Date
0	Initial points list built from RTAC file from Scott Steinmetz	Rich Kline, P&E	515-558-8416	7/22/2024
1	Replace 69kV Line Relays	Rich Kline, P&E	515-558-8416	8/13/2024

NOTES:

DIGITAL INPUTS									
FALSE	SEL_2440_1_1_SEL.FM_INST_CBADA	SPS	BINARIES	CBADA		0	0	0	
FALSE	SEL_2440_1_1_SEL.FM_INST_CBADB	SPS	BINARIES	CBADB		0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_ENABLED	SPS	BINARIES	ENABLED		0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_HALARM	SPS	BINARIES	HALARM		0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN101	SPS	BINARIES	IN101	STATION_POWER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN102	SPS	BINARIES	IN102	I2_ALARM_SYS_STATUS	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN103	SPS	BINARIES	IN103	DOOR_ALARM	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN104	SPS	BINARIES	IN104	LTC_CONTROL_SWITCH	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN105	SPS	BINARIES	IN105	LTC_CONTROL_MODE	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN106	SPS	BINARIES	IN106	TRANS_WINDING_TEMP	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN107	SPS	BINARIES	IN107	TRANS_OIL_TEMP	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN108	SPS	BINARIES	IN108	TRANS_OIL_LEVEL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN109	SPS	BINARIES	IN109	TRANS_PRESSURE_REL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN110	SPS	BINARIES	IN110	TRANS_GAS_DETECTOR	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN111	SPS	BINARIES	IN111	I_11	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN112	SPS	BINARIES	IN112	ITIE_LOCKOUT_RELAY	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN113	SPS	BINARIES	IN113	OU_VOLTAGE_RELAY	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN114	SPS	BINARIES	IN114	CRKT_SWITCH_69KV	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN115	SPS	BINARIES	IN115	ITIE_MAIN_BREAKER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN116	SPS	BINARIES	IN116	BUSS_TIE_BREAKER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN201	SPS	BINARIES	IN201	TURBINE_BREAKER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN202	SPS	BINARIES	IN202	CK233_BREAKER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN203	SPS	BINARIES	IN203	CK233_LOCAL_RECL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN204	SPS	BINARIES	IN204	CK233_REMOTE_RECL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN205	SPS	BINARIES	IN205	CK232_BREAKER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN206	SPS	BINARIES	IN206	CK232_LOCAL_RECL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN207	SPS	BINARIES	IN207	CK232_REMOTE_RECL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN208	SPS	BINARIES	IN208	CK231_BREAKER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN209	SPS	BINARIES	IN209	CK231_LOCAL_RECL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN210	SPS	BINARIES	IN210	CK231_REMOTE_RECL	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN211	SPS	BINARIES	IN211	POTENTIAL_69KV	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN212	SPS	BINARIES	IN212	SPARE_28	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN213	SPS	BINARIES	IN213	SPARE_29	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN214	SPS	BINARIES	IN214	VOLTAGE_REDUCTION	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN215	SPS	BINARIES	IN215	DPS_69KV_BREAKER	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN216	SPS	BINARIES	IN216	PATTERSON_69KV_BRKR	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN301	SPS	BINARIES	IN301	DPS_FAULT_A	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN302	SPS	BINARIES	IN302	DPS_FAULT_B	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN303	SPS	BINARIES	IN303	DPS_FAULT_C	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN304	SPS	BINARIES	IN304	DPS_FAULT_GRND	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN305	SPS	BINARIES	IN305	DPS_FAULT	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN306	SPS	BINARIES	IN306	BUSS_LOCKOUT_69KV	0	0	0	
TRUE	SEL_2440_1_1_SEL.FM_INST_IN307	SPS	BINARIES	IN307	DPS_11S_ALARM	0	0	0	Previously DPS_DTA_ALARM
TRUE	SEL_2440_1_1_SEL.FM_INST_IN308	SPS	BINARIES	IN308	DPS_11P_ALARM	0	0	0	Previously DPS_SEL_ALARM
TRUE	SEL_2440_1_1_SEL.FM_INST_IN309	SPS	BINARIES	IN309	PAT_FAULT_A	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN310	SPS	BINARIES	IN310	PAT_FAULT_B	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN311	SPS	BINARIES	IN311	PAT_FAULT_C	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN312	SPS	BINARIES	IN312	PAT_FAULT_GRND	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN313	SPS	BINARIES	IN313	PAT_FAULT	0	0	0	Remove
TRUE	SEL_2440_1_1_SEL.FM_INST_IN314	SPS	BINARIES	IN314	SEL-3620_ALARM	0	0	0	Previously Spare
TRUE	SEL_2440_1_1_SEL.FM_INST_IN315	SPS	BINARIES	IN315	PAT_11S_ALARM	0	0	0	Previously PAT_DTA_ALARM
TRUE	SEL_2440_1_1_SEL.FM_INST_IN316	SPS	BINARIES	IN316	PAT_11P_ALARM	0	0	0	Previously PAT_SEL_ALARM
FALSE	SEL_2440_2_1_SEL.FM_INST_CBADA	SPS	BINARIES	CBADA		0	0	0	
FALSE	SEL_2440_2_1_SEL.FM_INST_CBADB	SPS	BINARIES	CBADB		0	0	0	
FALSE	SEL_2440_2_1_SEL.FM_INST_ENABLED	SPS	BINARIES	ENABLED		0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_HALARM	SPS	BINARIES	HALARM		0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN101	SPS	BINARIES	IN101	SPARE_49	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN102	SPS	BINARIES	IN102	SPARE_50	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN103	SPS	BINARIES	IN103	SPARE_51	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN104	SPS	BINARIES	IN104	IOWA_KWH_IN_KY	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN105	SPS	BINARIES	IN105	IOWA_KWH_IN_KZ	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN106	SPS	BINARIES	IN106	IOWA_KWH_OUT_KY	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN107	SPS	BINARIES	IN107	IOWA_KWH_OUT_KZ	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN108	SPS	BINARIES	IN108	STA_PWR_KWH_KY	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN109	SPS	BINARIES	IN109	STA_PWR_KWH_KZ	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN110	SPS	BINARIES	IN110	EI_6T3_KWH_IN_KY	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN111	SPS	BINARIES	IN111	EI_6T3_KWH_IN_KZ	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN112	SPS	BINARIES	IN112	EI_6T3_KWH_OUT_KY	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN113	SPS	BINARIES	IN113	EI_6T3_KWH_OUT_KZ	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN114	SPS	BINARIES	IN114	SPARE_62	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN115	SPS	BINARIES	IN115	SPARE_63	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN116	SPS	BINARIES	IN116	SPARE_64	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN201	SPS	BINARIES	IN201	BRK_613_STATUS	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN202	SPS	BINARIES	IN202	BRK_613_CL_SPRING	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN203	SPS	BINARIES	IN203	SPARE_67	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN204	SPS	BINARIES	IN204	BRK_613_NO_DC_TRIP	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN205	SPS	BINARIES	IN205	BRK_613_NO_DC_CLOSE	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN206	SPS	BINARIES	IN206	TRAN_6T3_HI_OIL_TEMP	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN207	SPS	BINARIES	IN207	TRAN_6T3_PRESS_REL	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN208	SPS	BINARIES	IN208	TRAN_6T3_OIL_LEVEL	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN209	SPS	BINARIES	IN209	TRANS_6T3_AC_PWR	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN210	SPS	BINARIES	IN210	TRAN_6T3_SEL_587	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN211	SPS	BINARIES	IN211	TRAN_6T3_SEL_501	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN212	SPS	BINARIES	IN212	TRAN_6T3_86T3_TRIP	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN213	SPS	BINARIES	IN213	T_6T3_SWCH	0	0	0	

TRUE	SEL_2440_2_1_SEL.FM_INST_IN214	SPS	BINARIES	IN214	T_6T3_N2_PRESS	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN215	SPS	BINARIES	IN215	SPARE_79	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN216	SPS	BINARIES	IN216	SPARE_80	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN301	SPS	BINARIES	IN301	I81_CHG_RECTIFIER	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN302	SPS	BINARIES	IN302	I82_CHG_LO_VOLT	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN303	SPS	BINARIES	IN303	I83_CHG_HI_VOLT	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN304	SPS	BINARIES	IN304	SPARE_84	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN305	SPS	BINARIES	IN305	SPARE_85	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN306	SPS	BINARIES	IN306	CKX611_LOW_SF6_GAS	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN307	SPS	BINARIES	IN307	CKX611_SF6_LOCKOUT	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN308	SPS	BINARIES	IN308	CKX612_LOW_SF6_GAS	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN309	SPS	BINARIES	IN309	CKX612_SF6_LOCKOUT	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN310	SPS	BINARIES	IN310	CKX613_LOW_SF6_GAS	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN311	SPS	BINARIES	IN311	CKX613_SF6_LOCKOUT	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN312	SPS	BINARIES	IN312	SPARE_92	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN313	SPS	BINARIES	IN313	SPARE_93	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN314	SPS	BINARIES	IN314	SPARE_94	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN315	SPS	BINARIES	IN315	SPARE_95	0	0	0	
TRUE	SEL_2440_2_1_SEL.FM_INST_IN316	SPS	BINARIES	IN316	SPARE_96	0	0	0	
	11P/611, IN201, 1 = intact	SEL-411L-1			CKX611 TRIP PATH				New Serial Point
	11P/611, IN202, 1=closed	SEL-411L-1			CKX611 STATUS				New Serial Point
	11P/611, IN203, 1 = good	SEL-411L-1			CKX611 TRIP DC				New Serial Point
	11P/611, IN204, 1 = on	SEL-411L-1			CKX611 79CS STATUS				New Serial Point
	11S/611, IN203, 1 = good	SEL-411L-1			CKX611 CLOSE DC				New Serial Point
	11P/612, IN201, 1 = intact	SEL-411LA			CKX612 TRIP PATH				New Serial Point
	11P/612, IN202, 1=closed	SEL-411LA			CKX612 STATUS				New Serial Point
	11P/612, IN203, 1 = good	SEL-411LA			CKX612 TRIP DC				New Serial Point
	11P/612, IN204, 1 = on	SEL-411LA			CKX612 79CS STATUS				New Serial Point
	11S/612, IN203, 1 = good	SEL-411LA			CKX612 CLOSE DC				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY ENABLE LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY TRIP LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY INST LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY TIME LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY COMM LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY SOTF LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY ZONE 1 LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY ZONE 2 LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY ZONE 3 LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY PHASE A LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY PHASE B LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY PHASE C LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY GROUND LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 87L LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 87L LOST LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 87L ALM LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY SPARE LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 79 RESET LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 79 LOCKOUT LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 79 CYCLE LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 25 SYNC LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 50 LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY 51 LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY LOP LED				New Serial Point
	11P/611	SEL-411L-1			CKX611 DPS LINE PRI RELAY IRIG LOCK LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY ENABLE LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY TRIP LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY INST LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY TIME LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY COMM LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY SOTF LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY ZONE 1 LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY ZONE 2 LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY ZONE 3 LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY PHASE A LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY PHASE B LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY PHASE C LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY GROUND LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 87L LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 87L LOST LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 87L ALM LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY SPARE LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 79 RESET LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 79 LOCKOUT LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 79 CYCLE LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 25 SYNC LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 50 LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY 51 LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY LOP LED				New Serial Point
	11S/611	SEL-411L-1			CKX611 DPS LINE SEC RELAY IRIG LOCK LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY ENABLE LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY TRIP LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY INST LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY TIME LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY COMM LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY SOTF LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY ZONE 1 LED				New Serial Point
	11P/612	SEL-411LA			CKX612 WESTSIDE LINE PRI RELAY ZONE 2 LED				New Serial Point

[illegible]

TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_013	13	MV	DPS_AMPS_B	Low Current	600	Digital Filter C	5	1000	H	AI13	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_014	14	MV	DPS_AMPS_C	Low Current	600	Digital Filter C	5	1000	H	AI14	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_015	15	MV	DPS_FAULT_DISTANCE	Low Current	20	Digital Filter C	5	1000	H	AI15	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_016	16	MV	PAT_MW	Low Current	63	Digital Filter C	5	1000	H	AI16	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_001	1	MV	PAT_MVAR	Low Current	63	Digital Filter C	5	1000	I	AI01	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_002	2	MV	PAT_VOLTS	Low Current	150	Digital Filter C	5	1000	I	AI02	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_003	3	MV	PAT_AMPS_A	Low Current	600	Digital Filter C	5	1000	I	AI03	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_004	4	MV	PAT_AMPS_B	Low Current	600	Digital Filter C	5	1000	I	AI04	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_005	5	MV	PAT_AMPS_C	Low Current	600	Digital Filter C	5	1000	I	AI05	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_006	6	MV	PAT_FAULT_DISTANCE	Low Current	40	Digital Filter C	5	1000	I	AI06	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_007	7	MV	EIA_6T3_69KV_KW	Low Current	31.5	Digital Filter C	5	1000	I	AI07	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_008	8	MV	EIA_6T3_69KV_KVAR	Low Current	31	Digital Filter C	5	1000	I	AI08	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_009	9	MV	A60_TRAN_PH_ANGLE	Low Current	60	Digital Filter C	5	1000	I	AI09	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_010	10	MV	A61_TRAN_6T3_AMPS_A	Low Current	1000	Digital Filter C	5	1000	I	AI10	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_011	11	MV	A62_TRAN_6T3_AMPS_B	Low Current	1000	Digital Filter C	5	1000	I	AI11	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_012	12	MV	A63_TRAN_6T3_AMPS_C	Low Current	1000	Digital Filter C	5	1000	I	AI12	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_013	13	MV		Low Current	250	Digital Filter C	5	1000	I	AI13	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_014	14	MV		Low Current	250	Digital Filter C	5	1000	I	AI14	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_015	15	MV		Low Current	250	Digital Filter C	5	1000	I	AI15	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_016	16	MV		Low Current	250	Digital Filter C	5	1000	I	AI16	SEL-2245-2	
				BUS_69_VOLTS_A						SERIAL	11P/611	SEL-411L-1	New Serial Point
				BUS_69_VOLTS_B						SERIAL	11P/611	SEL-411L-1	New Serial Point
				BUS_69_VOLTS_C						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_MW						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_MVAR						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_VOLTS						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_AMPS_A						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_AMPS_B						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_AMPS_C						SERIAL	11P/611	SEL-411L-1	New Serial Point
				125VDC VOLTAGE						SERIAL	11P/611	SEL-411L-1	New Serial Point
				PAT_MW						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_MVAR						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_VOLTS						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_AMPS_A						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_AMPS_B						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_AMPS_C						SERIAL	11P/612	SEL-411LA	New Serial Point

ANALOG OUTPUTS													
										SLOT	INPUT	CARD	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_001	1	MV	EIA1_6T1_69KV_KW	Low Current	24000	Digital Filter C	5	1000	F	AI01	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_002	2	MV	EAI1_6T1_69KV_KVAR	Low Current	24000	Digital Filter C	5	1000	F	AI02	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_003	3	MV	ITIE_KW	Low Current	25200	Digital Filter C	5	1000	F	AI03	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_004	4	MV	ITIE_KVAR	Low Current	25200	Digital Filter C	5	1000	F	AI04	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_005	5	MV	ITIE_KV_A	Low Current	10500	Digital Filter C	5	1000	F	AI05	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_006	6	MV	ITIE_KV_B	Low Current	10500	Digital Filter C	5	1000	F	AI06	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_007	7	MV	ITIE_KV_C	Low Current	10500	Digital Filter C	5	1000	F	AI07	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_008	8	MV	ITIE_AMPS_A	Low Current	1200	Digital Filter C	5	1000	F	AI08	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_009	9	MV	ITIE_AMPS_B	Low Current	1200	Digital Filter C	5	1000	F	AI09	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_010	10	MV	ITIE_AMPS_C	Low Current	1200	Digital Filter C	5	1000	F	AI10	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_011	11	MV	ITIE_PHASE_ANGLE	Low Current	120	Digital Filter C	5	1000	F	AI11	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_012	12	MV	BUS_KV_A	Low Current	10500	Digital Filter C	5	1000	F	AI12	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_013	13	MV	BUS_KV_B	Low Current	10500	Digital Filter C	5	1000	F	AI13	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_014	14	MV	BUS_KV_C	Low Current	10500	Digital Filter C	5	1000	F	AI14	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_015	15	MV	LTC_TAP_POS	Low Current	17.5	Digital Filter C	5	1000	F	AI15	SEL-2245-2	
TRUE	SEL_16AI_1_ECAT.INPUT_VALUE_016	16	MV	STA_PWR_KW	Low Current	4200	Digital Filter C	5	1000	F	AI16	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_001	1	MV	STA_PWR_AMPS_A	Low Current	200	Digital Filter C	5	1000	G	AI01	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_002	2	MV	STA_PWR_AMPS_B	Low Current	200	Digital Filter C	5	1000	G	AI02	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_003	3	MV	STA_PWR_AMPS_C	Low Current	200	Digital Filter C	5	1000	G	AI03	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_004	4	MV	CK233_KV	Low Current	10500	Digital Filter C	5	1000	G	AI04	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_005	5	MV	CK232_KV	Low Current	10500	Digital Filter C	5	1000	G	AI05	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_006	6	MV	CK231_KV	Low Current	10500	Digital Filter C	5	1000	G	AI06	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_007	7	MV	CK233_AMPS_A	Low Current	600	Digital Filter C	5	1000	G	AI07	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_008	8	MV	CK233_AMPS_B	Low Current	600	Digital Filter C	5	1000	G	AI08	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_009	9	MV	CK233_AMPS_C	Low Current	600	Digital Filter C	5	1000	G	AI09	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_010	10	MV	CK233_KW	Low Current	12600	Digital Filter C	5	1000	G	AI10	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_011	11	MV	CK232_AMPS_A	Low Current	600	Digital Filter C	5	1000	G	AI11	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_012	12	MV	CK232_AMPS_B	Low Current	600	Digital Filter C	5	1000	G	AI12	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_013	13	MV	CK232_AMPS_C	Low Current	600	Digital Filter C	5	1000	G	AI13	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_014	14	MV	CK232_KW	Low Current	12600	Digital Filter C	5	1000	G	AI14	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_015	15	MV	CK231_AMPS_A	Low Current	600	Digital Filter C	5	1000	G	AI15	SEL-2245-2	
TRUE	SEL_16AI_2_ECAT.INPUT_VALUE_016	16	MV	CK231_AMPS_B	Low Current	600	Digital Filter C	5	1000	G	AI16	SEL-2245-2	
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_001	1	MV	CK231_AMPS_C	Low Current	600	Digital Filter C	5	1000	H	AI01	SEL-2245-2	
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_002	2	MV	CK231_KW	Low Current	12600	Digital Filter C	5	1000	H	AI02	SEL-2245-2	
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_003	3	MV	CK233_KVAR	Low Current	12600	Digital Filter C	5	1000	H	AI03	SEL-2245-2	
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_004	4	MV	CK232_KVAR	Low Current	12600	Digital Filter C	5	1000	H	AI04	SEL-2245-2	
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_005	5	MV	CK231_KVAR	Low Current	12600	Digital Filter C	5	1000	H	AI05	SEL-2245-2	
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_006	6	MV	BUS_69_VOLTS_A	Low Current	150	Digital Filter C	5	1000	H	AI06	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_007	7	MV	BUS_69_VOLTS_B	Low Current	150	Digital Filter C	5	1000	H	AI07	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_008	8	MV	BUS_69_VOLTS_C	Low Current	150	Digital Filter C	5	1000	H	AI08	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_009	9	MV	DPS_MW	Low Current	63	Digital Filter C	5	1000	H	AI09	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_010	10	MV	DPS_MVAR	Low Current	63	Digital Filter C	5	1000	H	AI10	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_011	11	MV	DPS_VOLTS	Low Current	150	Digital Filter C	5	1000	H	AI11	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_012	12	MV	DPS_AMPS_A	Low Current	600	Digital Filter C	5	1000	H	AI12	SEL-2245-2	Remove

TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_013	13	MV	DPS_AMPS_B	Low Current	600	Digital Filter C	5	1000	H	AI13	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_014	14	MV	DPS_AMPS_C	Low Current	600	Digital Filter C	5	1000	H	AI14	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_015	15	MV	DPS_FAULT_DISTANCE	Low Current	20	Digital Filter C	5	1000	H	AI15	SEL-2245-2	Remove
TRUE	SEL_16AI_3_ECAT.INPUT_VALUE_016	16	MV	PAT_MW	Low Current	63	Digital Filter C	5	1000	H	AI16	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_001	1	MV	PAT_MVAR	Low Current	63	Digital Filter C	5	1000	I	AI01	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_002	2	MV	PAT_VOLTS	Low Current	150	Digital Filter C	5	1000	I	AI02	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_003	3	MV	PAT_AMPS_A	Low Current	600	Digital Filter C	5	1000	I	AI03	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_004	4	MV	PAT_AMPS_B	Low Current	600	Digital Filter C	5	1000	I	AI04	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_005	5	MV	PAT_AMPS_C	Low Current	600	Digital Filter C	5	1000	I	AI05	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_006	6	MV	PAT_FAULT_DISTANCE	Low Current	40	Digital Filter C	5	1000	I	AI06	SEL-2245-2	Remove
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_007	7	MV	EIA_6T3_69KV_KW	Low Current	31.5	Digital Filter C	5	1000	I	AI07	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_008	8	MV	EIA_6T3_69KV_KVAR	Low Current	31	Digital Filter C	5	1000	I	AI08	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_009	9	MV	A60_TRAN_PH_ANGLE	Low Current	60	Digital Filter C	5	1000	I	AI09	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_010	10	MV	A61_TRAN_6T3_AMPS_A	Low Current	1000	Digital Filter C	5	1000	I	AI10	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_011	11	MV	A62_TRAN_6T3_AMPS_B	Low Current	1000	Digital Filter C	5	1000	I	AI11	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_012	12	MV	A63_TRAN_6T3_AMPS_C	Low Current	1000	Digital Filter C	5	1000	I	AI12	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_013	13	MV		Low Current	250	Digital Filter C	5	1000	I	AI13	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_014	14	MV		Low Current	250	Digital Filter C	5	1000	I	AI14	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_015	15	MV		Low Current	250	Digital Filter C	5	1000	I	AI15	SEL-2245-2	
TRUE	SEL_16AI_4_ECAT.INPUT_VALUE_016	16	MV		Low Current	250	Digital Filter C	5	1000	I	AI16	SEL-2245-2	
				BUS_69_VOLTS_A						SERIAL	11P/611	SEL-411L-1	New Serial Point
				BUS_69_VOLTS_B						SERIAL	11P/611	SEL-411L-1	New Serial Point
				BUS_69_VOLTS_C						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_MW						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_MVAR						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_VOLTS						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_AMPS_A						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_AMPS_B						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_AMPS_C						SERIAL	11P/611	SEL-411L-1	New Serial Point
				125VDC VOLTAGE						SERIAL	11P/611	SEL-411L-1	New Serial Point
				DPS_FAULT_DISTANCE						SERIAL	11P/611	SEL-411L-1	New Serial Point
				PAT_MW						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_MVAR						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_VOLTS						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_AMPS_A						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_AMPS_B						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_AMPS_C						SERIAL	11P/612	SEL-411LA	New Serial Point
				PAT_FAULT_DISTANCE						SERIAL	11P/612	SEL-411LA	New Serial Point

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
ANALOGINPUTS								
DNPADDR.	POINT					SOURCE	UNITS	RECEIVERSCALED=RAWCOUNT
0	CM601MW	30	2	5	WS_CM601_MW	MFM/CM601-M571	KW	-540,000to539,998=-540,000to539,998
1	CM601MVAR	30	2	5	WS_CM601_MVAR	MFM/CM601-M571	KVAR	-540,000to539,998=-540,000to539,998
2	CM601AMPSIA	30	2	5	WS_CM601_IA	MFM/CM601-M571	A	0-2000=0-2000
3	CM601AMPSIB	30	2	5	WS_CM601_IB	MFM/CM601-M571	A	0-2000=0-2000
4	CM601AMPSIC	30	2	5	WS_CM601_IC	MFM/CM601-M571	A	0-2000=0-2000
5	CM601AMPSIN	30	2	5	WS_CM601_IN	MFM/CM601-M571	A	0-2000=0-2000
6	69KVBUSVOLTSVAB	30	2	5	WS_69KV_BUS_VAB	MFM/CM601-M571	KV	0to90=0to90
7	69KVBUSVOLTSVBC	30	2	5	WS_69KV_BUS_VBC	MFM/CM601-M571	KV	0to90=0to90
8	69KVBUSVOLTSVCA	30	2	5	WS_69KV_BUS_VCA	MFM/CM601-M571	KV	0to90=0to90
9	PATTERSONLINEVOLTSVA	30	2	5	WS_PATTERSON_LINE_VA	11P/CM601-SEL-311B	KV	0to32767=0to32767
10	CM601POWERFACTOR	30	2	5	WS_CM601_POWER_FACTOR	MFM/CM601-M571	PERUNIT	-32.768to32.767=-32.768to32.767
11	69KVFREQUENCYHZ	30	2	5	WS_69KV_FREQUENCY	MFM/CM601-M571	HZ	0to327.67=0to327.67
12	SPARE	30	2	5	WS_CM601_SPARE_A12			
13	SPARE	30	2	5	WS_CM601_SPARE_A13			
14	SPARE	30	2	5	WS_CM601_SPARE_A14			
15	CM602MW	30	2	5	WS_CM602_MW	MFM/CM602-M571	MW	-540,000to539,998=-540,000to539,998
16	CM602MVAR	30	2	5	WS_CM602_MVAR	MFM/CM602-M571	MVAR	-540,000to539,998=-540,000to539,998
17	CM602AMPSIA	30	2	5	WS_CM602_IA	MFM/CM602-M571	A	0-2000=0-2000
18	CM602AMPSIB	30	2	5	WS_CM602_IB	MFM/CM602-M571	A	0-2000=0-2000
19	CM602AMPSIC	30	2	5	WS_CM602_IC	MFM/CM602-M571	A	0-2000=0-2000
20	CM602AMPSIN	30	2	5	WS_CM602_IN	MFM/CM602-M571	A	0-2000=0-2000
21	EASTIOWALINEVOLTSVA	30	2	5	WS_EAST_IOWA_LINE_VA	11P/CM602-SEL-411LA	KV	0to32767=0to32767
22	CM602POWERFACTOR	30	2	5	WS_CM602_POWER_FACTOR	MFM/CM602-M571	PERUNIT	-32.768to32.767=-32.768to32.767
23	SPARE	30	2	5	WS_CM602_SPARE_A23			
24	SPARE	30	2	5	WS_CM602_SPARE_A24			
25	SPARE	30	2	5	WS_CM602_SPARE_A25			
26	CM603MW	30	2	5	WS_CM603_MW	MFM/CM603-M571	MW	-540,000to539,998=-540,000to539,998
27	CM603MVAR	30	2	5	WS_CM603_MVAR	MFM/CM603-M571	MVAR	-540,000to539,998=-540,000to539,998
28	CM603AMPSIA	30	2	5	WS_CM603_IA	MFM/CM603-M571	A	0-2000=0-2000
29	CM603AMPSIB	30	2	5	WS_CM603_IB	MFM/CM603-M571	A	0-2000=0-2000
30	CM603AMPSIC	30	2	5	WS_CM603_IC	MFM/CM603-M571	A	0-2000=0-2000
31	CM603AMPSIN	30	2	5	WS_CM603_IN	MFM/CM603-M571	A	0-2000=0-2000
32	WHITEOAKLINEVOLTSVA	30	2	5	WS_WHITE_OAK_LINE_VA	11P/CM603-SEL-311B	KV	0to32767=0to32767
33	CM603POWERFACTOR	30	2	5	WS_CM603_POWER_FACTOR	MFM/CM603-M571	PERUNIT	-32.768to32.767=-32.768to32.767
34	SPARE	30	2	5	WS_CM603_SPARE_A34			
35	SPARE	30	2	5	WS_CM603_SPARE_A35			
36	SPARE	30	2	5	WS_CM603_SPARE_A36			
37	CM610-CM6T1MW	30	2	5	WS_CM6T1_MW	MFM/CM610-M571	MW	-320,000to319,990=-320,000to319,990
38	CM610-CM6T1MVAR	30	2	5	WS_CM6T1_MVAR	MFM/CM610-M571	MVAR	-320,000to319,990=-320,000to319,990
39	CM610-CM6T1AMPSIA	30	2	5	WS_CM6T1_IA	MFM/CM610-M571	A	0-1200=0-1200
40	CM610-CM6T1AMPSIB	30	2	5	WS_CM6T1_IB	MFM/CM610-M571	A	0-1200=0-1200
41	CM610-CM6T1AMPSIC	30	2	5	WS_CM6T1_IC	MFM/CM610-M571	A	0-1200=0-1200
42	CM610-CM6T1POWERFACTOR	30	2	5	WS_CM6T1_POWER_FACTOR	MFM/CM610-M571	PERUNIT	-32.768to32.767=-32.768to32.767
43	SPARE	30	2	5	WS_CM6T1_SPARE_A43			
44	SPARE	30	2	5	WS_CM6T1_SPARE_A44			
45	SPARE	30	2	5	WS_CM6T1_SPARE_A45			
46	CM200KW	30	2	5	WS_CM200_MW	MFM/CM200-M571	KW	-252,000to251,992=-252,000to251,992
47	CM200KVAR	30	2	5	WS_CM200_MVAR	MFM/CM200-M571	KVAR	-252,000to251,992=-252,000to251,992
48	CM200AMPSIA	30	2	5	WS_CM200_IA	MFM/CM200-M571	A	0-4000=0-4000
49	CM200AMPSIB	30	2	5	WS_CM200_IB	MFM/CM200-M571	A	0-4000=0-4000

WESTSIDESUBSTATION								
Revision	Description						By	Date
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1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
50	CM200AMPSIC	30	2	5	WS_CM200_IC	MFM/CM200-M571	A	0-4000=0-4000
51	CM200AMPSIN	30	2	5	WS_CM200_IN	MFM/CM200-M571	A	0-4000=0-4000
52	CM200SYNCPOTENTIAL	30	2	5	WS_CM200_LINE_VA	11/CM200-SEL-351A	KV	0to32767=0to32767
53	CM200POWERFACTOR	30	2	5	WS_CM200_POWER_FACTOR	MFM/CM200-M571	PERUNIT	-32.768to32.767=-32.768to32.767
54	SPARE	30	2	5	WS_CM200_SPARE_A54			
55	SPARE	30	2	5	WS_CM200_SPARE_A55			
56	SPARE	30	2	5	WS_CM200_SPARE_A56			
57	CM210-CM6T1KW	30	2	5	WS_CM210_MW	MFM/CM210-M571	KW	-252,000to251,992=-252,000to251,992
58	CM210-CM6T1KVAR	30	2	5	WS_CM210_MVAR	MFM/CM210-M571	KVAR	-252,000to251,992=-252,000to251,992
59	CM210-CM6T1AMPSIA	30	2	5	WS_CM210_IA	MFM/CM210-M571	A	0-4000=0-4000
60	CM210-CM6T1AMPSIB	30	2	5	WS_CM210_IB	MFM/CM210-M571	A	0-4000=0-4000
61	CM210-CM6T1AMPSIC	30	2	5	WS_CM210_IC	MFM/CM210-M571	A	0-4000=0-4000
62	CM210-CM6T1AMPSIN	30	2	5	WS_CM210_IN	MFM/CM210-M571	A	0-4000=0-4000
63	13KVBUSVOLTSVA	30	2	5	WS_13KV_BUS_VA	MFM/CM210-M571	KV	0to21=0to21
64	13KVBUSVOLTSVB	30	2	5	WS_13KV_BUS_VB	MFM/CM210-M571	KV	0to21=0to21
65	13KVBUSVOLTSVC	30	2	5	WS_13KV_BUS_VC	MFM/CM210-M571	KV	0to21=0to21
66	CM210SYNCPOTENTIAL	30	2	5	WS_CM210_LINE_VA	11/CM210-SEL-351A	KV	0to32767=0to32767
67	CM210-CM6T1POWERFACTOR	30	2	5	WS_CM210_POWER_FACTOR	MFM/CM210-M571	PERUNIT	-32.768to32.767=-32.768to32.767
68	13KVFREQUENCYHZ	30	2	5	WS_13KV_FREQUENCY	MFM/CM210-M571	HZ	0to327.67=0to327.67
69	SPARE	30	2	5	WS_CM210_SPARE_A69			
70	SPARE	30	2	5	WS_CM210_SPARE_A70			
71	SPARE	30	2	5	WS_CM210_SPARE_A71			
72	CM211KW	30	2	5	WS_CM211_MW	MFM/CM211-M571	KW	-75,600to75,597to-75,600to75,597
73	CM211KVAR	30	2	5	WS_CM211_MVAR	MFM/CM211-M571	KVAR	-75,600to75,597to-75,600to75,597
74	CM211AMPSIA	30	2	5	WS_CM211_IA	MFM/CM211-M571	A	0-1200=0-1200
75	CM211AMPSIB	30	2	5	WS_CM211_IB	MFM/CM211-M571	A	0-1200=0-1200
76	CM211AMPSIC	30	2	5	WS_CM211_IC	MFM/CM211-M571	A	0-1200=0-1200
77	CM211AMPSIN	30	2	5	WS_CM211_IN	MFM/CM211-M571	A	0-1200=0-1200
78	CM211SYNCPOTENTIAL	30	2	5	WS_CM211_LINE_VA	11/CM211-SEL-351A	KV	0to32767=0to32767
79	CM211POWERFACTOR	30	2	5	WS_CM211_POWER_FACTOR	MFM/CM211-M571	PERUNIT	-32.768to32.767=-32.768to32.767
80	SPARE	30	2	5	WS_CM211_SPARE_A80			
81	SPARE	30	2	5	WS_CM211_SPARE_A81			
82	SPARE	30	2	5	WS_CM211_SPARE_A82			
83	CM212KW	30	2	5	WS_CM212_MW	MFM/CM212-M571	KW	-75,600to75,597to-75,600to75,597
84	CM212KVAR	30	2	5	WS_CM212_MVAR	MFM/CM212-M571	KVAR	-75,600to75,597to-75,600to75,597
85	CM212AMPSIA	30	2	5	WS_CM212_IA	MFM/CM212-M571	A	0-1200=0-1200
86	CM212AMPSIB	30	2	5	WS_CM212_IB	MFM/CM212-M571	A	0-1200=0-1200
87	CM212AMPSIC	30	2	5	WS_CM212_IC	MFM/CM212-M571	A	0-1200=0-1200
88	CM212AMPSIN	30	2	5	WS_CM212_IN	MFM/CM212-M571	A	0-1200=0-1200
89	CM212SYNCPOTENTIAL	30	2	5	WS_CM212_LINE_VA	11/CM212-SEL-351A	KV	0to32767=0to32767
90	CM212POWERFACTOR	30	2	5	WS_CM212_POWER_FACTOR	MFM/CM212-M571	PERUNIT	-32.768to32.767=-32.768to32.767
91	SPARE	30	2	5	WS_CM212_SPARE_A91			
92	SPARE	30	2	5	WS_CM212_SPARE_A92			
93	SPARE	30	2	5	WS_CM212_SPARE_A93			
94	CM213KW	30	2	5	WS_CM213_MW	MFM/CM213-M571	KW	-75,600to75,597to-75,600to75,597
95	CM213KVAR	30	2	5	WS_CM213_MVAR	MFM/CM213-M571	KVAR	-75,600to75,597to-75,600to75,597
96	CM213AMPSIA	30	2	5	WS_CM213_IA	MFM/CM213-M571	A	0-1200=0-1200
97	CM213AMPSIB	30	2	5	WS_CM213_IB	MFM/CM213-M571	A	0-1200=0-1200
98	CM213AMPSIC	30	2	5	WS_CM213_IC	MFM/CM213-M571	A	0-1200=0-1200
99	CM213AMPSIN	30	2	5	WS_CM213_IN	MFM/CM213-M571	A	0-1200=0-1200
100	CM213SYNCPOTENTIAL	30	2	5	WS_CM213_LINE_VA	11/CM213-SEL-351A	KV	0to32767=0to32767
101	CM213POWERFACTOR	30	2	5	WS_CM213_POWER_FACTOR	MFM/CM213-M571	PERUNIT	-32.768to32.767=-32.768to32.767
102	SPARE	30	2	5	WS_CM213_SPARE_A102			

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Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
103	SPARE	30	2	5	WS_CM213_SPARE_A103			
104	SPARE	30	2	5	WS_CM213_SPARE_A104			
105	CM214KW	30	2	5	WS_CM214_MW	MFM/CM214-M571	KW	-75,600to75,597to-75,600to75,597
106	CM214KVAR	30	2	5	WS_CM214_MVAR	MFM/CM214-M571	KVAR	-75,600to75,597to-75,600to75,597
107	CM214AMPSIA	30	2	5	WS_CM214_IA	MFM/CM214-M571	A	0-1200=0-1200
108	CM214AMPSIB	30	2	5	WS_CM214_IB	MFM/CM214-M571	A	0-1200=0-1200
109	CM214AMPSIC	30	2	5	WS_CM214_IC	MFM/CM214-M571	A	0-1200=0-1200
110	CM214AMPSIN	30	2	5	WS_CM214_IN	MFM/CM214-M571	A	0-1200=0-1200
111	CM214SYNCPOTENTIAL	30	2	5	WS_CM214_LINE_VA	11/CM214-SEL-351A	KV	0to32767=0to32767
112	CM214POWERFACTOR	30	2	5	WS_CM214_POWER_FACTOR	MFM/CM214-M571	PERUNIT	-32.768to32.767=-32.768to32.767
113	SPARE	30	2	5	WS_CM214_SPARE_A113			
114	SPARE	30	2	5	WS_CM214_SPARE_A114			
115	SPARE	30	2	5	WS_CM214_SPARE_A115			
116	CM215KW	30	2	5	WS_CM215_MW	MFM/CM215-M571	KW	-75,600to75,597to-75,600to75,597
117	CM215KVAR	30	2	5	WS_CM215_MVAR	MFM/CM215-M571	KVAR	-75,600to75,597to-75,600to75,597
118	CM215AMPSIA	30	2	5	WS_CM215_IA	MFM/CM215-M571	A	0-1200=0-1200
119	CM215AMPSIB	30	2	5	WS_CM215_IB	MFM/CM215-M571	A	0-1200=0-1200
120	CM215AMPSIC	30	2	5	WS_CM215_IC	MFM/CM215-M571	A	0-1200=0-1200
121	CM215AMPSIN	30	2	5	WS_CM215_IN	MFM/CM215-M571	A	0-1200=0-1200
122	CM215SYNCPOTENTIAL	30	2	5	WS_CM215_LINE_VA	11/CM215-SEL-351A	KV	0to32767=0to32767
123	CM215POWERFACTOR	30	2	5	WS_CM215_POWER_FACTOR	MFM/CM215-M571	PERUNIT	-32.768to32.767=-32.768to32.767
124	SPARE	30	2	5	WS_CM215_SPARE_A124			
125	SPARE	30	2	5	WS_CM215_SPARE_A125			
126	SPARE	30	2	5	WS_CM215_SPARE_A126			
127	STATIONDCVOLTS	30	2	5	WS_STATION_DC_VOLTS	11/cm210-SEL-351A(VDC)	VOLTS	0to32767=0to32767
128	SPARE	30	2	5	WS_SPARE_A128			
129	SPARE	30	2	5	WS_SPARE_A129			
130	SPARE	30	2	5	WS_SPARE_A130			
131	CM6T1LTC TAPPOSITION	30	2	5	WS_CM6T1 LTC TAP POSITION	CM6T1LTC-M2001C	STEP	-16to16(16Lto16R)=-16to16
132	SPARE	30	2	5	WS_SPARE_A132			
133	SPARE	30	2	5	WS_SPARE_A133			
134	SPARE	30	2	5	WS_SPARE_A134			
135	SPARE	30	2	5	WS_SPARE_A135			
136	PATTERSON LINE LOCATION OF LAST FAULT	30	2	5	L601_LOCATION	11P/601	MILES	
137	PATTERSON LINE MONTH OF LAST FAULT	30	2	5	L601_MONTH	11P/601		
138	PATTERSON LINE DAY OF LAST FAULT	30	2	5	L601_DAY	11P/601		
139	PATTERSON LINE YEAR OF LAST FAULT	30	2	5	L601_YEAR	11P/601		
140	PATTERSON LINE HOUR OF LAST FAULT	30	2	5	L601_HOUR	11P/601		
141	PATTERSON LINE MINUTE OF LAST FAULT	30	2	5	L601_MINUTE	11P/601		
142	PATTERSON SECOND OF LAST FAULT	30	2	5	L601_SECOND	11P/601		
143	PATTERSON LINE MILLISECONDS OF LAST FAULT	30	2	5	L601_MILLISECOND	11P/601		
144	E IOWA LINE LOCATION OF LAST FAULT	30	2	5	L602_LOCATION	11P/602	MILES	
145	E IOWA LINE MONTH OF LAST FAULT	30	2	5	L602_MONTH	11P/602		
146	E IOWA LINE DAY OF LAST FAULT	30	2	5	L602_DAY	11P/602		
147	E IOWA LINE YEAR OF LAST FAULT	30	2	5	L602_YEAR	11P/602		
148	E IOWA LINE HOUR OF LAST FAULT	30	2	5	L602_HOUR	11P/602		
149	E IOWA LINE MINUTE OF LAST FAULT	30	2	5	L602_MINUTE	11P/602		
150	E IOWA SECOND OF LAST FAULT	30	2	5	L602_SECOND	11P/602		
151	E IOWA LINE MILLISECONDS OF LAST FAULT	30	2	5	L602_MILLISECOND	11P/602		
152	WHITE OAK LINE LOCATION OF LAST FAULT	30	2	5	L603_LOCATION	11P/603	MILES	
153	WHITE OAK LINE MONTH OF LAST FAULT	30	2	5	L603_MONTH	11P/603		
154	WHITE OAK LINE DAY OF LAST FAULT	30	2	5	L603_DAY	11P/603		
155	WHITE OAK LINE YEAR OF LAST FAULT	30	2	5	L603_YEAR	11P/603		

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Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITYESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
156	WHITE OAK LINE HOUR OF LAST FAULT	30	2	5	L603_HOUR	11P/603		
157	WHITE OAK LINE MINUTE OF LAST FAULT	30	2	5	L603_MINUTE	11P/603		
158	WHITE OAK SECOND OF LAST FAULT	30	2	5	L603_SECOND	11P/603		
159	WHITE OAK LINE MILLISECONDS OF LAST FAULT	30	2	5	L603_MILLISECOND	11P/603		
ANALOGOUTPUTS								
DNPADDR.	POINT					SOURCE	UNIT	NOTE
0	NONE							
1								
2								
3								
4								
5								
6								
7								
DIGITALOUTPUTS								
DNPADDR.	POINT					SOURCE	1=	NOTE
0	DISABLECM601RECLOSING	12	1	x81	WS_DISABLE_CM601_RECLOSING	SCADAMASTER	DISABLERECLOSING	DPAC1_OUT101
	ENABLECM601RECLOSING			x41	WS_ENABLE_CM601_RECLOSING	SCADAMASTER	ENABLERECLOSING	DPAC1_OUT102
1	TRIPCM601	12	1	x81	WS_TRIP_CM601	SCADAMASTER	TRIP	DPAC1_OUT103
	CLOSECM601			x41	WS_CLOSE_CM601	SCADAMASTER	CLOSE	DPAC1_OUT104
2	DISABLECM602RECLOSING	12	1	x81	WS_DISABLE_CM602_RECLOSING	SCADAMASTER	DISABLERECLOSING	DPAC1_OUT105
	ENABLECM602RECLOSING			x41	WS_ENABLE_CM602_RECLOSING	SCADAMASTER	ENABLERECLOSING	DPAC1_OUT106
3	TRIPCM602	12	1	x81	WS_TRIP_CM602	SCADAMASTER	TRIP	DPAC1_OUT107
	CLOSECM602			x41	WS_CLOSE_CM602	SCADAMASTER	CLOSE	DPAC1_OUT108
4	DISABLECM603RECLOSING	12	1	x81	WS_DISABLE_CM603_RECLOSING	SCADAMASTER	DISABLERECLOSING	DPAC1_OUT109
	ENABLECM602RECLOSING			x41	WS_ENABLE_CM603_RECLOSING	SCADAMASTER	ENABLERECLOSING	DPAC1_OUT110
5	TRIPCM603	12	1	x81	WS_TRIP_CM603	SCADAMASTER	TRIP	DPAC1_OUT111
	CLOSECM603			x41	WS_CLOSE_CM603	SCADAMASTER	CLOSE	DPAC1_OUT112
6	TRIPCM610	12	1	x81	WS_TRIP_CM610	SCADAMASTER	TRIP	DPAC1_OUT113
	CLOSECM610			x41	WS_CLOSE_CM610	SCADAMASTER	CLOSE	DPAC1_OUT114
7	RESERVEDFORAUDIODOORALARM	12	1	x81	WS_DOOR_ALARM_B007	SCADAMASTER	AUDIOALARM	DPAC1_OUT115
8	RESERVEDFORRTULOCAL/REMOTELIGHTS			x41	WS_LOC_REMOTE_B007	SCADAMASTER	VISUALINDICATION	DPAC1_OUT116
9	TRIPCM200	12	1	x81	WS_TRIP_CM200	SCADAMASTER	TRIP	DPAC3_OUT101
	CLOSECM200			x41	WS_CLOSE_CM200	SCADAMASTER	CLOSE	DPAC3_OUT102
10	TRIPCM210	12	1	x81	WS_TRIP_CM210	SCADAMASTER	TRIP	DPAC3_OUT103
	CLOSECM210			x41	WS_CLOSE_CM210	SCADAMASTER	CLOSE	DPAC3_OUT104
11	DISABLECM211RECLOSING	12	1	x81	WS_DISABLE_CM211_RECLOSING	SCADAMASTER	DISABLERECLOSING	DPAC3_OUT105
	ENABLECM211RECLOSING			x41	WS_ENABLE_CM211_RECLOSING	SCADAMASTER	ENABLERECLOSING	DPAC3_OUT106
12	TRIPCM211	12	1	x81	WS_TRIP_CM211	SCADAMASTER	TRIP	DPAC3_OUT107
	CLOSECM211			x41	WS_CLOSE_CM211	SCADAMASTER	CLOSE	DPAC3_OUT108
13	DISABLECM212RECLOSING	12	1	x81	WS_DISABLE_CM212_RECLOSING	SCADAMASTER	DISABLERECLOSING	DPAC3_OUT109
	ENABLECM212RECLOSING			x41	WS_ENABLE_CM212_RECLOSING	SCADAMASTER	ENABLERECLOSING	DPAC3_OUT110
14	TRIPCM212	12	1	x81	WS_TRIP_CM212	SCADAMASTER	TRIP	DPAC3_OUT111
	CLOSECM212			x41	WS_CLOSE_CM212	SCADAMASTER	CLOSE	DPAC3_OUT112
15	DISABLECM213RECLOSING	12	1	x81	WS_DISABLE_CM213_RECLOSING	SCADAMASTER	DISABLERECLOSING	DPAC3_OUT113
	ENABLECM213RECLOSING			x41	WS_ENABLE_CM213_RECLOSING	SCADAMASTER	ENABLERECLOSING	DPAC3_OUT114
16	TRIPCM213	12	1	x81	WS_TRIP_CM213	SCADAMASTER	TRIP	DPAC3_OUT115
	CLOSECM213			x41	WS_CLOSE_CM213	SCADAMASTER	CLOSE	DPAC3_OUT116
17	DISABLECM214RECLOSING	12	1	x81	WS_DISABLE_CM214_RECLOSING	SCADAMASTER	DISABLERECLOSING	DPAC4_OUT101

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Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
	ENABLECM214RECLOSING			x41	WS_ENABLE_CM214_RECLOSING	SCADAMASTER	ENABLERECLOSING	DPAC4_OUT102
18	TRIPCM214	12	1	x81	WS_TRIP_CM214	SCADAMASTER	TRIP	DPAC4_OUT103
	CLOSECM214			x41	WS_CLOSE_CM214	SCADAMASTER	CLOSE	DPAC4_OUT104
19	SPARE	12	1	x81	WS_SPARE_B019_T	SCADAMASTER		DPAC4_OUT105
	SPARE			x41	WS_SPARE_B019_C	SCADAMASTER		DPAC4_OUT106
20	SPARE	12	1	x81	WS_SPARE_B020_T	SCADAMASTER		DPAC4_OUT107
	SPARE			x41	WS_SPARE_B020_C	SCADAMASTER		DPAC4_OUT108
21	SPARE	12	1	x81	WS_SPARE_B021_T	SCADAMASTER		DPAC4_OUT109
	SPARE			x41	WS_SPARE_B021_C	SCADAMASTER		DPAC4_OUT110
22	SPARE	12	1	x81	WS_SPARE_B022_T	SCADAMASTER		DPAC4_OUT111
	SPARE			x41	WS_SPARE_B022_C	SCADAMASTER		DPAC4_OUT112
23	SPARE	12	1	x81	WS_SPARE_B023_T	SCADAMASTER		DPAC4_OUT113
	SPARE			x41	WS_SPARE_B023_C	SCADAMASTER		DPAC4_OUT114
24	SPARE	12	1	x81	WS_SPARE_B024_T	SCADAMASTER		DPAC4_OUT115
	SPARE			x41	WS_SPARE_B024_C	SCADAMASTER		DPAC4_OUT116
25	SPARE	12	1	x81	WS_SPARE_B025_T	SCADAMASTER		
	SPARE			x41	WS_SPARE_B025_C	SCADAMASTER		
26	SPARE	12	1	x81	WS_SPARE_B026_T	SCADAMASTER		
	SPARE			x41	WS_SPARE_B026_C	SCADAMASTER		
27	SPARE	12	1	x81	WS_SPARE_B027_T	SCADAMASTER		
	SPARE			x41	WS_SPARE_B027_C	SCADAMASTER		
28	SPARE	12	1	x81	WS_SPARE_B028_T	SCADAMASTER		
	SPARE			x41	WS_SPARE_B028_C	SCADAMASTER		
DIGITALINPUTS								
DNPADDR.	POINT					SOURCE	1=	NOTE
0	DPAC1WETTINGVOLTAGE	1	1	1	WS_DPAC1_WETTING_VOLTAGE	DPAC1IN201	WETTINGVOLTAGENORMAL	DPAC1IN201
1	DPAC4FAIL	1	1	1	WS_DPAC_4_FAIL	DPAC4	DPACFAILURE	DPAC1IN202
2	CM601STATUS	1	2	2	WS_CM601_STATUS	CM60152A	CLOSED	DPAC1IN203
3	CM601LOCAL/REMOTESWITCHATBREAKER	1	1	1	WS_CM601_LOC_REM_SW_AT_BREAKER	CM60143	LOCAL	DPAC1IN204
4	CM601LOSSOFCHARGEMOTORDC	1	1	1	WS_CM601_LOSS_OF_CHARGE_MTR_DC	CM60127-5	LOSSOFDC	DPAC1IN205
5	CM601LOSSOFTRIPCIRCUIT2DC	1	1	1	WS_CM601_LOSS_OF_TRIP_CKT_2_DC	CM60127-4	LOSSOFDC	DPAC1IN206
6	CM601LOSSOFTRIPCIRCUIT1DC	1	1	1	WS_CM601_LOSS_OF_TRIP_CKT_1_DC	CM60127-3	LOSSOFDC	DPAC1IN207
7	CM601LOSSOFCLOSECIRCUITDC	1	1	1	WS_CM601_LOSS_OF_CLOSE_CKT_DC	CM60127-2	LOSSOFDC	DPAC1IN208
8	CM601LOSSOFAUXILIARYAC	1	1	1	WS_CM601_LOSS_OF_AUXILIARY_AC	CM60127-1	LOSSOFAC	DPAC1IN209
9	CM601GASPRESSURECRITICAL-BLOCKTRIPANDCLOSE	1	1	1	WS_CM601_GAS_PRESSURE_CRITICAL	CM60163AX/BX	LOWGASPRESSURE	DPAC1IN210
10	CM601CLOSINGSPRINGDISCHARGED	1	1	1	WS_CM601_CLOSING_SPRING_DISCHGED	CM60162-1	SPRINGDISCHARGED	DPAC1IN211
11	CM601LOWGASPRESSURE	1	1	1	WS_CM601_LOW_GAS_PRESSURE	CM60163-2	LOWGASPRESSURE	DPAC1IN212
12	CM601PRIMARYRELAYFAIL	1	1	1	WS_CM601_PRIMARY_RELAY_FAIL	CM60111P	RELAYFAILURE	DPAC1IN213
13	CM601TRIPCOILFAILURE	1	1	1	WS_CM601_TRIP_COIL_FAILURE	CM60152CSTCM	TRIPCOILFAILURE	DPAC1IN214
14	CM601SECONDARYRELAYFAIL	1	1	1	WS_CM601_SECONDARY_RELAY_FAIL	CM60111S	RELAYFAILURE	DPAC1IN215
15	87B/CM6B1DIFFERENTIALRELAYFAILURE	1	1	1	WS_87B_CM6B1_DIFF_RELAY_FAILURE	87B/CM6B1	RELAYFAILURE	DPAC1IN216
16	69KVBUSLOCKOUTTRIPCOILFAILURE	1	1	1	WS_69KV_BUS_LO_TRIP_COIL_FAILURE	86B/CM6B1TCM	TRIPCOILFAILURE	DPAC1IN301
17	CM601BREAKERFAILURELOCKOUTTRIPCOILFAILURE	1	1	1	WS_CM601_BF_LO_TRIP_COIL_FAILURE	86BF/CM601TCM	TRIPCOILFAILURE	DPAC1IN302
18	CM602BREAKERFAILURELOCKOUTTRIPCOILFAILURE	1	1	1	WS_CM602_BF_LO_TRIP_COIL_FAILURE	86BF/CM602TCM	TRIPCOILFAILURE	DPAC1IN303
19	CM603BREAKERFAILURELOCKOUTTRIPCOILFAILURE	1	1	1	WS_CM603_BF_LO_TRIP_COIL_FAILURE	86BF/CM603TCM	TRIPCOILFAILURE	DPAC1IN304
20	CM610BREAKERFAILURELOCKOUTTRIPCOILFAILURE	1	1	1	WS_CM610_BF_LO_TRIP_COIL_FAILURE	86BF/CM610TCM	TRIPCOILFAILURE	DPAC1IN305
21	SPARE	1	1	1	WS_SPARE_BI21			DPAC1IN306
22	69KVBUSLOCKOUTTRIP	1	2	2	WS_69KV_BUS_LOCKOUT_TRIP	86B/CM6B1	LOCKOUTTRIP	DPAC1IN307
23	CM601BREAKERFAILURELOCKOUTTRIP	1	2	2	WS_CM601_BF_LOCKOUT_TRIP	86BF/CM601	LOCKOUTTRIP	DPAC1IN308
24	CM602BREAKERFAILURELOCKOUTTRIP	1	2	2	WS_CM602_BF_LOCKOUT_TRIP	86BF/CM602	LOCKOUTTRIP	DPAC1IN309
25	CM603BREAKERFAILURELOCKOUTTRIP	1	2	2	WS_CM603_BF_LOCKOUT_TRIP	86BF/CM603	LOCKOUTTRIP	DPAC1IN310
26	CM610BREAKERFAILURELOCKOUTTRIP	1	2	2	WS_CM610_BF_LOCKOUT_TRIP	86BF/CM610	LOCKOUTTRIP	DPAC1IN311

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
27	SPARE	1	1	1	WS SPARE BI27			DPAC1IN312
28	ETHERNETSWITCHFAIL	1	1	1	WS_ETHERNET_SWITCH_FAIL	SWITCH	SWITCHFAILURE	DPAC1IN313
29	EASTDOOROPEN	1	1	1	WS_EDOOR BI29	DOORCONTACT	DOOROPEN	DPAC1IN314
30	WESTDOOROPEN	1	1	1	WS_WDOOR BI30	DOORCONTACT	DOOROPEN	DPAC1IN315
31	RESERVEDFORDOORALARMA	1	1	1	WS_DOORACK BI31	SWITCHCONTACT	ACKNOWLEDGE	DPAC1IN316
32	DPAC2WETTINGVOLTAGE	1	1	1	WS_DPAC2 WETTING VOLTAGE	DPAC2IN101	WETTINGVOLTAGENORMAL	DPAC2IN101
33	DPAC1FAIL	1	1	1	WS_DPAC1 FAIL	DPAC1	DPAC1FAIL	DPAC2IN102
34	CM610STATUS	1	2	2	WS_CM610_STATUS	CM61052ATCM	CLOSED	DPAC2IN103
35	CM610LOCAL/REMOTESWITCHATBREAKER	1	1	1	WS_CM610_LOC REM SW AT BREAKER	CM61043	LOCAL	DPAC2IN104
36	CM610LOSSOFCHARGE	1	1	1	WS_CM610_LOSS_OF_CHARGE MTR_DC	CM61027-5	LOSSOFDC	DPAC2IN105
37	CM610LOSSOFTRIPCIRCUIT2DC	1	1	1	WS_CM610_LOSS_OF_TRIP_CKT_2_DC	CM61027-4	LOSSOFDC	DPAC2IN106
38	CM610LOSSOFTRIPCIRCUIT1DC	1	1	1	WS_CM610_LOSS_OF_TRIP_CKT_1_DC	CM61027-3	LOSSOFDC	DPAC2IN107
39	CM610LOSSOFCLOSECIRCUITDC	1	1	1	WS_CM610_LOSS_OF_CLOSE_CKT_DC	CM61027-2	LOSSOFDC	DPAC2IN108
40	CM610LOSSOFAUXILIARYAC	1	1	1	WS_CM610_LOSS_OF_AUXILIARY AC	CM61027-1	LOSSOFAC	DPAC2IN109
41	CM610GASPRESSURECRITICAL-BLOCKTRIPANDCLOSE	1	1	1	WS_CM610_GAS PRESSURE CRITICAL	CM61063AX/BX	LOWGASPRESSURE	DPAC2IN110
42	CM610CLOSINGSPRINGDISCHARGED	1	1	1	WS_CM610_CLOSING_SPRING DISCHGED	CM61062-1	SPRINGDISCHARGED	DPAC2IN111
43	CM610LOWGASPRESSURE	1	1	1	WS_CM610_LOW GAS PRESSURE	CM61063-2	LOWGASPRESSURE	DPAC2IN112
44	CM610OVERCURRENTRELAYFAIL	1	1	1	WS_CM610_OC RELAY FAIL	CM61051	RELAYFAILURE	DPAC2IN113
45	CM610TRIPCOILFAILURE	1	1	1	WS_CM610_TRIP COIL FAILURE	CM61052CS	TRIPCOILFAILURE	DPAC2IN114
46	CM6T1DIFFERENTIALRELAYFAIL	1	1	1	WS_CM6T1_DIFF_RELAY FAIL	87T/CM6T1	RELAYFAILURE	DPAC2IN215
47	CM6T1TRANSFORMERLOCKOUTTRIP	1	1	1	WS_CM6T1_TRANSF_LO TRIP	86T/CM6T1	LOCKOUTTRIP	DPAC2IN116
48	CM6T1TRANSFORMERLOCKOUTTRIPCOILFAILURE	1	1	1	WS_CM6T1_LO TRIP COIL FAIL	86T/CM6T1TCM	TRIPCOILFAILURE	DPAC2IN201
49	CM6T1OILTEMPERATURE	1	1	1	WS_CM6T1_OIL TEMPERATURE	26QT/CM6T1	HIGHTEMPERATURE	DPAC2IN202
50	CM6T1WINDINGTEMPERATURE	1	1	1	WS_CM6T1_WINDING TEMP	49WT/CM6T1	HIGHTEMPERATURE	DPAC2IN203
51	CM6T1LTCLOCKOUT	1	1	1	WS_CM6T1_LTC LOCKOUT	86X/CM6T1	LOCKOUTTRIPPED	DPAC2IN204
52	CM6T1LOWOIL	1	1	1	WS_CM6T1_LOW OIL	71Q-1OR71Q-2/CM6T1	MAINTANKORLTCLOWOIL	DPAC2IN205
53	CM6T1CRITICALLOWOIL	1	1	1	WS_CM6T1_CRITICAL_LOW OIL	71Q-1OR71Q-2/CM6T1	MAINTANKORLTCCRITICALLOWOIL	DPAC2IN206
54	CM6T1PRESSURERELIEF	1	1	1	WS_CM6T1_PRESSURE RELIEF	63G-1OR63G-2/CM6T1	MAINTANKORLTCPRESSURERELIEF	DPAC2IN207
55	CM6T1MAINTANKPRESSURE	1	1	1	WS_CM6T1_MAIN TANK PRESS	63G-8OR63G-9/CM6T1	MAINTANKHIGHORLOWPRESSURE	DPAC2IN208
56	CM6T1NITROGENPRESSURE	1	1	1	WS_CM6T1_NITROGEN PRESS	63G-10/CM6T1	LOWNITROGENCYLINDERPRESSURE	DPAC2IN209
57	CM6T1BACKUPLTCCONTROL	1	1	1	WS_CM6T1_BU LTC CTRL	90BU/CM6T1	BACKUPCONTROLOPERATION	DPAC2IN210
58	CM6T1FAULTPRESSURE	1	2	2	WS_CM6T1_FAULT PRESSURE	63X-1OR63X-2/CM6T1	MAINTANKORLTCAULTPRESSURE	DPAC2IN211
59	CM6T1LTCATLIMITS	1	1	1	WS_CM6T1_LTC AT LIMITS	171OR172/CM6T1	LTCATUPPERORLOWERLIMIT	DPAC2IN212
60	CM6T1COOLINGPOWER	1	1	1	WS_CM6T1_COOLING POWER	27-1,27-2OR27-3/CM6T1	LOSSOFACFANPOWERORCONTROLS	DPAC2IN213
61	CM6T1HEATERPOWER	1	1	1	WS_CM6T1_HEATER POWER	27-4/CM6T1	LOSSOFHEATINGACSUPPLY	DPAC2IN214
62	CM6T1LTCPOWERORPOTENTIAL	1	1	1	WS_CM6T1_LTC_PWR_OR POT	27-5OR27-6/CM6T1	LOSSOFLTACACSUPPLYORPOTENTIAL	DPAC2IN215
63	CM6T1LTCCONTROL	1	1	1	WS_CM6T1_LTC CONTROL	90/CM6T1	LTCCONTROLALARM	DPAC2IN216
64	CM6T1DCSUPPLY	1	1	1	WS_CM6T1_DC SUPPLY	27-7/CM6T1	LOSSOFDC	DPAC2IN301
65	CM6T1FANSTURNEDOFF	1	1	1	WS_CM6T1_FANS TURNED OFF	33-1,33-2/CM6T1	FANSTURNEDOFF	DPAC2IN302
66	LOSSOFBACKUPACSTATIONSERVICE	1	1	1	WS_LOSS_OF_BU AC STA SRV	27E	LOSSOFBACKUPSTATIONSERVICE	DPAC2IN303
67	LOSSOFNORMALACSTATIONSERVICE	1	1	1	WS_LOSS_OF_NOR AC STA SRV	27P	LOSSOFNORMALSTATIONSERVICE	DPAC2IN304
68	CHARGERNOCHARGE	1	1	1	WS_CHARGER NO CHARGE	CHARGER	NODCCHARGE	DPAC2IN305
69	NEGATIVEBATTERYGROUND	1	1	1	WS_NEG BATTERY_GROUND	CHARGER	NEGATIVEGROUND	DPAC2IN306
70	POSITIVEBATTERYGROUND	1	1	1	WS_POS BATTERY_GROUND	CHARGER	POSITIVEGROUND	DPAC2IN307
71	LOWBATTERYVOLTAGE	1	1	1	WS_LOW BATTERY VOLTAGE	CHARGER	LOWVOLTAGE	DPAC2IN308
72	HIGHBATTERYVOLTAGE	1	1	1	WS_HIGH BATTERY VOLTAGE	CHARGER	HIGHVOLTAGE	DPAC2IN309
73	CHARGERACPOWERFAIL	1	1	1	WS_CHARGER AC POWER FAIL	CHARGER	LOSSOFACPOWER	DPAC2IN310
74	WESTSMOKEDETECTOR	1	1	1	WS_WEST_SMOKE DETECTOR	WESTSMOKEDTECT	SMOKE/HEATDETECTED	DPAC2IN311
75	EASTSMOKEDETECTOR	1	1	1	WS_EAST_SMOKE DETECTOR	EASTSMOKEDTECT	SMOKE/HEATDETECTED	DPAC2IN312
76	HIGHBUILDINGTEMPERATURE	1	1	1	WS_HIGH_BUILDING TEMPERATURE	THERMOSTAT	HIGHBUILDINGTEMPERATURE	DPAC2IN313
77	LOWBUILDINGTEMPERATURE	1	1	1	WS_LOW_BUILDING TEMPERATURE	THERMOSTAT	LOWBUILDINGTEMPERATURE	DPAC2IN314
78	SPARE	1	1	1	WS SPARE BI78			DPAC2IN315
79	RTUREMOTEENABLED	1	1	1	WS_RTU_REMOTE BI79	TOGGLESWITCH	RTUINREMOTEMODE	DPAC2IN316

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3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
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CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
80	DPAC3WETTINGVOLTAGE	1	1	1	WS_DPAC3_WETTING_VOLTAGE	DPAC3IN201	WETTINGVOLTAGENORMAL	DPAC3IN201
81	DPAC2FAIL	1	1	1	WS_DPAC2_FAIL	DPAC2	DPAC2FAIL	DPAC3IN202
82	CM602STATUS	1	2	2	WS_CM602_STATUS	CM60252A	CLOSED	DPAC3IN203
83	CM602LOCAL/REMOTESWITCHATBREAKER	1	1	1	WS_CM602_LOC_REM_SW_AT_BREAKER	CM60243	LOCAL	DPAC3IN204
84	CM602LOSSOFCHARGEMOTORDC	1	1	1	WS_CM602_LOSS_OF_CHARGE_MTR_DC	CM60227-5	LOSSOFDC	DPAC3IN205
85	CM602LOSSOFTRIPCIRCUIT2DC	1	1	1	WS_CM602_LOSS_OF_TRIP_CKT_2_DC	CM60227-4	LOSSOFDC	DPAC3IN206
86	CM602LOSSOFTRIPCIRCUIT1DC	1	1	1	WS_CM602_LOSS_OF_TRIP_CKT_1_DC	CM60227-3	LOSSOFDC	DPAC3IN207
87	CM602LOSSOFCLOSECIRCUITDC	1	1	1	WS_CM602_LOSS_OF_CLOSE_CKT_DC	CM60227-2	LOSSOFDC	DPAC3IN208
88	CM602LOSSOFAUXILIARYAC	1	1	1	WS_CM602_LOSS_OF_AUXILIARY_AC	CM60227-1	LOSSOFAC	DPAC3IN209
89	CM602GASPRESSURECRITICAL-BLOCKTRIPANDCLOSE	1	1	1	WS_CM602_GAS_PRESSURE_CRITICAL	CM60263AX/BX	LOWGASPRESSURE	DPAC3IN210
90	CM602CLOSINGSPRINGDISCHARGED	1	1	1	WS_CM602_CLOSING_SPRING_DISCHGED	CM60262-1	SPRINGDISCHARGED	DPAC3IN211
91	CM602LOWGASPRESSURE	1	1	1	WS_CM602_LOW_GAS_PRESSURE	CM60263-2	LOWGASPRESSURE	DPAC3IN212
92	CM602PRIMARYRELAYFAIL	1	1	1	WS_CM602_PRIMARY_RELAY_FAIL	CM60211P	RELAYFAILURE	DPAC3IN213
93	CM602TRIPCOILFAILURE	1	1	1	WS_CM602_TRIP_COIL_FAILURE	CM60252CSTCM	TRIPCOILFAILURE	DPAC3IN214
94	CM602SECONDARYRELAYFAIL	1	1	1	WS_CM602_SECONDARY_RELAY_FAIL	CM60211S	RELAYFAILURE	DPAC3IN215
95	SPARE	1	1	1	WS_SPARE BI95			DPAC3IN216
96	SPARE	1	1	1	WS_SPARE BI96			DPAC3IN301
97	CM603STATUS	1	2	2	WS_CM603_STATUS	CM60352A	CLOSED	DPAC3IN302
98	CM603LOCAL/REMOTESWITCHATBREAKER	1	1	1	WS_CM603_LOC_REM_SW_AT_BREAKER	CM60343	LOCAL	DPAC3IN303
99	CM603LOSSOFCHARGEMOTORDC	1	1	1	WS_CM603_LOSS_OF_CHARGE_MTR_DC	CM60327-5	LOSSOFDC	DPAC3IN304
100	CM603LOSSOFTRIPCIRCUIT2DC	1	1	1	WS_CM603_LOSS_OF_TRIP_CKT_2_DC	CM60327-4	LOSSOFDC	DPAC3IN305
101	CM603LOSSOFTRIPCIRCUIT1DC	1	1	1	WS_CM603_LOSS_OF_TRIP_CKT_1_DC	CM60327-3	LOSSOFDC	DPAC3IN306
102	CM603LOSSOFCLOSECIRCUITDC	1	1	1	WS_CM603_LOSS_OF_CLOSE_CKT_DC	CM60327-2	LOSSOFDC	DPAC3IN307
103	CM603LOSSOFAUXILIARYAC	1	1	1	WS_CM603_LOSS_OF_AUXILIARY_AC	CM60327-1	LOSSOFAC	DPAC3IN308
104	CM603GASPRESSURECRITICAL-BLOCKTRIPANDCLOSE	1	1	1	WS_CM603_GAS_PRESSURE_CRITICAL	CM60363AX/BX	LOWGASPRESSURE	DPAC3IN309
105	CM603CLOSINGSPRINGDISCHARGED	1	1	1	WS_CM603_CLOSING_SPRING_DISCHGED	CM60362-1	SPRINGDISCHARGED	DPAC3IN310
106	CM603LOWGASPRESSURE	1	1	1	WS_CM603_LOW_GAS_PRESSURE	CM60363-2	LOWGASPRESSURE	DPAC3IN311
107	CM603PRIMARYRELAYFAIL	1	1	1	WS_CM603_PRIMARY_RELAY_FAIL	CM60311P	RELAYFAILURE	DPAC3IN312
108	CM603TRIPCOILFAILURE	1	1	1	WS_CM603_TRIP_COIL_FAILURE	CM60352CSTCM	TRIPCOILFAILURE	DPAC3IN313
109	CM603SECONDARYRELAYFAIL	1	1	1	WS_CM603_SECONDARY_RELAY_FAIL	CM60311S	RELAYFAILURE	DPAC3IN314
110	SPARE	1	1	1	WS_SPARE BI110			DPAC3IN315
111	SPARE	1	1	1	WS_SPARE BI111			DPAC3IN316
112	DPAC4WETTINGVOLTAGE	1	1	1	WS_DPAC4_WETTING_VOLTAGE	DPAC4IN201	WETTINGVOLTAGENORMAL	DPAC4IN201
113	DPAC3FAIL	1	1	1	WS_DPAC3_FAIL	DPAC3	DPAC3FAIL	DPAC4IN202
114	CM210STATUS	1	2	2	WS_CM210_STATUS	CM21052A	CLOSED	DPAC4IN203
115	13KVBUSLOCKOUTTRIP	1	2	2	WS_13KV_BUS_LOCKOUT_TRIP	86B/CM2B1	LOCKOUTTRIP	DPAC4IN204
116	CM210TRIPCOILFAILURE	1	1	1	WS_CM210_TRIP_COIL_FAILURE	CM21052CSTCM	TRIPCOILFAILURE	DPAC4IN205
117	CM210RELAYFAIL	1	1	1	WS_CM210_RELAY_FAIL	11/CM210	RELAYFAILURE	DPAC4IN206
118	RTAC2FAIL	1	1	1	WS_RTAC2_FAIL	RTAC2	RTUFAILURE	DPAC4IN207
119	13KVBUSLOCKOUTTRIPCOILFAILURE	1	1	1	WS_13KV_BUS_LOT_TRIP_COIL_FAIL	86B/CM2B1TCM	TRIPCOILFAILURE	DPAC4IN208
120	CM211STATUS	1	2	2	WS_CM211_STATUS	CM21152A	CLOSED	DPAC4IN209
121	CM211TRIPCOILFAILURE	1	1	1	WS_CM211_TRIP_COIL_FAILURE	CM21152CSTCM	TRIPCOILFAILURE	DPAC4IN210
122	CM211RELAYFAIL	1	1	1	WS_CM211_RELAY_FAIL	11/CM211	RELAYFAILURE	DPAC4IN211
123	CM212STATUS	1	2	2	WS_CM212_STATUS	CM21252A	CLOSED	DPAC4IN212
124	CM212TRIPCOILFAILURE	1	1	1	WS_CM212_TRIP_COIL_FAILURE	CM21252CSTCM	TRIPCOILFAILURE	DPAC4IN213
125	CM212RELAYFAIL	1	1	1	WS_CM212_RELAY_FAIL	11/CM212	RELAYFAILURE	DPAC4IN214
126	CM213STATUS	1	2	2	WS_CM213_STATUS	CM21352A	CLOSED	DPAC4IN215
127	CM213TRIPCOILFAILURE	1	1	1	WS_CM213_TRIP_COIL_FAILURE	CM21352CSTCM	TRIPCOILFAILURE	DPAC4IN216
128	CM213RELAYFAIL	1	1	1	WS_CM213_RELAY_FAIL	11/CM213	RELAYFAILURE	DPAC4IN301
129	CM214STATUS	1	2	2	WS_CM214_STATUS	CM21452A	CLOSED	DPAC4IN302
130	CM214TRIPCOILFAILURE	1	1	1	WS_CM214_TRIP_COIL_FAILURE	CM21452CSTCM	TRIPCOILFAILURE	DPAC4IN303
131	CM214RELAYFAIL	1	1	1	WS_CM214_RELAY_FAIL	11/CM214	RELAYFAILURE	DPAC4IN304
132	CM215STATUS	1	2	2	WS_CM215_STATUS	CM21552A	CLOSED	DPAC4IN305

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Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITYESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
133	CM215RELAYLOSSOFFPOTENTIAL	1	1	1	WS_CM215_RELAY_LOSS_OF_POT	27X/CM215	LOSSOFFPOTS	DPAC4IN306
134	CM215RELAYFAIL	1	1	1	WS_CM215_RELAY_FAIL	11/CM215	RELAYFAILURE	DPAC4IN307
135	CM200STATUS	1	2	2	WS_CM200_STATUS	CM20052A	CLOSED	DPAC4IN308
136	13KVBUSTIELOCKOUTTRIP	1	2	2	WS_13KV_BUS_TIE_LOCKOUT_TRIP	86/CM200	LOCKOUTTRIP	DPAC4IN309
137	CM200TRIPCOILFAILURE	1	1	1	WS_CM200_TRIP_COIL_FAILURE	CM20052CSTCM	TRIPCOILFAILURE	DPAC4IN310
138	13KVBUSTIELOCKOUTTRIPCOILFAILURE	1	1	1	WS_13KV_BUS_TIE_LO_TRIP_COIL_FAIL	86/CM200TCM	TRIPCOILFAILURE	DPAC4IN311
139	CM200RELAYFAIL	1	1	1	WS_CM200_RELAY_FAIL	11/CM200	RELAYFAILURE	DPAC4IN312
140	SPARE	1	1	1	WS_SPARE_BI140			DPAC4IN313
141	SPARE	1	1	1	WS_SPARE_BI141			DPAC4IN314
142	SPARE	1	1	1	WS_SPARE_BI142			DPAC4IN315
143	SPARE	1	1	1	WS_SPARE_BI143			DPAC4IN316
144	SPARE	1	1	1	WS_SPARE_BI144			RTAC1IN101
145	SPARE	1	1	1	WS_SPARE_BI145			RTAC2IN101
146	SPARE	1	1	1	WS_SPARE_BI146			
147	SPARE	1	1	1	WS_SPARE_BI147			
148	SPARE	1	1	1	WS_SPARE_BI148			
149	SPARE	1	1	1	WS_SPARE_BI149			
150	SPARE	1	1	1	WS_SPARE_BI150			
151	SPARE	1	1	1	WS_SPARE_BI151			
152	SPARE	1	1	1	WS_SPARE_BI152			
153	SPARE	1	1	1	WS_SPARE_BI153			
154	SPARE	1	1	1	WS_SPARE_BI154			
155	SPARE	1	1	1	WS_SPARE_BI155			
156	SPARE	1	1	1	WS_SPARE_BI156			
157	SPARE	1	1	1	WS_SPARE_BI157			
158	SPARE	1	1	1	WS_SPARE_BI158			
159	SPARE	1	1	1	WS_SPARE_BI159			
160	SPARE	1	1	1	WS_SPARE_BI160			
161	SPARE	1	1	1	WS_SPARE_BI161			
162	SPARE	1	1	1	WS_SPARE_BI162			
163	SPARE	1	1	1	WS_SPARE_BI163			
164	SPARE	1	1	1	WS_SPARE_BI164			
165	SPARE	1	1	1	WS_SPARE_BI165			
166	SPARE	1	1	1	WS_SPARE_BI166			
167	SPARE	1	1	1	WS_SPARE_BI167			
168	RELAYENABLED	1	1	1	WS_87B_6B1_RELAY_ENABLED	87B/6B1-SEL-487B	RELAYENABLED	SEL-487B:EN(GREEN)
169	DIFFERENTIALTRIP	1	1	1	WS_87B_6B1_DIFFERENTIAL_TRIP	87B/6B1-SEL-487B	DIFFERENTIALRELAYTRIP	SEL-487B:T1_LED(RED)
170	BREAKERFAILURETRIP	1	1	1	WS_87B_6B1_BREAKER_FAILURE_TRIP	87B/6B1-SEL-487B	BREAKERFAILURETRIP	SEL-487B:T2_LED(RED)
171	APHASETRIP	1	1	1	WS_87B_6B1_A_PHASE_TRIP	87B/6B1-SEL-487B	APHASETRIP	SEL-487B:T3_LED(RED)
172	BPHASETRIP	1	1	1	WS_87B_6B1_B_PHASE_TRIP	87B/6B1-SEL-487B	BPHASETRIP	SEL-487B:T4_LED(RED)
173	CPHASETRIP	1	1	1	WS_87B_6B1_C_PHASE_TRIP	87B/6B1-SEL-487B	CPHASETRIP	SEL-487B:T5_LED(RED)
174	SPARE	1	1	1	WS_SPARE_BI174	87B/6B1-SEL-487B		SEL-487B:T6_LED(RED)
175	SPARE	1	1	1	WS_SPARE_BI175	87B/6B1-SEL-487B		SEL-487B:T7_LED(RED)
176	SPARE	1	1	1	WS_SPARE_BI176	87B/6B1-SEL-487B		SEL-487B:T8_LED(RED)
177	50INSTANTANEOUSTRIP	1	1	1	WS_87B_50_INST_TRIP	87B/6B1-SEL-487B	INSTANTANEOUSTRIP	SEL-487B:T9_LED(RED)
178	51TIMEOVERCURRENTTRIP	1	1	1	WS_87B_51_TIME_OVERCUR_TRIP	87B/6B1-SEL-487B	TIMEOVERCURRENTTRIP	SEL-487B:T10_LED(RED)
179	CTALARM	1	1	1	WS_87B_CT_ALARM	87B/6B1-SEL-487B	CTALARM	SEL-487B:T11_LED(RED)
180	87BLOCKED	1	1	1	WS_87B_87_BLOCKED	87B/6B1-SEL-487B	DIFFERENTIALBLOCKED	SEL-487B:T12_LED(RED)
181	SPARE	1	1	1	WS_SPARE_BI181	87B/6B1-SEL-487B		SEL-487B:T13_LED(RED)
182	SPARE	1	1	1	WS_SPARE_BI182	87B/6B1-SEL-487B		SEL-487B:T14_LED(RED)
183	SPARE	1	1	1	WS_SPARE_BI183	87B/6B1-SEL-487B		SEL-487B:T15_LED(RED)
184	PTALARM	1	1	1	WS_87B_6B1_PT_ALARM	87B/6B1-SEL-487B	PTALARM	SEL-487B:T16_LED(RED)
185	RELAYTESTMODE	1	1	1	WS_87B_6B1_RELAY_TEST_MODE	87B/6B1-SEL-487B	RELAYINTESTMODE	SEL-487B:TNS_SW(OUT107)

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CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
186	DCALARM	1	1	1	WS_87B_6B1_DC_ALARM	87B/6B1-SEL-487B	DCVOLTAGEPROBLEM	SEL-487B:PCT05QORPCT06QORPCT07QORPCT08Q(OUT205)
187	DIFFERENTIALPROTECTIONDISABLED	1	1	1	WS_87B_6B1_DIFF_PROT_DISABLED	87B/6B1-SEL-487B	DIFFERENTIALPROTECTIONDISABLED	SEL-487B:NOTDIFF_EN(OUT206)
188	BREAKERFAILUREPROTECTIONDISABLED	1	1	1	WS_87B_6B1_BRKR_FAIL_PROT_DISBLD	87B/6B1-SEL-487B	BREAKERFAILUREPROTECTIONDISABLED	SEL-487B:NOTBF_EN(OUT207)
189	OPENCTALARM	1	1	1	WS_87B_6B1_OPEN_CT_ALARM	87B/6B1-SEL-487B	OPENCT	SEL-487B:PCT09QORPCT10QORPCT11Q(OUT208)
190	SPARE	1	1	1	WS_SPARE BI190			
191	SPARE	1	1	1	WS_SPARE BI191			
192	SPARE	1	1	1	WS_SPARE BI192			
193	SPARE	1	1	1	WS_SPARE BI193			
194	RELAYENABLED	1	1	1	WS_11P_CM601_11P_CM601_RLY_EN	11P/CM601-SEL-311B	RELAYENABLED	SEL-311B:EN(GREEN)
195	RELAYTRIP	1	1	1	WS_11P_CM601_RELAY_TRIP	11P/CM601-SEL-311B	RELAYTRIP	SEL-311B:TRIP(RED)
196	TIME-DELAYEDTRIP	1	1	1	WS_11P_CM601_TIME_DELAYED_TRIP	11P/CM601-SEL-311B	TIME-DELAYEDTRIP	SEL-311B:TIME(RED)
197	DIRECTTRIP	1	1	1	WS_11P_CM601_DIRECT_TRIP	11P/CM601-SEL-311B	DIRECTTRIP	SEL-311B:DT(RED)
198	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_11P_CM601_SOTF_TRIP	11P/CM601-SEL-311B	SOTFTRIP	SEL-311B:SOTF(RED)
199	RECLOSERRESET	1	1	1	WS_11P_CM601_RECLOSER_RESET	11P/CM601-SEL-311B	RECLOSERRESET	SEL-311B:RS(RED)
200	RECLOSERCYCLING	1	1	1	WS_11P_CM601_RECLOSER_CYCLING	11P/CM601-SEL-311B	RECLOSERCYCLING	SEL-311B:CY(RED)
201	RECLOSERLOCKEDOUT	1	1	1	WS_11P_CM601_RECLOSER_LO	11P/CM601-SEL-311B	RECLOSERLOCKEDOUT	SEL-311B:LO(RED)
202	PHASEFAULT	1	1	1	WS_11P_CM601_PHASE_A_FAULT	11P/CM601-SEL-311B	PHASEFAULT	SEL-311B:A(RED)
203	PHASEFAULT	1	1	1	WS_11P_CM601_PHASE_B_FAULT	11P/CM601-SEL-311B	PHASEFAULT	SEL-311B:B(RED)
204	PHASECFault	1	1	1	WS_11P_CM601_PHASE_C_FAULT	11P/CM601-SEL-311B	PHASECFault	SEL-311B:C(RED)
205	GROUNDDistanceORRESIDUALGROUNDFAULT	1	1	1	WS_11P_CM601_GROUND_FAULT	11P/CM601-SEL-311B	GNDDistanceORRESIDUALGNDFault	SEL-311B:G(RED)
206	ZONE1FAULT	1	1	1	WS_11P_CM601_ZONE_1_FAULT	11P/CM601-SEL-311B	ZONE1FAULT	SEL-311B:1(RED)
207	ZONE2FAULT	1	1	1	WS_11P_CM601_ZONE_2_FAULT	11P/CM601-SEL-311B	ZONE2FAULT	SEL-311B:2(RED)
208	ZONE3FAULT	1	1	1	WS_11P_CM601_ZONE_3_FAULT	11P/CM601-SEL-311B	ZONE3FAULT	SEL-311B:3(RED)
209	TIMEOVERCURRENTTRIP	1	1	1	WS_11P_CM601_TIME_OC_TRIP	11P/CM601-SEL-311B	TIMEOVERCURRENTTRIP	SEL-311B:51(RED)
210	RELAYLOSSOFPOTENTIAL	1	1	1	WS_11P_CM601_RELAY_LOSS_OF_POT	11P/CM601-SEL-311B	LOSSOFPOTS	SEL-311B:SV4T(OUT107)
211	43LR/CM601STATUS	1	1	1	WS_11P_CM601_43LR_CM601_STATUS	11P/CM601-SEL-311B	REMOTECONTROL	SEL-311B:IN102
212	79CS/CM601STATUS	1	1	1	WS_11P_CM601_79CS_CM601_STATUS	11P/CM601-SEL-311B	RECLOSINGON	SEL-311B:IN103
213	SPARE	1	1	1	WS_SPARE BI213			
214	SPARE	1	1	1	WS_SPARE BI214			
215	SPARE	1	1	1	WS_SPARE BI215			
216	SPARE	1	1	1	WS_SPARE BI216			
217	RELAYENABLED	1	1	1	WS_11S_CM601_11S_CM601_RLY_EN	11S/CM601-SEL-311B	RELAYENABLED	SEL-311B:EN(GREEN)
218	RELAYTRIP	1	1	1	WS_11S_CM601_RELAY_TRIP	11S/CM601-SEL-311B	RELAYTRIP	SEL-311B:TRIP(RED)
219	TIME-DELAYEDTRIP	1	1	1	WS_11S_CM601_TIME_DELAYED_TRIP	11S/CM601-SEL-311B	TIME-DELAYEDTRIP	SEL-311B:TIME(RED)
220	DIRECTTRIP	1	1	1	WS_11S_CM601_DIRECT_TRIP	11S/CM601-SEL-311B	DIRECTTRIP	SEL-311B:DT(RED)
221	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_11S_CM601_SOTF_TRIP	11S/CM601-SEL-311B	SOTFTRIP	SEL-311B:SOTF(RED)
222	RECLOSERRESET	1	1	1	WS_11S_CM601_RECLOSER_RESET	11S/CM601-SEL-311B	RECLOSERRESET	SEL-311B:RS(RED)
223	RECLOSERCYCLING	1	1	1	WS_11S_CM601_RECLOSER_CYCLING	11S/CM601-SEL-311B	RECLOSERCYCLING	SEL-311B:CY(RED)
224	RECLOSERLOCKEDOUT	1	1	1	WS_11S_CM601_RECLOSER_LO	11S/CM601-SEL-311B	RECLOSERLOCKEDOUT	SEL-311B:LO(RED)
225	PHASEFAULT	1	1	1	WS_11S_CM601_PHASE_A_FAULT	11S/CM601-SEL-311B	PHASEFAULT	SEL-311B:A(RED)
226	PHASEBFault	1	1	1	WS_11S_CM601_PHASE_B_FAULT	11S/CM601-SEL-311B	PHASEBFault	SEL-311B:B(RED)
227	PHASECFault	1	1	1	WS_11S_CM601_PHASE_C_FAULT	11S/CM601-SEL-311B	PHASECFault	SEL-311B:C(RED)
228	GROUNDDistanceORRESIDUALGROUNDFAULT	1	1	1	WS_11S_CM601_GROUND_FAULT	11S/CM601-SEL-311B	GNDDistanceORRESIDUALGNDFault	SEL-311B:G(RED)
229	ZONE1FAULT	1	1	1	WS_11S_CM601_ZONE_1_FAULT	11S/CM601-SEL-311B	ZONE1FAULT	SEL-311B:1(RED)
230	ZONE2FAULT	1	1	1	WS_11S_CM601_ZONE_2_FAULT	11S/CM601-SEL-311B	ZONE2FAULT	SEL-311B:2(RED)
231	ZONE3FAULT	1	1	1	WS_11S_CM601_ZONE_3_FAULT	11S/CM601-SEL-311B	ZONE3FAULT	SEL-311B:3(RED)
232	TIMEOVERCURRENTTRIP	1	1	1	WS_11S_CM601_TIME_OC_TRIP	11S/CM601-SEL-311B	TIMEOVERCURRENTTRIP	SEL-311B:51(RED)
233	RELAYLOSSOFPOTENTIAL	1	1	1	WS_11S_CM601_RELAY_LOSS_OF_POT	11S/CM601-SEL-311B	LOSSOFPOTS	SEL-311B:SV4T(OUT107)
234	SPARE	1	1	1	WS_SPARE BI234			
235	SPARE	1	1	1	WS_SPARE BI235			
236	SPARE	1	1	1	WS_SPARE BI236			
237	SPARE	1	1	1	WS_SPARE BI237			
238	RELAYENABLED	1	1	1	WS_11P_CM602_11P_CM602_RLY_EN	11P/CM602-SEL-411LA	RELAYENABLED	SEL-311B:EN(GREEN)

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITYESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
239	RELAYTRIP	1	1	1	WS_11P_CM602_RELAY_TRIP	11P/CM602-SEL-411LA	RELAYTRIP	SEL-311B:TRIP(RED)
240	INSTANTANEOUS-TRIP	1	1	1	WS_11P_CM602_INST_TRIP	11P/CM602-SEL-411LA	INSTANTANEOUS-TRIP	SEL-411LA:INST(RED)
241	COMMTRIP	1	1	1	WS_11P_CM602_COMM_TRIP	11P/CM602-SEL-411LA	COMMTRIP	SEL-411LA:COMM(RED)
242	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_11P_CM602_SOTF_TRIP	11P/CM602-SEL-411LA	SOTFTRIP	SEL-411LA:SOTF(RED)
243	RECLOSERRESET	1	1	1	WS_11P_CM602_RECLOSER_RESET	11P/CM602-SEL-411LA	RECLOSERRESET	SEL-411LA:RS(RED)
244	RECLOSERCYCLING	1	1	1	WS_11P_CM602_RECLOSER_CYCLING	11P/CM602-SEL-411LA	RECLOSERCYCLING	SEL-411LA:CY(RED)
245	RECLOSERLOCKEDOUT	1	1	1	WS_11P_CM602_RECLOSER_LO	11P/CM602-SEL-411LA	RECLOSERLOCKEDOUT	SEL-411LA:LO(RED)
246	PHASEFAULT	1	1	1	WS_11P_CM602_PHASE_A_FAULT	11P/CM602-SEL-411LA	PHASEFAULT	SEL-411LA:A(RED)
247	PHASEBFAULT	1	1	1	WS_11P_CM602_PHASE_B_FAULT	11P/CM602-SEL-411LA	PHASEBFAULT	SEL-411LA:B(RED)
248	PHASECFAULT	1	1	1	WS_11P_CM602_PHASE_C_FAULT	11P/CM602-SEL-411LA	PHASECFAULT	SEL-411LA:C(RED)
249	GROUNDDISTANCEORRESIDUALGROUNDFAULT	1	1	1	WS_11P_CM602_GROUND_FAULT	11P/CM602-SEL-411LA	GNDDISTANCEORRESIDUALGNDFault	SEL-411LA:G(RED)
250	ZONE1FAULT	1	1	1	WS_11P_CM602_ZONE_1_FAULT	11P/CM602-SEL-411LA	ZONE1FAULT	SEL-411LA:1(RED)
251	ZONE2FAULT	1	1	1	WS_11P_CM602_ZONE_2_FAULT	11P/CM602-SEL-411LA	ZONE2FAULT	SEL-411LA:2(RED)
252	ZONE3FAULT	1	1	1	WS_11P_CM602_ZONE_3_FAULT	11P/CM602-SEL-411LA	ZONE3FAULT	SEL-411LA:3(RED)
253	TIMEOVERCURRENTTRIP	1	1	1	WS_11P_CM602_TIME_OC_TRIP	11P/CM602-SEL-411LA	TIMEOVERCURRENTTRIP	SEL-411LA:51(RED)
254	RELAYLOSSOFFPOTENTIAL	1	1	1	WS_11P_CM602_RELAY_LOSS_OF_POT	11P/CM602-SEL-411LA	LOSSOFFOTS	SEL-411LA:TBD
255	43LR/CM602STATUS	1	1	1	WS_11P_CM602_43LR_CM602_STATUS	11P/CM602-SEL-411LA	REMOTECONTROL	SEL-411LA:IN202
256	79CS/CM602STATUS	1	1	1	WS_11P_CM602_79CS_CM602_STATUS	11P/CM602-SEL-411LA	RECLOSINGON	SEL-411LA:IN203
257	SPARE	1	1	1	WS_SPARE BI257			
258	SPARE	1	1	1	WS_SPARE BI258			
259	SPARE	1	1	1	WS_SPARE BI259			
260	SPARE	1	1	1	WS_SPARE BI260			
261	RELAYENABLED	1	1	1	WS_11S_CM602_11S_CM602_RLY_EN	11S/CM602-SEL-411LA	RELAYENABLED	SEL-311B:EN(GREEN)
262	RELAYTRIP	1	1	1	WS_11S_CM602_RELAY_TRIP	11S/CM602-SEL-411LA	RELAYTRIP	SEL-311B:TRIP(RED)
263	INSTANTANEOUS-TRIP	1	1	1	WS_11S_CM602_INST_TRIP	11S/CM602-SEL-411LA	INSTANTANEOUS-TRIP	SEL-411LA:INST(RED)
264	COMMTRIP	1	1	1	WS_11S_CM602_COMM_TRIP	11S/CM602-SEL-411LA	COMMTRIP	SEL-411LA:COMM(RED)
265	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_11S_CM602_SOTF_TRIP	11S/CM602-SEL-411LA	SOTFTRIP	SEL-411LA:SOTF(RED)
266	RECLOSERRESET	1	1	1	WS_11S_CM602_RECLOSER_RESET	11S/CM602-SEL-411LA	RECLOSERRESET	SEL-411LA:RS(RED)
267	RECLOSERCYCLING	1	1	1	WS_11S_CM602_RECLOSER_CYCLING	11S/CM602-SEL-411LA	RECLOSERCYCLING	SEL-411LA:CY(RED)
268	RECLOSERLOCKEDOUT	1	1	1	WS_11S_CM602_RECLOSER_LO	11S/CM602-SEL-411LA	RECLOSERLOCKEDOUT	SEL-411LA:LO(RED)
269	PHASEFAULT	1	1	1	WS_11S_CM602_PHASE_A_FAULT	11S/CM602-SEL-411LA	PHASEFAULT	SEL-411LA:A(RED)
270	PHASEBFAULT	1	1	1	WS_11S_CM602_PHASE_B_FAULT	11S/CM602-SEL-411LA	PHASEBFAULT	SEL-411LA:B(RED)
271	PHASECFAULT	1	1	1	WS_11S_CM602_PHASE_C_FAULT	11S/CM602-SEL-411LA	PHASECFAULT	SEL-411LA:C(RED)
272	GROUNDDISTANCEORRESIDUALGROUNDFAULT	1	1	1	WS_11S_CM602_GROUND_FAULT	11S/CM602-SEL-411LA	GNDDISTANCEORRESIDUALGNDFault	SEL-411LA:G(RED)
273	ZONE1FAULT	1	1	1	WS_11S_CM602_ZONE_1_FAULT	11S/CM602-SEL-411LA	ZONE1FAULT	SEL-411LA:1(RED)
274	ZONE2FAULT	1	1	1	WS_11S_CM602_ZONE_2_FAULT	11S/CM602-SEL-411LA	ZONE2FAULT	SEL-411LA:2(RED)
275	ZONE3FAULT	1	1	1	WS_11S_CM602_ZONE_3_FAULT	11S/CM602-SEL-411LA	ZONE3FAULT	SEL-411LA:3(RED)
276	TIMEOVERCURRENTTRIP	1	1	1	WS_11S_CM602_TIME_OC_TRIP	11S/CM602-SEL-411LA	TIMEOVERCURRENTTRIP	SEL-411LA:51(RED)
277	RELAYLOSSOFFPOTENTIAL	1	1	1	WS_11S_CM602_RELAY_LOSS_OF_POT	11S/CM602-SEL-411LA	LOSSOFFOTS	SEL-411LA:TBD
278	SPARE	1	1	1	WS_SPARE BI278			
279	SPARE	1	1	1	WS_SPARE BI279			
280	SPARE	1	1	1	WS_SPARE BI280			
281	SPARE	1	1	1	WS_SPARE BI281			
282	RELAYENABLED	1	1	1	WS_11P_CM603_11P_CM603_RLY_EN	11P/CM603-SEL-311B	RELAYENABLED	SEL-311B:EN(GREEN)
283	RELAYTRIP	1	1	1	WS_11P_CM603_RELAY_TRIP	11P/CM603-SEL-311B	RELAYTRIP	SEL-311B:TRIP(RED)
284	TIME-DELAYEDTRIP	1	1	1	WS_11P_CM603_TIME_DELAYED_TRIP	11P/CM603-SEL-311B	TIME-DELAYEDTRIP	SEL-311B:TIME(RED)
285	DIRECTTRIP	1	1	1	WS_11P_CM603_DIRECT_TRIP	11P/CM603-SEL-311B	DIRECTTRIP	SEL-311B:DT(RED)
286	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_11P_CM603_SOTF_TRIP	11P/CM603-SEL-311B	SOTFTRIP	SEL-311B:SOTF(RED)
287	RECLOSERRESET	1	1	1	WS_11P_CM603_RECLOSER_RESET	11P/CM603-SEL-311B	RECLOSERRESET	SEL-311B:RS(RED)
288	RECLOSERCYCLING	1	1	1	WS_11P_CM603_RECLOSER_CYCLING	11P/CM603-SEL-311B	RECLOSERCYCLING	SEL-311B:CY(RED)
289	RECLOSERLOCKEDOUT	1	1	1	WS_11P_CM603_RECLOSER_LO	11P/CM603-SEL-311B	RECLOSERLOCKEDOUT	SEL-311B:LO(RED)
290	PHASEFAULT	1	1	1	WS_11P_CM603_PHASE_A_FAULT	11P/CM603-SEL-311B	PHASEFAULT	SEL-311B:A(RED)
291	PHASEBFAULT	1	1	1	WS_11P_CM603_PHASE_B_FAULT	11P/CM603-SEL-311B	PHASEBFAULT	SEL-311B:B(RED)

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
292	PHASECFAULT	1	1	1	WS_11P_CM603_PHASE_C_FAULT	11P/CM603-SEL-311B	PHASECFAULT	SEL-311B:C(RED)
293	GROUNDDISTANCEORRESIDUALGROUNDFAULT	1	1	1	WS_11P_CM603_GROUND_FAULT	11P/CM603-SEL-311B	GNDDISTANCEORRESIDUALGNDFAULT	SEL-311B:G(RED)
294	ZONE1FAULT	1	1	1	WS_11P_CM603_ZONE_1_FAULT	11P/CM603-SEL-311B	ZONE1FAULT	SEL-311B:1(RED)
295	ZONE2FAULT	1	1	1	WS_11P_CM603_ZONE_2_FAULT	11P/CM603-SEL-311B	ZONE2FAULT	SEL-311B:2(RED)
296	ZONE3FAULT	1	1	1	WS_11P_CM603_ZONE_3_FAULT	11P/CM603-SEL-311B	ZONE3FAULT	SEL-311B:3(RED)
297	TIMEOVERCURRENTTRIP	1	1	1	WS_11P_CM603_TIME_OC_TRIP	11P/CM603-SEL-311B	TIMEOVERCURRENTTRIP	SEL-311B:51(RED)
298	RELAYLOSSOFPOTENTIAL	1	1	1	WS_11P_CM603_RELAY_LOSS_OF_POT	11P/CM603-SEL-311B	LOSSOFPOTS	SEL-311B:SV4T(OUT107)
299	43LR/CM603STATUS	1	1	1	WS_11P_CM603_43LR_CM603_STATUS	11P/CM603-SEL-311B	REMOTECONTROL	SEL-311B:IN102
300	79CS/CM603STATUS	1	1	1	WS_11P_CM603_79CS_CM603_STATUS	11P/CM603-SEL-311B	RECLOSINGON	SEL-311B:IN103
301	SPARE	1	1	1	WS_SPARE BI301			
302	SPARE	1	1	1	WS_SPARE BI302			
303	SPARE	1	1	1	WS_SPARE BI303			
304	SPARE	1	1	1	WS_SPARE BI304			
305	RELAYENABLED	1	1	1	WS_11S_CM603_11S_CM603_RLY_EN	11S/CM603-SEL-311B	RELAYENABLED	SEL-311B:EN(GREEN)
306	RELAYTRIP	1	1	1	WS_11S_CM603_RELAY_TRIP	11S/CM603-SEL-311B	RELAYTRIP	SEL-311B:TRIP(RED)
307	TIME-DELAYEDTRIP	1	1	1	WS_11S_CM603_TIME_DELAYED_TRIP	11S/CM603-SEL-311B	TIME-DELAYEDTRIP	SEL-311B:TIME(RED)
308	DIRECTTRIP	1	1	1	WS_11S_CM603_DIRECT_TRIP	11S/CM603-SEL-311B	DIRECTTRIP	SEL-311B:DT(RED)
309	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_11S_CM603_SOTF_TRIP	11S/CM603-SEL-311B	SOTFTRIP	SEL-311B:SOTF(RED)
310	RECLOSERRESET	1	1	1	WS_11S_CM603_RECLOSER_RESET	11S/CM603-SEL-311B	RECLOSERRESET	SEL-311B:RS(RED)
311	RECLOSERCYCLING	1	1	1	WS_11S_CM603_RECLOSER_CYCLING	11S/CM603-SEL-311B	RECLOSERCYCLING	SEL-311B:CY(RED)
312	RECLOSERLOCKEDOUT	1	1	1	WS_11S_CM603_RECLOSER_LO	11S/CM603-SEL-311B	RECLOSERLOCKEDOUT	SEL-311B:LO(RED)
313	PHASEAFAULT	1	1	1	WS_11S_CM603_PHASE_A_FAULT	11S/CM603-SEL-311B	PHASEAFAULT	SEL-311B:A(RED)
314	PHASEBFAULT	1	1	1	WS_11S_CM603_PHASE_B_FAULT	11S/CM603-SEL-311B	PHASEBFAULT	SEL-311B:B(RED)
315	PHASECFAULT	1	1	1	WS_11S_CM603_PHASE_C_FAULT	11S/CM603-SEL-311B	PHASECFAULT	SEL-311B:C(RED)
316	GROUNDDISTANCEORRESIDUALGROUNDFAULT	1	1	1	WS_11S_CM603_GROUND_FAULT	11S/CM603-SEL-311B	GNDDISTANCEORRESIDUALGNDFAULT	SEL-311B:G(RED)
317	ZONE1FAULT	1	1	1	WS_11S_CM603_ZONE_1_FAULT	11S/CM603-SEL-311B	ZONE1FAULT	SEL-311B:1(RED)
318	ZONE2FAULT	1	1	1	WS_11S_CM603_ZONE_2_FAULT	11S/CM603-SEL-311B	ZONE2FAULT	SEL-311B:2(RED)
319	ZONE3FAULT	1	1	1	WS_11S_CM603_ZONE_3_FAULT	11S/CM603-SEL-311B	ZONE3FAULT	SEL-311B:3(RED)
320	TIMEOVERCURRENTTRIP	1	1	1	WS_11S_CM603_TIME_OC_TRIP	11S/CM603-SEL-311B	TIMEOVERCURRENTTRIP	SEL-311B:51(RED)
321	RELAYLOSSOFPOTENTIAL	1	1	1	WS_11S_CM603_RELAY_LOSS_OF_POT	11S/CM603-SEL-311B	LOSSOFPOTS	SEL-311B:SV4T(OUT107)
322	SPARE	1	1	1	WS_SPARE BI322			
323	SPARE	1	1	1	WS_SPARE BI323			
324	SPARE	1	1	1	WS_SPARE BI324			
325	SPARE	1	1	1	WS_SPARE BI325			
326	RELAYENABLED	1	1	1	WS_87T_CM6T1_RELAY_ENABLED	87T/CM6T1-SEL-587	RELAYENABLED	SEL-587:EN(GREEN)
327	DIFFERENTIALTRIP	1	1	1	WS_87T_CM6T1_DIFFERENTIAL_TRIP	87T/CM6T1-SEL-587	DIFFERENTIALTRIP	SEL-587:87(RED)
328	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_87T_CM6T1_INST_OC_TRIP	87T/CM6T1-SEL-587	INSTANTANEOUSOVERCURRENTTRIP	SEL-587:50(RED)
329	TIMEOVERCURRENTTRIP	1	1	1	WS_87T_CM6T1_TIME_OC_TRIP	87T/CM6T1-SEL-587	TIMEOVERCURRENTTRIP	SEL-587:51(RED)
330	PHASEAFAULT	1	1	1	WS_87T_CM6T1_PHASE_A_FAULT	87T/CM6T1-SEL-587	PHASEAFAULT	SEL-587:A(RED)
331	PHASEBFAULT	1	1	1	WS_87T_CM6T1_PHASE_B_FAULT	87T/CM6T1-SEL-587	PHASEBFAULT	SEL-587:B(RED)
332	PHASECFAULT	1	1	1	WS_87T_CM6T1_PHASE_C_FAULT	87T/CM6T1-SEL-587	PHASECFAULT	SEL-587:C(RED)
333	RESIDUALGROUNDFAULT	1	1	1	WS_87T_CM6T1_GROUND_FAULT	87T/CM6T1-SEL-587	RESIDUALGROUNDFAULT	SEL-587:N(RED)
334	SPARE	1	1	1	WS_SPARE BI334			
335	SPARE	1	1	1	WS_SPARE BI335			
336	SPARE	1	1	1	WS_SPARE BI336			
337	SPARE	1	1	1	WS_SPARE BI337			
338	RELAYENABLED	1	1	1	WS_51_CM610_RELAY_ENABLED	51/CM610-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)
339	RELAYTRIP	1	1	1	WS_51_CM610_RELAY_TRIP	51/CM610-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
340	INSTANTANEOUSTRIP	1	1	1	WS_51_CM610_INST_TRIP	51/CM610-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
341	COMMTRIP	1	1	1	WS_51_CM610_COMM_TRIP	51/CM610-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
342	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM610_SOTF_TRIP	51/CM610-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
343	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM610_INST_OC_TRIP	51/CM610-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
344	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM610_TIME_OC_TRIP	51/CM610-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)

WESTSIDESUBSTATION								
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0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITYESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
345	FREQUENCYTRIP	1	1	1	WS_51_CM610_FREQUENCY_TRIP	51/CM610-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)
346	PHASEFAULT	1	1	1	WS_51_CM610_PHASE_A_FAULT	51/CM610-SEL-351A	PHASEFAULT	SEL-351A:A(RED)
347	PHASEBFAULT	1	1	1	WS_51_CM610_PHASE_B_FAULT	51/CM610-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
348	PHASECFault	1	1	1	WS_51_CM610_PHASE_C_FAULT	51/CM610-SEL-351A	PHASECFault	SEL-351A:C(RED)
349	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM610_GROUND_FAULT	51/CM610-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
350	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM610_NEUTRAL_FAULT	51/CM610-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
351	RECLOSERRESET	1	1	1	WS_51_CM610_RECLOSER_RESET	51/CM610-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
352	RECLOSERCYCLING	1	1	1	WS_51_CM610_RECLOSER_CYCLING	51/CM610-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
353	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM610_RECLOSER_LO	51/CM610-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)
354	RELAYLOSSOFPOTENTIAL	1	1	1	WS_51_CM610_RELAY_LOSS_OF_POT	51/CM610-SEL-351A	LOSSOFPOTS	SEL-351A:SV5T
355	43LR/CM610STATUS	1	1	1	WS_51_CM610_43LR_CM610_STATUS	51/CM610-SEL-351A	REMOTECONTROL	SEL-351A:IN102
356	SPARE	1	1	1	WS_SPARE BI356			
357	SPARE	1	1	1	WS_SPARE BI357			
358	SPARE	1	1	1	WS_SPARE BI358			
359	SPARE	1	1	1	WS_SPARE BI359			
360	RELAYENABLED	1	1	1	WS_51_CM200_RELAY_ENABLED	11/CM200-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)
361	RELAYTRIP	1	1	1	WS_51_CM200_RELAY_TRIP	11/CM200-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
362	INSTANTANEOUSTRIP	1	1	1	WS_51_CM200_INST_TRIP	11/CM200-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
363	COMMTRIP	1	1	1	WS_51_CM200_COMM_TRIP	11/CM200-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
364	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM200_SOTF_TRIP	11/CM200-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
365	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM200_INST_OC_TRIP	11/CM200-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
366	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM200_TIME_OC_TRIP	11/CM200-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)
367	FREQUENCYTRIP	1	1	1	WS_51_CM200_FREQUENCY_TRIP	11/CM200-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)
368	PHASEFAULT	1	1	1	WS_51_CM200_PHASE_A_FAULT	11/CM200-SEL-351A	PHASEFAULT	SEL-351A:A(RED)
369	PHASEBFAULT	1	1	1	WS_51_CM200_PHASE_B_FAULT	11/CM200-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
370	PHASECFault	1	1	1	WS_51_CM200_PHASE_C_FAULT	11/CM200-SEL-351A	PHASECFault	SEL-351A:C(RED)
371	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM200_GROUND_FAULT	11/CM200-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
372	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM200_NEUTRAL_FAULT	11/CM200-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
373	RECLOSERRESET	1	1	1	WS_51_CM200_RECLOSER_RESET	11/CM200-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
374	RECLOSERCYCLING	1	1	1	WS_51_CM200_RECLOSER_CYCLING	11/CM200-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
375	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM200_RECLOSER_LO	11/CM200-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)
376	RELAYLOSSOFPOTENTIAL	1	1	1	WS_51_CM200_RELAY_LOSS_OF_POT	11/CM200-SEL-351A	LOSSOFPOTS	SEL-351A:SV7T
377	43LR/CM200STATUS	1	1	1	WS_51_CM200_43LR_CM200_STATUS	11/CM200-SEL-351A	REMOTECONTROL	SEL-351A:IN102
378	SPARE	1	1	1	WS_SPARE BI378			
379	SPARE	1	1	1	WS_SPARE BI379			
380	SPARE	1	1	1	WS_SPARE BI380			
381	SPARE	1	1	1	WS_SPARE BI381			
382	RELAYENABLED	1	1	1	WS_51_CM210_RELAY_ENABLED	11/CM210-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)
383	RELAYTRIP	1	1	1	WS_51_CM210_RELAY_TRIP	11/CM210-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
384	INSTANTANEOUSTRIP	1	1	1	WS_51_CM210_INST_TRIP	11/CM210-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
385	COMMTRIP	1	1	1	WS_51_CM210_COMM_TRIP	11/CM210-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
386	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM210_SOTF_TRIP	11/CM210-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
387	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM210_INST_OC_TRIP	11/CM210-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
388	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM210_TIME_OC_TRIP	11/CM210-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)
389	FREQUENCYTRIP	1	1	1	WS_51_CM210_FREQUENCY_TRIP	11/CM210-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)
390	PHASEFAULT	1	1	1	WS_51_CM210_PHASE_A_FAULT	11/CM210-SEL-351A	PHASEFAULT	SEL-351A:A(RED)
391	PHASEBFAULT	1	1	1	WS_51_CM210_PHASE_B_FAULT	11/CM210-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
392	PHASECFault	1	1	1	WS_51_CM210_PHASE_C_FAULT	11/CM210-SEL-351A	PHASECFault	SEL-351A:C(RED)
393	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM210_GROUND_FAULT	11/CM210-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
394	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM210_NEUTRAL_FAULT	11/CM210-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
395	RECLOSERRESET	1	1	1	WS_51_CM210_RECLOSER_RESET	11/CM210-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
396	RECLOSERCYCLING	1	1	1	WS_51_CM210_RECLOSER_CYCLING	11/CM210-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
397	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM210_RECLOSER_LO	11/CM210-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
398	RELAYLOSSOFFPOTENTIAL	1	1	1	WS_51_CM210_RELAY_LOSS_OF_POT	11/CM210-SEL-351A	LOSSOFFPOTS	SEL-351A:SV7T
399	43LR/CM210STATUS	1	1	1	WS_51_CM210_43LR_CM210_STATUS	11/CM210-SEL-351A	REMOTECONTROL	SEL-351A:IN102
400	SPARE	1	1	1	WS_SPARE BI400			
401	SPARE	1	1	1	WS_SPARE BI401			
402	SPARE	1	1	1	WS_SPARE BI402			
403	SPARE	1	1	1	WS_SPARE BI403			
404	RELAYENABLED	1	1	1	WS_51_CM211_RELAY_ENABLED	11/CM211-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)
405	RELAYTRIP	1	1	1	WS_51_CM211_RELAY_TRIP	11/CM211-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
406	INSTANTANEOUSTRIP	1	1	1	WS_51_CM211_INST_TRIP	11/CM211-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
407	COMMTRIP	1	1	1	WS_51_CM211_COMM_TRIP	11/CM211-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
408	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM211_SOTF_TRIP	11/CM211-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
409	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM211_INST_OC_TRIP	11/CM211-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
410	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM211_TIME_OC_TRIP	11/CM211-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)
411	FREQUENCYTRIP	1	1	1	WS_51_CM211_FREQUENCY_TRIP	11/CM211-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)
412	PHASEAFAULT	1	1	1	WS_51_CM211_PHASE_A_FAULT	11/CM211-SEL-351A	PHASEAFAULT	SEL-351A:A(RED)
413	PHASEBFAULT	1	1	1	WS_51_CM211_PHASE_B_FAULT	11/CM211-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
414	PHASECFAULT	1	1	1	WS_51_CM211_PHASE_C_FAULT	11/CM211-SEL-351A	PHASECFAULT	SEL-351A:C(RED)
415	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM211_GROUND_FAULT	11/CM211-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
416	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM211_NEUTRAL_FAULT	11/CM211-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
417	RECLOSERRESET	1	1	1	WS_51_CM211_RECLOSER RESET	11/CM211-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
418	RECLOSERCYCLING	1	1	1	WS_51_CM211_RECLOSER CYCLING	11/CM211-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
419	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM211_RECLOSER LO	11/CM211-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)
420	RELAYLOSSOFFPOTENTIAL	1	1	1	WS_51_CM211_RELAY_LOSS_OF_POT	11/CM211-SEL-351A	LOSSOFFPOTS	SEL-351A:SV7T
421	43LR/CM211STATUS	1	1	1	WS_51_CM211_43LR_CM211_STATUS	11/CM211-SEL-351A	REMOTECONTROL	SEL-351A:IN102
422	79CS/CM211STATUS	1	1	1	WS_51_79CS_CM211_STATUS	11/CM211-SEL-351A	RECLOSINGON	SEL-351A:IN103
423	SPARE	1	1	1	WS_SPARE BI423			
424	SPARE	1	1	1	WS_SPARE BI424			
425	SPARE	1	1	1	WS_SPARE BI425			
426	SPARE	1	1	1	WS_SPARE BI426			
427	RELAYENABLED	1	1	1	WS_51_CM212_RELAY_ENABLED	11/CM212-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)
428	RELAYTRIP	1	1	1	WS_51_CM212_RELAY_TRIP	11/CM212-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
429	INSTANTANEOUSTRIP	1	1	1	WS_51_CM212_INST_TRIP	11/CM212-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
430	COMMTRIP	1	1	1	WS_51_CM212_COMM_TRIP	11/CM212-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
431	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM212_SOTF_TRIP	11/CM212-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
432	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM212_INST_OC_TRIP	11/CM212-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
433	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM212_TIME_OC_TRIP	11/CM212-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)
434	FREQUENCYTRIP	1	1	1	WS_51_CM212_FREQUENCY_TRIP	11/CM212-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)
435	PHASEAFAULT	1	1	1	WS_51_CM212_PHASE_A_FAULT	11/CM212-SEL-351A	PHASEAFAULT	SEL-351A:A(RED)
436	PHASEBFAULT	1	1	1	WS_51_CM212_PHASE_B_FAULT	11/CM212-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
437	PHASECFAULT	1	1	1	WS_51_CM212_PHASE_C_FAULT	11/CM212-SEL-351A	PHASECFAULT	SEL-351A:C(RED)
438	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM212_GROUND_FAULT	11/CM212-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
439	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM212_NEUTRAL_FAULT	11/CM212-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
440	RECLOSERRESET	1	1	1	WS_51_CM212_RECLOSER RESET	11/CM212-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
441	RECLOSERCYCLING	1	1	1	WS_51_CM212_RECLOSER CYCLING	11/CM212-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
442	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM212_RECLOSER LO	11/CM212-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)
443	RELAYLOSSOFFPOTENTIAL	1	1	1	WS_51_CM212_RELAY_LOSS_OF_POT	11/CM212-SEL-351A	LOSSOFFPOTS	SEL-351A:SV7T
444	43LR/CM212STATUS	1	1	1	WS_51_CM212_43LR_CM212_STATUS	11/CM212-SEL-351A	REMOTECONTROL	SEL-351A:IN102
445	79CS/CM212STATUS	1	1	1	WS_51_79CS_CM212_STATUS	11/CM212-SEL-351A	RECLOSINGON	SEL-351A:IN103
446	SPARE	1	1	1	WS_SPARE BI446			
447	SPARE	1	1	1	WS_SPARE BI447			
448	SPARE	1	1	1	WS_SPARE BI448			
449	SPARE	1	1	1	WS_SPARE BI449			
450	RELAYENABLED	1	1	1	WS_51_CM213_RELAY_ENABLED	11/CM213-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
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4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITYESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
451	RELAYTRIP	1	1	1	WS_51_CM213_RELAY_TRIP	11/CM213-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
452	INSTANTANEOUSTRIP	1	1	1	WS_51_CM213_INST_TRIP	11/CM213-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
453	COMMTRIP	1	1	1	WS_51_CM213_COMM_TRIP	11/CM213-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
454	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM213_SOTF_TRIP	11/CM213-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
455	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM213_INST_OC_TRIP	11/CM213-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
456	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM213_TIME_OC_TRIP	11/CM213-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)
457	FREQUENCYTRIP	1	1	1	WS_51_CM213_FREQUENCY_TRIP	11/CM213-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)
458	PHASEFAULT	1	1	1	WS_51_CM213_PHASE_A_FAULT	11/CM213-SEL-351A	PHASEFAULT	SEL-351A:A(RED)
459	PHASEBFAULT	1	1	1	WS_51_CM213_PHASE_B_FAULT	11/CM213-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
460	PHASECFAULT	1	1	1	WS_51_CM213_PHASE_C_FAULT	11/CM213-SEL-351A	PHASECFAULT	SEL-351A:C(RED)
461	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM213_GROUND_FAULT	11/CM213-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
462	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM213_NEUTRAL_FAULT	11/CM213-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
463	RECLOSERRESET	1	1	1	WS_51_CM213_RECLOSER_RESET	11/CM213-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
464	RECLOSERCYCLING	1	1	1	WS_51_CM213_RECLOSER_CYCLING	11/CM213-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
465	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM213_RECLOSER_LO	11/CM213-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)
466	RELAYLOSSOFFPOTENTIAL	1	1	1	WS_51_CM213_RELAY_LOSS_OF_POT	11/CM213-SEL-351A	LOSSOFFPOTS	SEL-351A:SV7T
467	43LR/CM213STATUS	1	1	1	WS_51_CM213_43LR_CM213_STATUS	11/CM213-SEL-351A	REMOTECONTROL	SEL-351A:IN102
468	79CS/CM213STATUS	1	1	1	WS_51_79CS_CM213_STATUS	11/CM213-SEL-351A	RECLOSINGON	SEL-351A:IN103
469	SPARE	1	1	1	WS_SPARE BI469			
470	SPARE	1	1	1	WS_SPARE BI470			
471	SPARE	1	1	1	WS_SPARE BI471			
472	SPARE	1	1	1	WS_SPARE BI472			
473	RELAYENABLED	1	1	1	WS_51_CM214_RELAY_ENABLED	11/CM214-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)
474	RELAYTRIP	1	1	1	WS_51_CM214_RELAY_TRIP	11/CM214-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
475	INSTANTANEOUSTRIP	1	1	1	WS_51_CM214_INST_TRIP	11/CM214-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
476	COMMTRIP	1	1	1	WS_51_CM214_COMM_TRIP	11/CM214-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
477	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM214_SOTF_TRIP	11/CM214-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
478	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM214_INST_OC_TRIP	11/CM214-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
479	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM214_TIME_OC_TRIP	11/CM214-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)
480	FREQUENCYTRIP	1	1	1	WS_51_CM214_FREQUENCY_TRIP	11/CM214-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)
481	PHASEFAULT	1	1	1	WS_51_CM214_PHASE_A_FAULT	11/CM214-SEL-351A	PHASEFAULT	SEL-351A:A(RED)
482	PHASEBFAULT	1	1	1	WS_51_CM214_PHASE_B_FAULT	11/CM214-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
483	PHASECFAULT	1	1	1	WS_51_CM214_PHASE_C_FAULT	11/CM214-SEL-351A	PHASECFAULT	SEL-351A:C(RED)
484	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM214_GROUND_FAULT	11/CM214-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
485	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM214_NEUTRAL_FAULT	11/CM214-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
486	RECLOSERRESET	1	1	1	WS_51_CM214_RECLOSER_RESET	11/CM214-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
487	RECLOSERCYCLING	1	1	1	WS_51_CM214_RECLOSER_CYCLING	11/CM214-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
488	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM214_RECLOSER_LO	11/CM214-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)
489	RELAYLOSSOFFPOTENTIAL	1	1	1	WS_51_CM214_RELAY_LOSS_OF_POT	11/CM214-SEL-351A	LOSSOFFPOTS	SEL-351A:SV7T
490	43LR/CM214STATUS	1	1	1	WS_51_CM214_43LR_CM214_STATUS	11/CM214-SEL-351A	REMOTECONTROL	SEL-351A:IN102
491	79CS/CM214STATUS	1	1	1	WS_51_79CS_CM214_STATUS	11/CM214-SEL-351A	RECLOSINGON	SEL-351A:IN103
492	SPARE	1	1	1	WS_SPARE BI492			
493	SPARE	1	1	1	WS_SPARE BI493			
494	SPARE	1	1	1	WS_SPARE BI494			
495	SPARE	1	1	1	WS_SPARE BI495			
496	RELAYENABLED	1	1	1	WS_51_CM215_RELAY_ENABLED	11/CM215-SEL-351A	RELAYENABLED	SEL-351A:EN(GREEN)
497	RELAYTRIP	1	1	1	WS_51_CM215_RELAY_TRIP	11/CM215-SEL-351A	RELAYTRIP	SEL-351A:TRIP(RED)
498	INSTANTANEOUSTRIP	1	1	1	WS_51_CM215_INST_TRIP	11/CM215-SEL-351A	INSTANTANEOUSTRIP	SEL-351A:INST(RED)
499	COMMTRIP	1	1	1	WS_51_CM215_COMM_TRIP	11/CM215-SEL-351A	COMMTRIP	SEL-351A:COMM(RED)
500	SWITCH-ONTO-FAULTTRIP	1	1	1	WS_51_CM215_SOTF_TRIP	11/CM215-SEL-351A	SWITCH-ONTO-FAULTTRIP	SEL-351A:SOTF(RED)
501	INSTANTANEOUSOVERCURRENTTRIP	1	1	1	WS_51_CM215_INST_OC_TRIP	11/CM215-SEL-351A	INSTANTANEOUSOVERCURRENTTRIP	SEL-351A:50(RED)
502	TIMEOVERCURRENTTRIP	1	1	1	WS_51_CM215_TIME_OC_TRIP	11/CM215-SEL-351A	TIMEOVERCURRENTTRIP	SEL-351A:51(RED)
503	FREQUENCYTRIP	1	1	1	WS_51_CM215_FREQUENCY_TRIP	11/CM215-SEL-351A	FREQUENCYTRIP	SEL-351A:81(RED)

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITIESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
504	PHASEAFAULT	1	1	1	WS_51_CM215_PHASE_A_FAULT	11/CM215-SEL-351A	PHASEAFAULT	SEL-351A:A(RED)
505	PHASEBFAULT	1	1	1	WS_51_CM215_PHASE_B_FAULT	11/CM215-SEL-351A	PHASEBFAULT	SEL-351A:B(RED)
506	PHASECFAULT	1	1	1	WS_51_CM215_PHASE_C_FAULT	11/CM215-SEL-351A	PHASECFAULT	SEL-351A:C(RED)
507	RESIDUALGROUNDFAULT	1	1	1	WS_51_CM215_GROUND_FAULT	11/CM215-SEL-351A	RESIDUALGROUNDFAULT	SEL-351A:G(RED)
508	NEUTRALGROUNDFAULT	1	1	1	WS_51_CM215_NEUTRAL_FAULT	11/CM215-SEL-351A	NEUTRALGROUNDFAULT	SEL-351A:N(RED)
509	RECLOSERRESET	1	1	1	WS_51_CM215_RECLOSER_RESET	11/CM215-SEL-351A	RECLOSERRESET	SEL-351A:RS(RED)
510	RECLOSERCYCLING	1	1	1	WS_51_CM215_RECLOSER_CYCLING	11/CM215-SEL-351A	RECLOSERCYCLING	SEL-351A:CY(RED)
511	RECLOSERLOCKEDOUT	1	1	1	WS_51_CM215_RECLOSER_LO	11/CM215-SEL-351A	RECLOSERLOCKEDOUT	SEL-351A:LO(RED)
512	43LR/CM215STATUS	1	1	1	WS_51_CM215_43LR_CM215_STATUS	11/CM215-SEL-351A	REMOTECONTROL	SEL-351A:IN102
513	79CS/CM215STATUS	1	1	1	WS_51_79CS_CM215_STATUS	11/CM215-SEL-351A	RECLOSINGON	SEL-351A:IN103
514	SPARE	1	1	1	WS_SPARE_BI514			
515	SPARE	1	1	1	WS_SPARE_BI515			
516	SPARE	1	1	1	WS_SPARE_BI516			
517	SPARE	1	1	1	WS_SPARE_BI517			
518	SPARE	1	1	1	WS_SPARE_BI518			
519	SPARE	1	1	1	WS_SPARE_BI519			
520	SPARE	1	1	1	WS_SPARE_BI520			
521	SPARE	1	1	1	WS_SPARE_BI521			
522	SPARE	1	1	1	WS_SPARE_BI522			
523	SPARE	1	1	1	WS_SPARE_BI523			
524	SPARE	1	1	1	WS_SPARE_BI524			
525	CM601MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM601_COMM	MFM/CM601-M571	COMMMONITOR	1=OFFLINE
526	CM602MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM602_COMM	MFM/CM602-M571	COMMMONITOR	1=OFFLINE
527	CM603MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM603_COMM	MFM/CM603-M571	COMMMONITOR	1=OFFLINE
528	CM610MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM610_COMM	MFM/CM610-M571	COMMMONITOR	1=OFFLINE
529	CM200MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM200_COMM	MFM/CM200-M571	COMMMONITOR	1=OFFLINE
530	CM210MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM210_COMM	MFM/CM210-M571	COMMMONITOR	1=OFFLINE
531	CM211MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM211_COMM	MFM/CM211-M571	COMMMONITOR	1=OFFLINE
532	CM212MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM212_COMM	MFM/CM212-M571	COMMMONITOR	1=OFFLINE
533	CM213MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM213_COMM	MFM/CM213-M571	COMMMONITOR	1=OFFLINE
534	CM214MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM214_COMM	MFM/CM214-M571	COMMMONITOR	1=OFFLINE
535	CM215MFM<>RTAC1COMMSTATUS	1	1	1	WS_MFM_CM215_COMM	MFM/CM215-M571	COMMMONITOR	1=OFFLINE
536	CM60111P<>RTAC1COMMSTATUS	1	1	1	WS_CM601_11P_COMM	CM60111PSEL-311B	COMMMONITOR	1=OFFLINE
537	CM60111S<>RTAC1COMMSTATUS	1	1	1	WS_CM601_11S_COMM	CM60111SSEL-311B	COMMMONITOR	1=OFFLINE
538	CM60211P<>RTAC1COMMSTATUS	1	1	1	WS_CM602_11P_COMM	CM60211PSEL-411LA	COMMMONITOR	1=OFFLINE
539	CM60211S<>RTAC1COMMSTATUS	1	1	1	WS_CM602_11S_COMM	CM60211SSEL-411LA	COMMMONITOR	1=OFFLINE
540	CM60311P<>RTAC1COMMSTATUS	1	1	1	WS_CM603_11P_COMM	CM60311PSEL-311B	COMMMONITOR	1=OFFLINE
541	CM60311S<>RTAC1COMMSTATUS	1	1	1	WS_CM603_11S_COMM	CM60311SSEL-311B	COMMMONITOR	1=OFFLINE
542	87B/6B1<>RTAC1COMMSTATUS	1	1	1	WS_87B_6B1_COMM	87B/6B1-SEL-487B	COMMMONITOR	1=OFFLINE
543	87T/CM6T1<>RTAC1COMMSTATUS	1	1	1	WS_87T_6T1_COMM	87T/CM6T1-SEL-587	COMMMONITOR	1=OFFLINE
544	51/CM610<>RTAC1COMMSTATUS	1	1	1	WS_51_CM610_COMM	51/CM610-SEL-351A	COMMMONITOR	1=OFFLINE
545	11/CM200<>RTAC2COMMSTATUS	1	1	1	WS_11_CM200_COMM	11/CM200-SEL-351A	COMMMONITOR	1=OFFLINE
546	11/CM210<>RTAC2COMMSTATUS	1	1	1	WS_11_CM210_COMM	11/CM210-SEL-351A	COMMMONITOR	1=OFFLINE
547	11/CM211<>RTAC2COMMSTATUS	1	1	1	WS_11_CM211_COMM	11/CM211-SEL-351A	COMMMONITOR	1=OFFLINE
548	11/CM212<>RTAC2COMMSTATUS	1	1	1	WS_11_CM212_COMM	11/CM212-SEL-351A	COMMMONITOR	1=OFFLINE
549	11/CM213<>RTAC2COMMSTATUS	1	1	1	WS_11_CM213_COMM	11/CM213-SEL-351A	COMMMONITOR	1=OFFLINE
550	11/CM214<>RTAC2COMMSTATUS	1	1	1	WS_11_CM214_COMM	11/CM214-SEL-351A	COMMMONITOR	1=OFFLINE
551	11/CM215<>RTAC2COMMSTATUS	1	1	1	WS_11_CM215_COMM	11/CM215-SEL-351A	COMMMONITOR	1=OFFLINE
552	DPAC1<>RTAC1COMMSTATUS	1	1	1	WS_DPAC1_COMM	DPAC1-SEL-2440	COMMMONITOR	1=OFFLINE
553	DPAC2<>RTAC1COMMSTATUS	1	1	1	WS_DPAC2_COMM	DPAC2-SEL-2440	COMMMONITOR	1=OFFLINE
554	DPAC3<>RTAC1COMMSTATUS	1	1	1	WS_DPAC3_COMM	DPAC3-SEL-2440	COMMMONITOR	1=OFFLINE
555	DPAC4<>RTAC2COMMSTATUS	1	1	1	WS_DPAC4_COMM	DPAC4-SEL-2440	COMMMONITOR	1=OFFLINE
556	RTAC2<>RTAC1COMMSTATUS	1	1	1	WS_RTAC2_COMM	RTAC2-SEL-3530	COMMMONITOR	1=OFFLINE

WESTSIDESUBSTATION								
Revision	Description						By	Date
0	initialpointslistfordiscussion						RDK-P&E	5/29/2017
1	addedtagalias.andDNPclass/var&scaling						TGE-P&E	9/5/2017
2	Touchup following rtac programming						TGE-P&E	3/6/2018
3	ADD 69KV FAULT INFORMATION						RDK-P&E	7/11/2018
4	REPLACE EAST IOWA LINE RELAYS						RDK-P&E	8/15/2024
CommunicationProtocol:DNP3.0								
SubstationRTU:SEL-RTAC								
Designation	Party							
Master:	INDIANOLAMUNICIPALUTILITYESSCADAMASTER	DNP						
Slave:	RS232)	OBJECT	CLASS	VARIATION	TAGALIAS	SOURCE	UNITS	RAWCOUNT=ENGUNITS
	LINE DIFF TRIP LED	1	1	1	WS_CM602_11P_87L LED	11P/CM602-SEL-411LA	LINE DIFFERENTIAL TRIP LED	SEL-411LA:87L(RED)
	LINE DIFF LOST LED	1	1	1	WS_CM602_11P_87L LOST LED	11P/CM602-SEL-411LA	LOSS OF LINE DIFF LED	SEL-411LA:87L LOST(RED)
	LINE DIFF ALARM LED	1	1	1	WS_CM602_11P_87L ALM LED	11P/CM602-SEL-411LA	LINE DIFF ALARM LED	SEL-411LA:87L ALARM(RED)
	SPARE LED	1	1	1	WS_CM602_11P_SPARE LED	11P/CM602-SEL-411LA	SPARE LED	SEL-411LA:SPARE(RED)
	25 SYNC LED	1	1	1	WS_CM602_11P_25 SYNC LED	11P/CM602-SEL-411LA	SYNC LED	SEL-411LA:SYNC(RED)
	50 LED	1	1	1	WS_CM602_11P_50 LED	11P/CM602-SEL-411LA	50 LED	SEL-411LA:50(RED)
	51 LED	1	1	1	WS_CM602_11P_51 LED	11P/CM602-SEL-411LA	51 LED	SEL-411LA:51(RED)
	LOP LED	1	1	1	WS_CM602_11P_LOP LED	11P/CM602-SEL-411LA	LOSS OF POTENTIAL LED	SEL-411LA:LOP(RED)
	IRIG LOCK LED	1	1	1	WS_CM602_11P_IRIG LOCK LED	11P/CM602-SEL-411LA	IRIG LOCK LED	SEL-411LA:IRIG LOCK(RED)
	LINE DIFF TRIP LED	1	1	1	WS_CM602_11S_87L LED	11S/CM602-SEL-411LA	LINE DIFFERENTIAL TRIP LED	SEL-411LA:87L(RED)
	LINE DIFF LOST LED	1	1	1	WS_CM602_11S_87L LOST LED	11S/CM602-SEL-411LA	LOSS OF LINE DIFF LED	SEL-411LA:87L LOST(RED)
	LINE DIFF ALARM LED	1	1	1	WS_CM602_11S_87L ALM LED	11S/CM602-SEL-411LA	LINE DIFF ALARM LED	SEL-411LA:87L ALARM(RED)
	SPARE LED	1	1	1	WS_CM602_11S_SPARE LED	11S/CM602-SEL-411LA	SPARE LED	SEL-411LA:SPARE(RED)
	25 SYNC LED	1	1	1	WS_CM602_11S_25 SYNC LED	11S/CM602-SEL-411LA	SYNC LED	SEL-411LA:SYNC(RED)
	50 LED	1	1	1	WS_CM602_11S_50 LED	11S/CM602-SEL-411LA	50 LED	SEL-411LA:50(RED)
	51 LED	1	1	1	WS_CM602_11S_51 LED	11S/CM602-SEL-411LA	51 LED	SEL-411LA:51(RED)
	LOP LED	1	1	1	WS_CM602_11S_LOP LED	11S/CM602-SEL-411LA	LOSS OF POTENTIAL LED	SEL-411LA:LOP(RED)
	IRIG LOCK LED	1	1	1	WS_CM602_11S_IRIG LOCK LED	11S/CM602-SEL-411LA	IRIG LOCK LED	SEL-411LA:IRIG LOCK(RED)
COUNTERINPUTS								
DNPADDR.	POINT					SOURCE	UNIT	NOTE
0	NONE							
1								
2								
3								
4								
5								
6								
7								

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Resolution approving the Plans, Specifications, Form of Contract and Estimate of Cost for the 69kV Line Relay Replacement Project

Recommendation:

Attachments: 1. Res 2024 approving the Plans, Specifications, Form of Contract and Estimate of Cost for the 69kV Line Relay Replacement Project

Indianola Municipal Utilities

**RESOLUTION APPROVING THE FINAL PLANS, SPECIFICATIONS, FORM OF
CONTRACT, AND ESTIMATED COST FOR THE 69kV LINE RELAY REPLACEMENT
PROJECT**

WHEREAS, the Indianola Municipal Utilities Board Of Trustees has authorized the preparation of the proposed plans, specifications, contract documents, and an estimate of cost for the 69kV Line Relay Replacement Project; Material Procurement; and

WHEREAS, the Indianola Municipal Utilities Board of Trustees has deemed it necessary and desirable to undertake the construction of the Project; and

WHEREAS, IMU has provided notice for a public hearing and notice to bidders regarding the proposed plans, specifications, and form of contract for the Project, and the acceptance of bids; and

WHEREAS, a public hearing has been held regarding objections to the proposed plans, specifications, form of contract, and the cost of the Project, and no objections were raised.

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Utilities Board Of Trustees that the plans, specifications, and form of contract, and estimate of cost referred to in the preamble hereof be and the same are hereby approved, and the aforementioned public improvement to be constructed in accordance with the plans, specifications and form of contract is necessary and desirable.

PASSED AND APPROVED this 28th day of October 2024.

Deb White, Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: October 28, 2024
Subject: Resolution Awarding Contract for 69kV Line Relay Replacement Project

Recommendation:

Attachments:

1. East Iowa Line Relay Replacement Recommendation 2024-10-23
2. Res 2024 Awarding Contract for 69kV Line Relay Replacement Project

October 22, 2024

Mr. Mike Metcalf
Indianola Municipal Utilities
210 West 2nd Ave
Indianola, Iowa 50125

Re: Bids for 69kV Transmission Line Relay Replacements

Dear Mike,

Bids were received on October 22nd, 2024, for materials and labor to replace 69kV transmission line relays at East Iowa and Westside substations. The project is necessary due to the age of the existing line relays at East Iowa. Two bids were received for a contract that includes all material, installation labor and testing and commissioning services required to replace the existing relays. Both bidders provided the required bid security and there were no addendums to acknowledge. The bids are summarized in the attached spreadsheet and are discussed in more detail below.

Bidder	Location	Total Bid Price
Harold K Scholz Company	Ralston, NE	\$240,000.00
Steinmetz Corporation	Appleton, WI	\$178,500.00

The lowest bid was provided by Steinmetz Corporation. Steinmetz is based in Appleton, Wisconsin and has regularly worked for IMU for several years. Work that Steinmetz has performed for IMU includes commissioning Westside Substation, several RTU replacements, commissioning generator relays on Turbine 7 and Turbine 8, and numerous substation troubleshooting, testing, and repair projects. Steinmetz has always performed well and is a valuable resource for IMU for routine troubleshooting and testing as well as larger projects.

My estimated construction cost for the project was \$150,000. Bids were solicited from five contractors. Four expressed interest in the project and two ultimately provided bids. This is specialty work and there are only a few regional contractors that regularly perform this work. Work needs to take place between November 2024 and Spring 2025 because outages will be required and they need to be scheduled with MidAmerican, ITC, and CIPCO for periods of light loads. The bid from Steinmetz is reasonable for the work that will be performed

October 22, 2024
Mr. Mike Metcalf
Page 2 of 2

and I do not believe that rebidding would reduce the bid prices. I recommend accepting the bid from Steinmetz Corporation.

Please let me know if you have any questions or would like to discuss any aspects of this project.

Sincerely,

A handwritten signature in blue ink that reads "Jared Kline". The signature is written in a cursive, flowing style.

Jared Kline, P.E.

	Bid Tabulation			
	Indianola Municipal Utilities			
	69kV Line Relay Replacement Project			
	Bid Opening 2:00 PM October 22, 2024			
	Bidder	Location	Satisfactory Bid Bond	Bid Price
1	Harold K Scholz Company	Ralston, NE	X	\$240,000.00
2	Steinmetz Corporation	Appleton, WI	X	\$178,500.00
	Estimate of probable cost			\$150,000.00

Indianola Municipal Utilities
RESOLUTION NO 2024

RESOLUTION AWARDING CONTRACT FOR 69kV LINE RELAY REPLACEMENT PROJECT

BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE INDIANOLA MUNICIPAL UTILITIES:

Section 1. The bid Steinmetz Corporation in the amount of \$178,500.00 for the for 69kV Line Relay Replacement Project, Indianola Municipal Utilities, Indianola, Iowa, described in the plans and specifications previously adopted by this Board on the 28th day of October, 2024, is accepted, it being the lowest and most responsible bids for the project.

Section 2. BE IT RESOLVED BY THE IMU BOARD OF TRUSTEES OF THE CITY OF INDIANOLA, STATE OF IOWA: The Indianola Municipal Utilities Board of Trustees authorizes the General Manager to execute all related contract documents contingent upon receipt and approval of insurance and bond documents.

Contractor:	Steinmetz Corporation	of	Appleton, WI
	\$ 178,500.00		
Amount of bid:	5%		
Bond surety:	October 22, 2024		
Date of bond:			
Portion of project:	All labor and materials		

PASSED AND APPROVED this 28th day of October, 2024.

ATTEST:

Deb White, Chairperson

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: October 28, 2024
Subject: Resolution Approving Change Order #4 Turbine 8 Contol Project

Recommendation:

Attachments:

1. Turbine 8 Change Order Recommendation 2024-10-23
2. CO22-126001-007 Proposal (Rev.0)
3. CO22-126001-006 Proposal (Rev.0)
4. Res 2024- Change Order #4 Turbine 8 Contol Project

November 23, 2024

Mr. Mike Metcalf
Indianola Municipal Utilities
210 West 2nd Ave
Indianola, Iowa 50125

Re: Change Order for Turbine 8 Control Replacement Project

Dear Mike,

As you are aware, Petrotech has submitted change order requests to cover two items that arose during commissioning. The first is a second emissions test and the second is time spent troubleshooting problems that were caused when HPI temporarily connected vibration monitoring equipment.

Petrotech's contract included one emissions test. This test was completed, but not passed due to clogged water nozzles and errant readings provided by the water meter. Neither of these issues was within Petrotech's scope of work. The issues have now been resolved. This change order proposal includes Petrotech's return to confirm that the repairs were successful and tune the water injection controls before the DNR is notified of the official compliance test. Petrotech's price (\$37,294.00) includes mobilization, one day of testing and one day of a Petrotech commissioning engineer to assist with testing and tuning. This is expected to be sufficient to complete the controls replacement project and confirm that the turbine is capable of operating within the terms of the existing air quality permit. It is assumed that IMU will hire Erthwrx directly to complete the final, official air quality test without involvement from Petrotech.

During commissioning, HPI's vibration specialist connected analysis equipment to the control system. This created a ground loop that caused the fuel servo valve to malfunction. Petrotech has submitted a change order to cover time spent by their personnel troubleshooting the problem. Since HPI was not under Petrotech's control and the vibration analysis was not part of the control replacement project, it is reasonable for IMU to pay for the time Petrotech spent troubleshooting.

November 23rd, 2024
Mr. Mike Metcalf
Page 2 of 2

Based on the project status and contract documents, I recommend approval of both change order proposals.

Sincerely,

A handwritten signature in blue ink that reads "Jared Kline". The signature is written in a cursive style with a large, stylized 'J' and 'K'.

Jared Kline, P.E.

Petrotech Proposal

Purchaser **Indianola Municipal Utilities**

Project contact **Jared A. Kline**
Email: jakline@peengr.com

Project name **Turbine 8 Control Replacement Project**

Petrotech quote number **CO22-126001-007**

Revision level **0**

Date issued **September 26, 2024**

Scope summary Troubleshooting the vibration analysis equipment was grounding

Petrotech Project Manager Cristian Decia, Tel.: 281-220-3078
Email: cdecia@petrotechinc.com

Petrotech Account Manager Ray Jilley, Tel.: 713-907-3497
Email: RJilley@petrotechinc.com

Prepared by Cristian Decia, Tel.: 281-220-3078
Email: cdecia@petrotechinc.com

Please submit all purchase orders to: OrderEntry@petrotechinc.com

or mail to: **Applications Engineering Manager**
151 Brookhollow Esplanade
New Orleans, LA 70123 USA

Proposal Contents

Section 1 Detailed Scope of Supply
Section 2 Commercial



Section 1. Detailed Scope of Supply

DETAILED SCOPE OF SUPPLY

ITEM 1.0 – SECTION, TROUBLESHOOTING THE VIBRATION ANALYSIS EQUIPMENT WAS GROUNDING

ITEM	QTY.	DESCRIPTION
1.1		SERVICE INCLUDED IN ITEM 1.0
1.1.1	12.5 Hrs.	One (1) Petrotech Turbomachinery Controls (TMC) Installation supervisor on-site labor to troubleshoot grounding problems caused by the vibration analysis equipment.
1.1.2	12.5 Hrs.	One (1) Petrotech Turbomachinery Controls (TMC) Commissioning Engineer on-site labor to troubleshoot grounding problems caused by the vibration analysis equipment.
1.2.3	1 Lot	Include proportional expenses for: Hotel: 2 people / 1 night Per diem: 2 people / 1 day Car rental: 1 car / 1 day
1.2.4	1 Lot	Petrotech project management services to provide customer interface throughout the change order process.

Section 2. Commercial

Pricing

Base price includes the following items:

Item 1.0 As described in a detailed scope of service, Item 1.0.

Price Item 1.0: \$ 8,618.00

Shipment

Service already done

Currency

All currency listed in this proposal is U.S. Dollars

Proposal Validity

10 days

Shipping Terms

Per current contract

Crating Instructions

☒ DOMESTIC ☐ SEA ☐ AIR ☐ UNCRATED

Payment Terms

Per current contract

Terms and Conditions

Per current PO terms and conditions

Warranty

Per current contract

Taxes

Petrotech's quote is exclusive of all taxes. This includes but is not limited to, state, county, contractor, sales, or any other similar levy that may be required.

Additional Work

Any additional work, including delays caused by factors out of Petrotech's control, shall be billed on a Time & Material basis in accordance with Petrotech published service rates.

Confidentiality

This proposal is an offer to sell. It is a commercial response to provide specific application information and documentation. This offer is considered confidential and may contain forward-looking statements or proprietary information. By acceptance of the proposal, the purchaser agrees to maintain vendor confidentiality, not distribute beyond the purchaser's company or its assigns, or reuse in whole or part beyond the original purchase realization scope.

Petrotech Proposal

Purchaser **Indianola Municipal Utilities**

Project contact **Jared A. Kline**
Email: jakline@peengr.com

Project name **Turbine 8 Control Replacement Project**

Petrotech quote number **CO22-126001-006**

Revision level **0**

Date issued **September 26, 2024**

Scope summary **Second Turbine Emissions Test**

Petrotech Project Manager **Cristian Decia, Tel.: 281-220-3078**
Email: cdecia@petrotechinc.com

Petrotech Account Manager **Ray Jilley, Tel.: 713-907-3497**
Email: RJilley@petrotechinc.com

Prepared by **Cristian Decia, Tel.: 281-220-3078**
Email: cdecia@petrotechinc.com

Please submit all purchase orders to: OrderEntry@petrotechinc.com

or mail to: **Applications Engineering Manager**
151 Brookhollow Esplanade
New Orleans, LA 70123 USA

Proposal Contents

Section 1 Detailed Scope of Supply
Section 2 Commercial



Section 1. Detailed Scope of Supply

DETAILED SCOPE OF SUPPLY

ITEM 1.0 –SECOND COMMISSIONING TRIP

ITEM	QTY.	DESCRIPTION
1.1		SERVICE INCLUDED IN ITEM 1.0
1.1.1	1 Lot	One (1) Petrotech Turbomachinery Controls (TMC) Commissioning Engineer to be on site for a period of one (1) day to perform water injection calibration. This is due to issues identified with the water injection valve during the initial calibration, which necessitated repairs. <u>Notes:</u> a) Any additional full or partial days will be charged at a similar rate without airfare and travel time which means \$ 4,167/day. b) This trip will take place before the trip mentioned in item 2.0.

DETAILED SCOPE OF SUPPLY
ITEM 2.0 –SECOND EMISSIONS TURBINE TEST

ITEM	QTY.	DESCRIPTION																									
2.1		SERVICE INCLUDED IN ITEM 2.0																									
2.1.1	1 Lot	One (1) Petrotech Turbomachinery Controls (TMC) Commissioning Engineer to be on site for a period of one (1) day during the stack testing																									
2.2.2	1 Lot	Subcontractor services to be on-site for a period of one (1) day to perform the emissions test. Emissions testing includes three (3) tests period measuring for NOx (Method 3A and 7E) as follows: <table><tr><th>Unit</th><th>Load Rate</th><th>Pollutant</th><th>Test Duration</th><th>Methodology</th></tr><tr><td>Unit 1</td><td>30%</td><td>NOx, O₂</td><td>Three 20-minute runs</td><td>EPA Method 3A EPA Method 7E</td></tr><tr><td>Unit 1</td><td>50%</td><td>NOx, O₂</td><td>Three 20-minute runs</td><td>EPA Method 3A EPA Method 7E</td></tr><tr><td>Unit 1</td><td>70%</td><td>NOx, O₂</td><td>Three 20-minute runs</td><td>EPA Method 3A EPA Method 7E</td></tr><tr><td>Unit 1</td><td>90-100%</td><td>NOx, O₂</td><td>Three 20-minute runs</td><td>EPA Method 3A EPA Method 7E</td></tr></table>	Unit	Load Rate	Pollutant	Test Duration	Methodology	Unit 1	30%	NOx, O ₂	Three 20-minute runs	EPA Method 3A EPA Method 7E	Unit 1	50%	NOx, O ₂	Three 20-minute runs	EPA Method 3A EPA Method 7E	Unit 1	70%	NOx, O ₂	Three 20-minute runs	EPA Method 3A EPA Method 7E	Unit 1	90-100%	NOx, O ₂	Three 20-minute runs	EPA Method 3A EPA Method 7E
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Unit 1	90-100%	NOx, O ₂	Three 20-minute runs	EPA Method 3A EPA Method 7E																							
2.2.3	1 Lot	Petrotech project management services to provide customer interface throughout the change order process. <u>Notes:</u> a) Additional testing (tuning) or excessive testing delays \$ 885/hour. b) Standby Days (if necessary) \$ 7,080/day. c) Job cancellation or postponement within 3 weeks of the scheduled project \$ 1,920/each.																									

Section 2. Commercial

Pricing

Base price includes the following items:

Item 1.0 As described in a detailed scope of service, Item 1.0.

Price Item 1.0: \$ 12,042.00

Item 2.0 As described in a detailed scope of service, Item 2.0.

Price Item 2.0: \$ 25,256.00

Shipment

Service is to be defined.

Currency

All currency listed in this proposal is U.S. Dollars

Proposal Validity

30 days

Shipping Terms

Per current contract

Crating Instructions

☒ DOMESTIC ☐ SEA ☐ AIR ☐ UNCRATED

Payment Terms

Per current contract

Terms and Conditions

Per current PO terms and conditions

Warranty

Per current contract

Taxes

Petrotech's quote is exclusive of all taxes. This includes but is not limited to, state, county, contractor, sales, or any other similar levy that may be required.

Additional Work

Any additional work, including delays caused by factors out of Petrotech's control, shall be billed on a Time & Material basis in accordance with Petrotech published service rates.

Confidentiality

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or its assigns, or reuse in whole or part beyond the original purchase realization scope.

Indianola Municipal Utilities
RESOLUTION NO.

Resolution to Approve Change Order No. 4 for Turbine 8 Control Project

WHEREAS, Petrotech issued a recommendation for a change of order to the Turbine 8 Control Replacement project, recognizing the need to conduct a second emissions test and time spent troubleshooting problems with vibration monitoring equipment; and

WHEREAS, change order no. 4 to the construction contract with Petrotech has been prepared to formally amend the contract terms to encompass the change outlined above.

NOW, THEREFORE, BE IT RESOLVED BY THE IMU BOARD OF TRUSTEES OF INDIANOLA, IOWA,

That Change order no. 4 to the Construction Contract with Petrotech for this project is hereby approved; and

The total authorized compensation to Petrotech for this project is increased through approval of change order no. 4 as shown below:

Original Contract	\$599,914.00
Change Order No. 4	<u>\$37,298.00</u>
Total Revised Contract	\$666,542.00

PASSED AND APPROVED this 28th Day of October 2024

Deb White, Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Resolution Approving Lime Tower Relocation, Filter Media Replacements, and Standby Generator Addition Projects: Engineering Services

Recommendation:

Attachments:

1. Brand IMU_Lime Tower Recoating, Filter Media Replacement, Standby Generator Addition_Agreement Transmit
2. Engineering Services Agreement_Water Treatment Facility_Lime Tower Recoating, Filter Media Replacement, Standby Generator
3. RES 2024 Approving Lime Tower Relocation, Filter Media Replacements, and Standby Generator Addition Projects; Engineering Services



October 23, 2024

Justin Brand
Water Superintendent
Indianola Municipal Utilities
210 West 2nd Avenue
Indianola, Iowa 50125

INDIANOLA MUNICIPAL UTILITIES
LIME TOWER RECOATING, FILTER MEDIA REPLACEMENT,
AND STANDBY GENERATOR ADDITION
AGREEMENT FOR ENGINEERING SERVICES

The enclosed agreement is for engineering services for the Lime Tower Recoating, Filter Media Replacement, and Standby Generator Addition Projects at the Indianola Municipal Utility's Water Treatment Facility.

The Indianola Municipal Utility's Water Treatment Facility was constructed in 1996. The Water Treatment Facility staff has been engaged in routine inspection and maintenance of the facilities to maintain finished water quality and prolong the useful life of the equipment within the facility.

The staff has noted visible deterioration on the exterior coating of the lime storage tower. If the coating is not addressed, there is the possibility that the tower will further deteriorate to the point where it will no longer be serviceable and need to be replaced. The Lime Tower Recoating project is proposed to prolong the useful life of the lime storage tower at the water treatment facility.

The staff has noted decreased performance of the gravity filters. Due to the age of the gravity filters at the water treatment facility, the Filter Media Replacement project is proposed to proactively prolong the useful life of the gravity filters at the water treatment facility.

The Iowa Department of Natural Resources has mandated standby power to be installed at drinking water treatment facilities across the state. The Standby Generator Addition project is proposed to meet this requirement.

Page 2 of 2
Justin Brand
October 23, 2024

If you have any questions or comments, please contact us at 515-225-8000.

VEENSTRA & KIMM, INC.

A handwritten signature in blue ink that reads "Vincent Driscoll". The signature is written in a cursive, flowing style.

Vincent J. Driscoll

VJD

0-03

cc: Monica Thompson, IMU (e-mail)

ENGINEERING AGREEMENT FOR PROFESSIONAL SERVICES

LIME TOWER RECOATING, FILTER MEDIA REPLACEMENTS, AND STANDBY GENERATOR ADDITION WATER TREATMENT FACILITY INDIANOLA MUNICIPAL UTILITIES INDIANOLA, IOWA

THIS AGREEMENT, made this _____ day of _____ 2024, by and between the **INDIANOLA MUNICIPAL UTILITIES**, Indianola, Iowa, hereinafter referred to as the **Owner**, party of the first part, and **VEENSTRA & KIMM, INC.** of West Des Moines, Iowa, a corporation organized and existing under the laws of the State of Iowa, hereinafter referred to as the **Engineers**,

WITNESSETH: THAT WHEREAS, the Indianola Municipal Utilities owns and operates a water treatment system to provide water supply for the City of Indianola, Iowa, and

WHEREAS, the existing lime storage tower at the water treatment facility has corroded, and

WHEREAS, the Owner has determined it would be appropriate to proceed with the recoating of the lime storage tower, and

WHEREAS, the existing gravity filters at the water treatment facility are showing signs of declined performance, and

WHEREAS, the Owner has determined it would be appropriate to proceed with replacement of the filter media, and

WHEREAS, the Owner is considering the addition of a permanent standby power engine generator and related electrical infrastructure at their existing Water Treatment Facility, and

WHEREAS, the Owner has determined it would be appropriate to proceed with the design and construction of the standby generator addition, and

WHEREAS, the Owner desires to retain the Engineers to perform engineering design and construction services on the lime storage tower recoating, filter media replacement, and standby generator addition projects.

NOW, THEREFORE, it is hereby agreed by and between the parties hereto that the Owner does hereby retain the Engineers to act for and represent it in engineering matters on the Projects. Such contract shall be subject to the following terms, conditions and stipulations, to wit:

1. **SCOPE OF PROJECT.** It is understood and agreed the projects shall include the following:

- a. Lime Tower Recoating Project:
 1. On site inspection and evaluation of the interior and exterior coatings of the lime storage tower including the condition and structural integrity of the paint coatings.
 2. Preparation of plans and specifications for the Project and miscellaneous associated work for the repair and recoating of the lime storage tower.
- b. Filter Media Replacement Project:
 1. The Utility will coordinate labor and materials associated with the completion of the media replacement as a maintenance project for the facility.
 2. Veenstra & Kimm, Inc. will provide General Services during replacement of the filter media.
- c. Standby Generator Addition Project:
 1. As detailed in the report, a 1000 KW 480v/3 phase Generator along with a 1600 Amp service entrance rated Automatic Transfer Switch (ATS) is required to provide standby power at the facility.
 2. Prepare engineering design drawings and prepare technical specifications for the installation of generator and ATS described above. The design will consist of:
 - a. Provide a 12" thick concrete pad with frost footings large enough to house the generator and ATS.
 - b. Modify power wiring to existing MCC by feeding the Utility power and standby power through the ATS.
 - c. Modify existing SCADA/Control system to provide Generator and ATS status and alarms
 - d. Issue construction documents to prospective bidders and obtain bids.
 - e. Evaluate bids and recommend low bidder.

The scope and extent of the improvements may be modified during the course of design as necessary to be compatible with the overall improvement program.

2. **DESIGN SURVEYS.** The Engineers shall make all surveys necessary for design of the Project and preparation of plans and specifications. The engineers are already in possession of the plans and shop drawings for the building and equipment.
3. **DESIGN CONFERENCES AND REPORTS.** The Engineers shall attend such design conferences with the Owner as may be necessary to make decisions as to the details of design of the Project.
4. **PLANS AND SPECIFICATIONS.** The Engineers shall prepare such detailed plans and specifications as are reasonably necessary and desirable for construction of the Project.

The specifications shall describe, in detail, the work to be done, materials to be used and the construction methods to be followed. Preliminary plans and specifications shall be submitted to the Owner for review prior to completion of preparation of final plans and specifications. Three (3) sets of final plans and specifications shall be submitted to the Owner.

5. **PERMITS AND LICENSES.** The Engineers shall provide copies of the plans and specifications for review by the Iowa Department of Natural Resources and shall assist in obtaining the necessary construction permits for the Project. Any fees for the construction permits shall be paid by the Owner and said costs shall not be charged against the Engineers' fees.
6. **ESTIMATE OF COST.** The Engineers shall prepare an estimate of cost for the construction contract. The estimate of cost shall be based on the Engineers' best knowledge at the time of preparation of the estimate of cost. The Engineers shall not be responsible if the construction contract awarded for the Project varies from the Engineers' estimate of cost. The Engineers shall advise and assist the Owner, if necessary, in adjusting the scope and extent of the Project to allow the Project to be constructed within available budget limitations.
7. **ADVERTISEMENT FOR BIDS.** The Engineers shall assist in the preparation of the notice to contractors and shall provide plans and specifications to prospective bidders. Publication costs shall be borne by the Owner.
8. **COSTS OF PLANS AND SPECIFICATIONS.** The Owner shall compensate the Engineers for the actual costs of the plans and specifications provided contractors, plan rooms and suppliers during Project bidding. The costs of plans shall be separate from the fee provisions under "**14. COMPENSATION**".
9. **BIDDING SERVICES.** The Engineers shall provide services during the bidding phase of the Project that will include the following:
 - a. Notification of potential bidders of the upcoming Project and availability of plans and specifications.
 - b. Distribute bidding documents and maintain bidders list.
 - c. Respond to questions raised during the bidding period and prepare and issue addendum as appropriate to clarify, correct or change the bidding documents.
 - d. Assist the Owner in evaluating alternate equipment submittals during and following the bidding phase of the Project.

- 10. BID OPENING AND AWARD OF CONTRACT.** The Engineers shall have a representative present when the bids and proposals are opened and shall prepare a tabulation of bids for the Owner and shall advise as to the responsiveness of the bidders, and assist in making the award of contract. After the award is made, the Engineers shall prepare the necessary contract documents. During the bidding phase, the Engineers shall advise the Owner of the responsiveness of each proposal submitted. The Engineers shall not be responsible for advising the Owner as to the responsibility of any bidder.
- 11. GENERAL SERVICES DURING CONSTRUCTION.** The Engineers shall provide general services during construction including:
- a. The Engineer shall conduct a preconstruction conference attended by representatives of the Owner, Engineer, and contractor to discuss details of the Project.
 - b. Consult with and advise Owner.
 - c. Provide periodic visits to the site during construction by representatives of the various design disciplines. Such visits will be as necessary to observe the progress and quality of the various aspects of the contractor's work. Based on information obtained during visits and observations, the Engineers will endeavor to determine in general if the contractor's work is in accordance with the contract documents. The Engineers' visits are for the purpose of observing the contractor's work in progress and the Engineers will not supervise, direct or have control over the contractor's work, or have the authority over, or the responsibility for, the means, methods, techniques or procedures of construction selected by the contractor. The Engineers shall not be responsible for safety precautions and programs or for the failure of the contractor to comply with any applicable laws, rules, regulations or local codes and ordinances.
 - d. Attend periodic Project meetings with construction contractor.
 - e. During and following periodic site visits the Engineers shall have the authority to reject contractor's work, or disapprove such work while in progress, if the Engineers believe such work will not produce a completed Project that generally conforms to the contract documents.
 - f. The Engineers will assist in interpretation of the plans and specifications and will issue necessary clarifications and interpretations to the contract documents as appropriate. Such clarifications and interpretations will be consistent with the intent of, and will be reasonably inferable from, the contract documents.

- g. In consultation with the Owner, the Engineers may issue field orders offering minor variations from the requirements of the contract documents.
- h. The Engineers shall review shop drawings, samples and other data the contractors are required to submit for conformance with the information given in the contract documents and compatibility with the design concept. Such review and review comments will not extend to means, methods, techniques, procedures or sequences of construction or to safety precautions and programs thereto. The Engineers shall not be responsible for determining the completeness of the submittal of shop drawings and the contractors shall remain wholly responsible for any omissions in submittals.
- i. The Engineers, in consultation with the Owner, will evaluate and determine the acceptability of substitute or "or equal" materials and equipment as proposed by contractors. Such review will be for conformance with the contract document requirements.
- j. The Engineers shall review the results of tests and inspections for the purpose of determining the results certified therein to indicate compliance with the contract documents. The Engineers review will not constitute an independent evaluation that the contents or procedures of such inspections, tests or approvals comply with the requirements of the contract documents. The Engineers shall be entitled to rely on the results of the tests completed and submitted by or on behalf of the contractor.
- k. Process and certify payment estimates of the contractor to the Owner.
- l. In consultation with Owner, the Engineers shall prepare amendments to the contract documents as necessary to show major changes made during construction.
- m. The Engineers shall receive, review and transmit to the City documents submitted by the contractor as required under the contract documents to obtain final payment. The Engineers review of such documents will be only to determine generally that the content complies with the requirements of the contract documents.

- 12. RESIDENT REVIEW SERVICES.** The Engineers shall provide Resident Review services during construction of the Project.

The Engineers shall assign a qualified and experienced engineering technician to provide on-site observation of construction activities for such periods reasonably required to assure proper review of the construction work. Resident observation services will be provided on a part-time basis.

- 13. FINAL REVIEW SERVICES.** The Engineers shall make a final review after construction is complete to determine that the construction is substantially in compliance with the plans and specifications. The Engineers shall certify to the Owner that construction is substantially in compliance with the plans and specifications.

14. COMPENSATION.

- a. The fee for engineering design and construction services enumerated for the Project as set forth in "**1. SCOPE OF PROJECT**" subparagraph a. Lime Tower Recoating Project encompassing the work set forth from "**2. DESIGN SURVEYS**" through "**13. FINAL REVIEW SERVICES**" of this Agreement shall be the hourly not to exceed fee of Thirty-Two Thousand Five Hundred Dollars (\$32,500).
- b. The fee for engineering construction services enumerated for the Project as set forth in "**1. SCOPE OF PROJECT**" subparagraph b. Filter Media Replacement Project encompassing the work set forth in "**11. GENERAL SERVICES DURING CONSTRUCTION**" of this Agreement shall be the hourly not to exceed fee of Eight Thousand Nine Hundred Dollars (\$8,900).
- c. The fee for engineering design and construction services enumerated for the Project as set forth in "**1. SCOPE OF PROJECT**" subparagraph c. Standby Generator Project encompassing the work set forth from "**2. DESIGN SURVEYS**" through "**13. FINAL REVIEW SERVICES**" of this Agreement shall be for the lump sum fee of Eighty-Four Thousand Five Hundred Dollars (\$84,500).
- d. The Owner shall compensate the Engineers for the cost of plans and distribution of plans as set forth in "**5. PLANS AND SPECIFICATIONS**" above as provided in Iowa Code Section 26.3(2). The reimbursement of the cost plans and distribution of plans as required under Iowa Code Section 26.3(2) is not included in the fees for services set forth under this Agreement.

- 15. PAYMENT.** The fees shall be due and payable as follows:

- a. For design, preparation of plans and specifications and general services during construction, the fee shall be due and payable monthly based on that proportion of the fee which the Engineers have completed as of the time of the applicable billing.

- 16. TIME OF COMPLETION.** The Engineers shall complete the work outlined in this Agreement within a time mutually agreed upon by the City and Engineers. The Engineers shall not be responsible for delays in approval or other actions by governmental agencies which may delay the completion date.
- 17. LEGAL SERVICES.** The Owner shall provide the services of an Attorney in matters pertaining to this Project. The Engineers shall cooperate with the Owner' attorney and shall comply with her requirements as to form of contract documents and procedures relative to them.
- 18. SERVICES NOT INCLUDED.** Services not included under this Agreement are as follows:
- a. Material testing and inspections other than those completed as a part of the resident review on the site of the Project, environmental impact statements, archaeological investigation, contaminated soil and groundwater investigations, geotechnical investigation. None of these items are anticipated as being needed.
 - b. Services related to or regarding arbitration or litigation of a construction contract between a construction contractor and the Owner regarding any of the Projects included in this Agreement.
 - c. Services required for the evaluation of and determination to accept defective work by Contractor including required re-design services.
 - d. Services required for re-design as a result of substitute products during the construction phase.
 - e. Services required as a result of Owner providing incomplete or incorrect Project information.
 - f. Assistance in connection with bid protests, rebidding or renegotiating contracts for construction, materials, equipment, or services, only so long as the original work is reasonably consistent with the Owner's program or other instruction.
 - g. Providing assistance in resolving any Hazardous Environmental Condition in compliance with current Laws and Regulations.

19. SUSPENSION.

- a. The Owner agrees that the Engineer is not responsible for damages arising directly or indirectly from any delays for causes beyond the Engineer's control. For purposes of this Agreement, such causes include, but are not limited to, strikes or other labor disputes; severe weather disruptions or other natural disasters or acts of God; fires, riots, war or other emergencies; failure of any government agency to act in a timely manner; failure of performance by the Owner; or discovery of any hazardous substances or differing site conditions. In addition, if the delays resulting from any such causes increase the cost or time required by the Engineer to perform its services in an orderly and efficient manner, the Engineer shall be entitled to a reasonable adjustment in schedule and compensation.
- b. If Engineer's services are extended by Contractor's actions or inactions for more than the scheduled final construction completion, as defined in the Contract Documents, through no fault of the Engineer, the Engineer will be entitled to equitable and agreeable adjustment of rates and amounts of compensation provided in this Agreement.

20. TERMINATION.

- a. In the event of termination of this Agreement by either party, the Owner shall, within fifteen (15) calendar days of termination, pay the Engineer for all services rendered and all reimbursable costs incurred by the Engineer up to the date of termination, in accordance with the payment provisions of this Agreement.
- b. The Owner may terminate this Agreement for the Owner's convenience and without cause upon giving the Engineer not less than seven (7) calendar days written notice.
- c. Either party may terminate this Agreement for cause upon giving the other party not less than seven (7) calendar days written notice for any of the following reasons.
 - 1) Substantial failure by the other party to perform in accordance with the terms of this Agreement and through no fault of the terminating party.
 - 2) Assignment of this Agreement or transfer of the Project by either party to any other entity without the prior written consent of the other party.
 - 3) Suspension of the Project or the Engineer's services by the Owner for more than ninety (90) calendar days, consecutive or in the aggregate.
 - 4) Material changes in the conditions under which this Agreement was entered into, the Scope of Services or the nature of the Project, and the failure of the parties to reach agreement on the compensation and schedule adjustments necessitated by such changes.

- d. In the event of any termination that is not the fault of the Engineer, the Owner shall pay the Engineer, in addition to payment for services rendered and reimbursable costs incurred, for all expenses reasonably incurred by the Engineer in connection with the orderly termination of this Agreement, including but not limited to demobilization, reassignment of personnel, associated overhead costs and all other expenses directly resulting from the termination.

21. DISPUTE RESOLUTION.

- a. Owner and Engineer agree to negotiate all disputes between them in good faith for a period of thirty (30) days from the date of notice prior to other provisions of this Agreement, or under law.
- b. Owner and Engineer agree to use mediation for dispute resolution if the previously described negotiation process is not successful.
- c. In the event of any litigation arising from or related to this Agreement or the services provided under this Agreement, each party shall pay their own legal expenses, including staff time, court costs, attorney's fees and all other related expenses in such litigation.

- 22. BETTERMENT.** When a Change Order is necessitated by an act or omission of Engineer or an error in the design of the Project, responsibility for such act, omission, or error shall be determined in good faith by Owner and Engineer. To the extent that such act, omission, or error arose out of the lack of quality professional services provided by Engineer or of the lack of professional quality deliverables prepared by Engineer, Owner shall be entitled to an amount equal to the difference between the actual cost of the change work and the estimated cost of the change work (less added value to the Owner) if there had been no such act, omission, or error. Engineer shall pay such sum to Owner.

- 23. CHANGED CONDITIONS.** If, during the term of this Agreement, circumstances or conditions that were not originally contemplated by or known to the Engineer are revealed, to the extent that they affect the scope of services, compensation, schedule, allocation of risks or other material terms of this Agreement, the Engineer may call of renegotiation of appropriate portions of this Agreement. The Engineer shall notify the Owner of the changed conditions necessitating renegotiation, and the Engineer and the Owner shall promptly and in good faith enter into renegotiation of this Agreement to address the changed conditions. If terms cannot be agreed to, the parties agree that either party has the absolute right to terminate this Agreement, in accordance with the termination provision hereof.

- 24. CHANGES.** If, after the plans and specifications are completed and approved by the Owner, the Engineers are required to change the plans and specifications because of changes made by the Owner, the Engineers shall receive additional compensation for making such changes. The compensation for such changes shall be based upon the standard hourly fees plus expenses for personnel of the Engineers actually engaged in making the changes.
- 25. EXTRA WORK.** Fees stated in this Agreement cover the specific services outlined in this Agreement for the Project. If the Owner requires additional services of the Engineers in connection with the Project, or changes or modifications in the Project, the Engineers shall receive additional compensation for said services. Such additional compensation shall be at the standard hourly fees for personnel of the Engineers, plus expenses for personnel engaged in the authorized extra work.
- 26. INDEMNIFICATION.** The Engineers shall and hereby agree to hold and save the Owner harmless from any and all claims, settlements, and judgments, to include all reasonable investigative fees, attorneys' fees, suit and court costs for personal injury, property damage, and/or death arising out of the Engineers' or any of its agents', servants', and employees' errors, omissions or negligent acts for services under this Agreement, and for all injury and/or death to any and all of the Engineers' personnel, agents, servants, and employees occurring under the Workers' Compensation Act of the State of Iowa.
- 27. INSURANCE.** The Engineers shall furnish the Owner with certificates of insurance by insurance companies licensed to do business in the State of Iowa, upon which the Owner is endorsed as an additional named insured, in the following limits. It must be clearly disclosed on the face of the certificates that the coverage is on an occurrence basis.

General Liability*	\$1,000,000/2,000,000
Automobile Liability	\$1,000,000
Excess Liability (Umbrella)*	\$8,000,000/8,000,000
Workers' Compensation, Statutory Benefits Coverage B	\$1,000,000
Professional Liability**,***	\$3,000,000/3,000,000

*Occurrence/Aggregate

** The Owner is not to be named as an additional insured.

***Claims made basis

- 28. ASSISTANTS AND CONSULTANTS.** It is understood and agreed that the employment of the Engineers by the Owner for the purposes aforesaid shall be exclusive, but the Engineers shall have the right to employ such assistants and consultants as they deem proper in the performance of the work.
- 29. ASSIGNMENT.** This Agreement and each and every portion thereof shall be binding upon the successors and assigns of the parties hereto.

The undersigned do hereby covenant and state that this Agreement is executed in duplicate as though each were an original and that there are no oral agreements that have not been reduced to writing in this instrument.

It is further covenanted and stated that there are no other considerations or monies contingent upon or resulting from the execution of this Agreement nor have any of the above been implied by or for any party to this Agreement.

IN WITNESS WHEREOF, the parties hereto have hereunto subscribed their names on the date first written above.

**BOARD OF TRUSTEES
INDIANOLA MUNICIPAL UTILITIES**

ATTEST:

By _____
General Manager

By _____
Board Secretary

VEENSTRA & KIMM, INC.

ATTEST:

By Forest Allard

By Vincent Quiscoll

VEENSTRA & KIMM, INC.
HOURLY RATES BY EMPLOYEE CLASSIFICATION
2024

Management I	\$250.00
Management II	235.00
Process Engineer I	255.00
Client Services I	230.00
Client Services II	150.00
Client Services III	135.00
Client Services IV	105.00
Client Services V	95.00
IT I.....	191.00
IT II.....	127.00
IT III.....	82.00
Funding Specialist I.....	140.00
Funding Specialist II	125.00
Engineer I-A.....	237.00
Engineer I-B	223.00
Engineer I-C.....	218.00
Engineer I-D.....	204.00
Engineer II-A.....	198.00
Engineer II-B	187.00
Engineer III-A	176.00
Engineer III-B	170.00
Engineer III-C	165.00
Engineer IV	157.00
Engineer V	149.00
Engineer VI	140.00
Engineer VII	135.00
Engineer VIII	129.00
Engineer IX	121.00
Engineer X	106.00
Engineer XI	96.00
Engineer XII	88.00
Design Technician I.....	138.00
Design Technician II.....	120.00
Design Technician III.....	107.00
Architect I	193.00
Architect II	167.00
Architect III	150.00
Planner I	151.00
Planner II	107.00
Planner III	98.00
Drafter IA.....	136.00
Drafter IB	125.00
Drafter II	120.00
Drafter III	115.00
Drafter IV	105.00
Drafter V	95.00

Drafter VI	85.00
Drafter VII	75.00
Clerical I	95.00
Clerical II	89.00
Clerical III	77.00
Clerical IV	67.00
Clerical V	57.00
Construction Engineer I	225.00
Construction Engineer II	145.00
Construction Engineer III	128.00
Construction Engineer IV	107.00
Surveyor I	163.00
Surveyor II	145.00
Technician I	122.00
Technician II	108.00
Technician III	99.00
Technician IV	95.00
Technician V	90.00
Technician VI	80.00
Technician VII	72.00
Technician VIII	65.00
Technician IX	54.00
Building Inspector I	220.00
Building Inspector I-A	154.00
Building Inspector II	119.00
Building Inspector III	95.00
Accounting I	196.00
Accounting II	142.00
Accounting III	126.00
Accounting IV	99.00
Accounting V	91.00
Administrative Assistant II	108.00
Design Engineer I	120.00
Engineer Intern	102.00
Office Coordinator	122.00
Principal of Firm I	235.00
Project Engineer I	135.00
Project Engineer II	152.00
Project Engineer III	161.00
Project Engineer IV	174.00
Senior Project Engineer I	155.00
Senior Project Engineer II	168.00
Senior Project Engineer III	182.00
Senior Project Engineer IV	187.00
Senior Project Manager IV	218.00
Senior Technician IV	157.00
Engineering Technician I	120.00
Engineering Technician II	124.00
Engineering Technician III	149.00

REIMBURSABLES AND EQUIPMENT RATES

GPS / Robotics	35.00
Tablet	45.00
Fluoroscope	50.00
4-Wheeler	50.00
Drone.....	75.00
Mileage.....	IRS Rate

Indianola Municipal Utilities
RESOLUTION NO 2024-

**RESOLUTION APPROVING LIME TOWER RECOATING, FILTER MEDIA REPLACEMENT, AND STANDBY
GENERATOR ADDITION PROJECTS; ENGINEERING SERVICES**

WHEREAS, Indianola Municipal Utilities determined their Water Treatment Facility is in need of preventative maintenance including Lime Tower Relocating, Filter Media Replacement and a Standby Generator Addition.; and

WHEREAS, Veenstra & Kimm Inc has prepared the attached agreement in order for the entities to meet Iowa Department of Natural Resources requirements and prevent further deterioration to infrastructure; and

WHEREAS, it is the determination of the Indianola Municipal Utilities Board of Trustees that IMU should enter into the agreement as attached.

NOW, THEREFORE, BET IT RESOLVED by the Indianola Municipal Utilities Board of Trustees that the three-year agreement with Esri is hereby approved and the Board Chair is authorized and directed to execute the agreement on behalf of Indianola Municipal Utilities.

Approved this 28th day of October 2024.

ATTEST:

Deb White, Chairperson

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Resolution Approving The Final Plans, Specifications, Form of Contract, and Estimated cost for Filter Media Replacement Project

Recommendation:

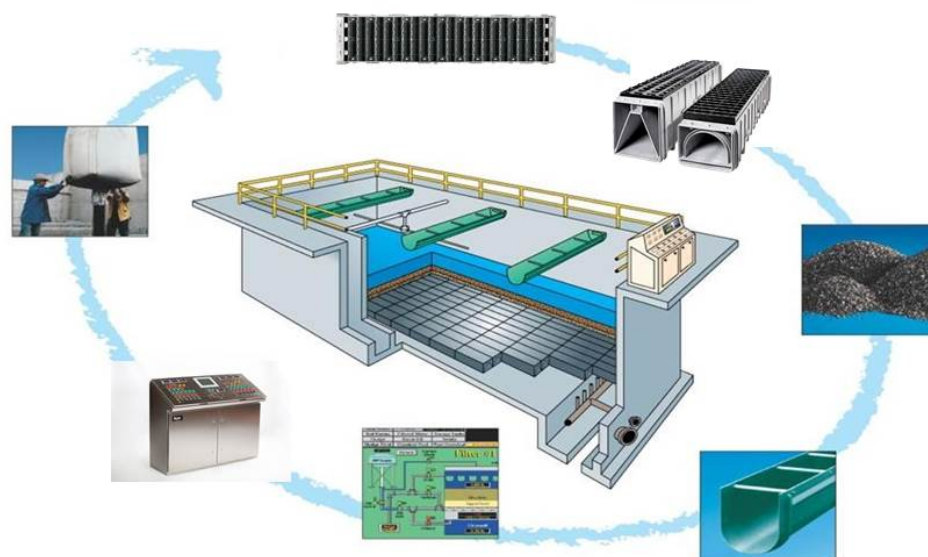
Attachments:

1. I24303 Indianola IA - Leopold Proposal rev01 10-24-24 - Priced_
2. Res 2024 approving the Final Plans Specifications Form of Contract and Estimate of Cost for the Filter Media Replacement Project_

Proposal

Indianola WTP

Indianola, IA



10/24/2024

Xylem Water Solutions USA, Inc.
108 Tomlinson Drive Suite 400
Zelienople, PA 16063
Mr. Bruce Wolfe
Mobile: 724-504-0366
Email: bruce.wolfe@xylem.com

10/24/2024

Project name : Indianola, IA
Project number : I24303 rev01

To Whom It May Concern:

Based on your inquiry, we are pleased to forward the following proposal to your attention. Thank you for the opportunity to offer our equipment and services for the Indianola, IA WTP project.

We hope that our proposal meets your expectation. If you have any questions, please do not hesitate to contact me or our local representative.

Respectfully,

Bruce Wolfe
Territory Manager

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1 Technical Description

1.1 SCOPE OF SUPPLY

We are pleased to offer the following materials and services by Xylem Water Solutions USA, Inc.

OPTION 1 - NEW FILTER MEDIA AND INSTALLATION - 4 FILTERS:

Option #1 includes new filter media for 4 filters 16' x 18' each. This option also includes removal and replacement of the media.

FILTER MEDIA:

	Four (4) filter cells, 288 square feet each TOTAL FILTER AREA: 1,152 square feet
1,320 cubic feet	SILICA SAND – 12" Depth plus 1" skimming allowance and 5% extra Effective size: 0.45 mm to 0.55 mm Uniformity coefficient: 1.40 66 Tons
1,840 cubic feet	FILTER ANTHRACITE – 18" Depth plus 1" skimming allowance Effective Size: 1.00 mm to 1.10 mm Uniformity coefficient: 1.30 46 Tons

Material will be packaged in semi-bulk containers, "Super Bags," with lifting sleeves and bottom discharge spout, containing approximately 3,000 to 4,000 pounds per sack and palletized.

MANUFACTURER'S SERVICES (FILTER INSPECTION):

The services of a qualified Leopold technical representative will be provided to inspect and assess the condition the existing Type S Underdrains and IMS Caps Caps for a period of (4) days (8 hr/day) on site plus (4) days travel time to and from the job-site in (2) trips.

MEDIA REMOVAL, TESTING AND INSTALLATION:

- Remove the existing media from (4) filters that measure 16'x18' for a total complete filtering surface area of 1,152 SQ. FT. total. Removal done via vacuum truck.
- All media removed shall be dumped onsite and disposed of by others.
- Power wash the inside of each filter cell with a 4,200 PSI. power-washer.
- Inspection of the Type S Underdrain and IMS Cap.
- Air Scour test each filter after media removal.

- Hydraulic backwash test of each filter.
- Filter sand shall be installed via eductor slurry. NOTE – A fire hydrant connection will be needed to slurry the sand into the filter. Installer shall utilize a backflow preventer at the fire hydrant connection. Water at no cost to the installer.
- 12 ½" of filter sand will be installed in each filter.
- After completing the sand installation. The owner shall perform a backwash until clean. The owner shall then drain the water level below the sand surface. Should in the event the owner is not able to drain water below media surface without isolating from clear well and installer has to bypass pump utilizing a media insertion tube additional charges shall apply.
- Installer shall then perform a single ½" skimming to remove any fines that may be present from the manufacturer screening process. All skimmings shall be placed into the wash troughs and backwashed to waste. The final sand depth shall be no less than 12". All workers shall utilize walk boards.
- After completing the skimming procedure. The owner shall then bring the water level to about 3' above the newly installed filter sand.
- Installer shall then install 19" of anthracite.
- After completing the anthracite installation. The owner shall perform a backwash until clean. The owner shall then drain the water level below the anthracite surface.
- Installer shall then perform a single 1" skimming to remove any fines that may be present from the manufacturer screening process. All skimming's shall be placed into the wash troughs and backwashed out to waste. The final anthracite depth shall be no less than 18". All workers shall utilize walk boards.
- The owner shall then perform a final backwash. After completing the backwash. The owner shall disinfect the filter.

OPTION 2 - IMS 200 INSTALLATION - 4 FILTERS:

I.M.S® 200 MEDIA RETAINER:

Under this section, we propose to furnish 1,152 square feet of I.M.S® 200 media retainer. The I.M.S® 200 media retainer to be field installed onto the existing Leopold Universal® Type S® Underdrain block in the field in four filters cells measuring 16' x 18' each. Also included in this section are the require mounting screws and sealant needed for the installation.

NOTE: IMS caps for the end make-up underdrain block are to be field cut to suit by others (not by Leopold)

MANUFACTURER'S SERVICES (IMS 200 INSTALLTION):

The services of a qualified Leopold technical representative to inspect the existing Type S Underdrains will be provided for a period of (4) days (8 hr/day) on site plus (4) days travel time to and from the job-site in (2) trips.

IMS CAP REMOVAL AND IMS 200 INSTALLATION:

- Remove existing IMS caps.
- Remove existing grout fillet from each filter cell.
- Remove all sealant from each block.

- Shop vac. all filter block deck.
- Apply new sealant on all filter block deck.
- Install new IMS 200 and stainless-steel screws into each filter block.
- All screws shall be torqued to manufacture spec.
- Apply SIKA HI MOD 32 bonding agent on 36 lineal feet of filter cell walls, existing grout joints and approximately 2 ½” out onto the new cap. Per filter.
- Install approximately 36’ lineal feet of grout fillet into each filter cell. With non shrink SIKA Grout.
- Over coat top of newly installed grout fillet with SIKA HI MOD 31
- Allow 12-18 hours for cure.

2 Price & Scope of Supply

2.1 MAIN SCOPE

BASIS of PRICING:

Any items and/or accessories not specifically called out in this quotation must be construed as being furnished by others.

This quotation is considered firm for 90 days. Any order received more than 90 days after the date of this quotation is reviewed by Xylem Water Solutions USA, Inc. before acceptance and is subject to changes in prices or delivery depending on conditions existing at the time of entry. Quoted prices are firm for delivery within 12 months from the delivery date stipulated in the plans & specifications or mutually agreed upon by Xylem Water Solutions USA, Inc. and Purchase Order issuer at time of order placement.

We do not include any applicable taxes.

Orders resulting from this quotation should be addressed to Xylem Water Solutions USA, Inc. 108 Tomlinson Drive Suite 400 – Zelienople, PA 16063, USA.

We propose to furnish the material described in this document for **a total selling price of**

OPTION 1 – New Filter Media and Installation	\$230,000.00.
OPTION 2 – IMS Cap Removal and Installation of IMS 200	<u>\$168,000.00.</u>
TOTAL	\$398,000.00

Pricing for the equipment and field services outlined in this proposal, DAP Jobsite per Incoterms 2020.

For further information pertaining to the equipment contained in this proposal, please contact our area representative, who is:

Vessco, Inc.
Phone: 515-509-0470
Attention: Cory Sonner

Pricing is based on the following payment terms (net 30 days):
10% following initial submittal for approval
80% following the date of the respective shipments of the product
10% following installation, not to exceed 150 days after shipment of the product
(whichever comes first)

3 Commercial Terms & Conditions

3.1 DELIVERY SCHEDULE

3.1.1 Production schedule

Submittal of mechanical drawings for approval 4 to 6 weeks after order acceptance.

3.1.2 Delivery time

Delivery of fabricated items and 12 to 14 weeks after drawing approval.

Delivery of filter media 14-16 weeks after order acceptance.

FILTER MEDIA WARRANTY (if applicable): SELLER warrants that its filter media products will meet the standards established by the latest edition of AWWA (American Water Works Association) B100. SELLER shall be responsible for verifying that the filter media meets or exceeds the AWWA B100 Standard at the point of sale. Testing shall be by an independent laboratory, which regularly performs testing of filter media. BUYER shall notify Xylem Water Solutions USA, Inc. immediately upon discovery of any defective product. The SELLER shall have the right to inspect said product and BUYER shall, if requested, return the defective product to the SELLER with transportation prepaid. NO LIABILITY IS ASSUMED BY THE SELLER UNDER ANY CIRCUMSTANCES FOR LABOR, MATERIAL OR OTHER COSTS ASSOCIATED WITH THE REMOVAL OR REPLACEMENT OF MEDIA UNLESS PREVIOUSLY APPROVED IN WRITING BY AN AUTHORIZED EMPLOYEE OF THE SELLER.

3.2 TERMS AND CONDITIONS OF SALE – NORTH AMERICA

This order is subject to the Standard Terms and Conditions of Sale – Xylem Americas effective on the date the order is accepted. Terms are available at <http://www.xyleminc.com/en-us/Pages/terms-conditions-of-sale.aspx> and incorporated herein by reference and made a part of the agreement between parties.

Different terms are hereby rejected unless expressly assented to in writing.

AGREEMENT TO PURCHASE: BUYER agrees to purchase the equipment and services herein in accordance with the terms and conditions set forth above.

ACCEPTANCE: SELLER hereby accepts BUYER'S offer to purchase.

(BUYER)

Xylem Water Solutions USA, Inc.

BY: _____

_____, 20 _____

BY: _____

_____, 20 _____

Indianola Municipal Utilities

**RESOLUTION APPROVING THE FINAL PLANS, SPECIFICATIONS, FORM OF
CONTRACT, AND ESTIMATED COST FOR FILTER MEDIA REPLACEMENT PROJECT**

WHEREAS, the Indianola Municipal Utilities Board Of Trustees has authorized the preparation of the proposed plans, specifications, contract documents, and an estimate of cost for, the Filter Media Replacement Project; and

WHEREAS, the Indianola Municipal Utilities Board of Trustees has deemed it necessary and desirable to undertake the Project; and

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Utilities Board Of Trustees that the plans, specifications, and form of contract, and estimate of cost referred to in the preamble hereof be and the same are hereby approved, and the aforementioned public improvement to be constructed in accordance with the plans, specifications and form of contract is necessary and desirable.

PASSED AND APPROVED this 28th day of October 2024.

Deb White, Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: October 28, 2024
Subject: Resolution Authorizing the Purchase of a Server for the Fiber Department

Recommendation:

Attachments:

1. R660 Broadcom ETA 11524 Quotation #0227877768 -
2. Res 2024- approval of server purchase from Insight- Fiber

Account name: 11030542

IMUFIBER
PO BOX 356
INDIANOLA IA 50125-2449

SHIP-TO

IMUFIBER
110 S B ST
INDIANOLA IA 50125-2449

Quotation

Quotation Number : [0227877768](#)
Document Date : 22-OCT-2024
PO Number :
PO Release :
Sales Rep : Natalie Derrick
Email : NATALIE.DERRICK@INSIGHT.COM
Phone :

We deliver according to the following terms:

Payment Terms : Net 30 days
Ship Via : Insight Assigned Carrier/Ground
Terms of Delivery : FOB ORIGIN
Currency : USD

Material	Material Description	Quantity	Unit Price	Extended Price
3000182465300	POWEREDGE R660 BROADCOM 10/25GB NICS	1	9,645.58	9,645.58
Product Subtotal				9,645.58
Freight				28.56
TAX				675.19
Total				10,349.33

Lease & Financing options available from Insight Global Finance for your equipment & software acquisitions. Contact your Insight account executive for a quote.

Thank you for choosing Insight. Please contact us with any questions or for additional information about Insight's complete IT solution offering.

Sincerely,

Natalie Derrick

NATALIE.DERRICK@INSIGHT.COM

Insight Global Finance has a wide variety of flexible financing options and technology refresh solutions. Contact your Insight representative for an innovative approach to maximizing your technology and developing a strategy to manage your financial options.

This purchase is subject to Insight's online Terms of Sale unless you have a separate purchase agreement signed by both your company and Insight, in which case, that separate agreement will govern. Insight's online Terms of Sale can be found at the "terms-and-policies" link below.

SOFTWARE AND CLOUD SERVICES PURCHASES: If your purchase contains any software or cloud computing offerings

("Software and Cloud Offerings"), each offering will be subject to the applicable supplier's end user license and use terms ("Supplier Terms") made available by the supplier or which can be found at the "terms-and-policies" link below. By ordering, paying for, receiving or using Software and Cloud Offerings, you agree to be bound by and accept the Supplier Terms unless you and the applicable supplier have a separate agreement which governs.

<https://www.insight.com/terms-and-policies>

Indianola Municipal Utilities
Resolution 2024-

**RESOLUTION AUTHORIZING THE PURCHASE OF A SERVER
FOR THE FIBER DEPARTMENT**

WHEREAS, the Fiber Department desires to purchase a Poweredge R660 Server; and

WHEREAS, after a review of the bids the Fiber Department recommends using Insight to purchase the R660 Server in the amount of \$10,349.33; and

WHEREAS, the Board of Trustees believes it to be in the best interest of Indianola Municipal Utilities to accept the bid from Insight to purchase a R660 Broadcom Server for the Fiber Department.

NOW, THEREFORE BE IT RESOLVED, by the Indianola Board of Trustees that a R660 Broadcom Server shall be purchased from Insight in the amount of \$10,349.33 and the Fiber Department Superintendent is authorized and directed to execute on behalf of Indianola Municipal Utilities the documents required to purchase the items.

Approved this 28th day of October 2024.

Deb White, IMU Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Resolution Approving Policy related to E-Bill Only credit

Recommendation:

Attachments:

1. Ebill Policy
2. Resolution Approving E Bill Only Policy Update

E-Bill Only Credit Policy

The rate of credit for customers who elect to receive bills electronic only “ebill-only” shall be the average cost mailing bills, rounded to the nearest five cents. This rate will be reviewed at least annually.

Example below:

QTY	ITEM CODE	DESCRIPTION	PRICE	AMOUNT
6,679	Normal Stmt Proc	Statements Pulled and Normal Mailed	\$0.310	\$2,070.49
1	Postage - Statements	Postage on #10 Envelopes	\$3,672.503	\$3,672.50
5,206	Insert Stuffing #2	IMU Flyer August 2024; ID #1058	\$0.010	\$52.06
385	FN Stmt Proc	Final Notices	\$0.290	\$111.65
1	Postage - Collections	Postage on #10 Envelopes	\$265.650	\$265.65
5,400	Insert Printing 4c 2x Gloss	IMU Flyer August 2024; ID #1058	\$0.145	\$783.00
2070.49	Printing			
3672.5	Postage			
52.06	Stuffing			
783	Printing			
6578.05	Total Costs			
5206	Bills Mailed			
1.263552	Average Cost			
1.25	Rounded Average Cost			

RESOLUTION 2024-

**RESOLUTION APPROVING THE E-BILL ONLY CREDIT
POLICY AMMENDMENT**

WHEREAS, the Board of Trustees of the Indianola Municipal Utilities has adopted certain policies relating to E-Bill Only Credit; and

WHEREAS, periodically policies are reviewed to see if certain amendments should be adopted; and

WHEREAS, the attached service policy is being presented for update by the Board of Trustees.

NOW, THEREFORE, BE IT RESOLVED by the Board of Trustees of the Indianola Municipal Utilities that the attached E Bill Only Credit Policy for the Indianola Municipal Communications Utilities is adopted.

Passed and approved this 28th day of October 2024.

Chairperson Deb White

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Resolution Approving IMU Project Share Committee Members

Recommendation:

Attachments:

1. Res IMU PROJECT SHARE COMMITTEE
2. Res IMU PROJECT SHARE COMMITTEE

Indianola Municipal Utilities
RESOLUTION NO 2024-

RESOLUTION CREATING IMU PROJECT SHARE COMMITTEE:

WHEREAS, the Board of Trustees of the Indianola Municipal Utilities has deemed it necessary to create a committee for Project Share; and

WHEREAS, the funds from the Project Share account are required to be distributed to IMU customers as selected by committee members; and

WHEREAS, the members selected are as follows:

SUE WILSON, WeLift, Indianola, IA

TARA CLEVELAND, Aging Resources of Iowa Indianola, IA

SARAH DOWNARD, Warren County General Assistance Indianola, IA

ELISHA BROWN, Indianola Municipal Utilities Indianola, IA; and

WHEREAS, these members will remain on this committee until they are replaced by the IMU Board of Trustees as necessary

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Board of Trustees that:

This committee will determine the distribution of Project Share funds on behalf of the IMU Board of Trustees

Passed and approved this 28rd day of October 2024.

Deb White Chairperson

ATTEST:

Monica Thompson, Board Secretary

Indianola Municipal Utilities
RESOLUTION NO 2024-

RESOLUTION CREATING IMU PROJECT SHARE COMMITTEE:

WHEREAS, the Board of Trustees of the Indianola Municipal Utilities has deemed it necessary to create a committee for Project Share; and

WHEREAS, the funds from the Project Share account are required to be distributed to IMU customers as selected by committee members; and

WHEREAS, the members selected are as follows:

SUE WILSON, WeLift, Indianola, IA

TARA CLEVELAND, Aging Resources of Iowa Indianola, IA

SARAH DOWNARD, Warren County General Assistance Indianola, IA

ELISHA BROWN, Indianola Municipal Utilities Indianola, IA; and

WHEREAS, these members will remain on this committee until they are replaced by the IMU Board of Trustees as necessary

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Board of Trustees that:

This committee will determine the distribution of Project Share funds on behalf of the IMU Board of Trustees

Passed and approved this 28th day of October 2024.

Deb White Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: October 28, 2024

Subject: Resolution Approving special council to represent Indianola Municipal Utilities ("IMU" or the "Client") in connection with a denial of insurance coverage

Recommendation:

Attachments:

1. Engagement Letter to Indianola Municipal Utilities
2. Res 2024- authorizing special council to represent Indianola Municipal Utilities ("IMU" or the "Client") in connection with a denial of insurance cov



FINLEY

LAW FIRM

October 21, 2024

SENDER'S EMAIL
jwassenaar@finleylaw.com

VIA EMAIL:

cdesplanques@indianolaiowa.gov

Chris DesPlanques
Indianola Municipal Utilities
210 West 2nd Ave.
Indianola, IA 50125

RE: Insurance Denial – Cincinnati Insurance

Dear Chris:

Thank you for engaging Finley Law Firm, P.C. (the “Firm”) to represent Indianola Municipal Utilities (“IMU” or the “Client”) in connection with a denial of insurance coverage by Cincinnati Insurance.

Scope of Employment

The Firm will represent IMU in connection with a denial of insurance coverage by Cincinnati Insurance. Our billing rate for partners is \$325 per hour; the billing rate for associates is \$250 per hour; and the billing rate for paralegals is \$125 per hour. We may utilize from time to time other attorneys and legal assistants of the Firm as believed appropriate under the circumstances. Legal fees and out-of-pocket expenses will be billed to your firm on a monthly basis for processing.

No retainer is required. We will provide billing statements on a monthly basis, broken down by timekeeper, the nature of the work performed, and the actual time expended; costs and disbursements will be itemized and billed to you.

Termination

You may terminate the Firm’s representation at any time, with or without cause, by notifying the undersigned on behalf of the Firm. If such termination occurs, the original file will be promptly returned to you and the Firm may make copies at its expense if it so chooses. Termination of the Firm’s services will not affect your responsibility for immediate payment of all legal services rendered and out-of-pocket costs incurred in connection with this matter (including an orderly transition of same).

John D. Hilmes

R. Todd Gaffney

Kevin J. Driscoll

Connie L. Diekema

Stacie M. Codr

Robert L. Johnson

Eric G. Hoch

Erik P. Bergeland

Megan Kennedy Marty

Joseph F. Moser

Aaron J. Redinbaugh

Jeffrey R. Kappelman

Abigail L. Wallace

Peter R. Lapointe

Griffin R. Scott

Jacob T. Wassenaar

Regan A. France

Jacob P. Elliott

OF COUNSEL

David C. Craig

Kermit B. Anderson

RETIRED

Thomas A. Finley

Steven K. Scharnberg

The Firm is subject to certain rules of professional responsibility that identifies conduct or circumstances that require or allow the Firm to withdraw from representing you, including, for example, nonpayment of fees or costs when due, misrepresentation, or failure to disclose material facts. If withdrawal ever becomes necessary, the Firm will immediately provide you written notice of its intent to withdraw and will only withdraw in a manner that will not prejudice you. The Firm agrees to be bound by the ethical standards promulgated by the Iowa Supreme Court regarding termination of its services.

Confidentiality

The Firm understands our clients' concern for privacy. The Firm acknowledges that it is and will continue to be bound by professional standards of confidentiality and shall accordingly protect its clients' confidentiality.

In the course of this representation, the Firm may receive non-public information about you. The Firm will not disclose any non-public information about current or former clients, except as expressly or impliedly authorized by its clients to enable the Firm to represent them or as required or authorized by law or other applicable rules governing our professional and ethical conduct as attorneys.

The Firm retains records relating to the professional services that it provides so that it is better able to assist clients with their professional needs and to comply with professional guidelines or requirements of law. In order to guard clients' nonpublic personal information, this will confirm that the Firm maintains physical, electronic, and procedural safeguards that comply with applicable professional standards.

We would also highly recommend that you not destroy, conceal, or alter any paper or electronic files and other data, including any metadata generated by and/or stored on your or the firm's computers and storage media, e.g., hard drives, smart phone, backup tapes, CD ROMs, or any other electronic data, such as email and voice mail. We ask that you preserve all of your emails, both sent and received, whether internally or externally; all word processed files, including drafts and revisions; all spreadsheets, including drafts and revisions; all databases; all presentation data or slide shows produced by presentation software such as PowerPoint; all data generated by calendaring, task management and personal information management (PIM) software (such as Microsoft Outlook or Lotus Notes); all data created with the use of personal data assistants (PDAs) and smart phones, such as iPhone, iPad, tablets, Blackberry, Androids, or other pocket PC devices, including any text messages or instant messages; all documents created with a document management software; and all backup tapes and the software necessary to reconstruct the

data on those tapes, so there can be made a complete, bit-by-bit “mirror” evidentiary image copy of the storage media of each personal computer and/or workstation and network server in the firm’s or your control and custody, whether currently in use or no longer in service. In order to assure that your obligations to preserve documents and things will be met, please forward a copy of this letter to all persons and entities with custodial responsibility for the items referenced above.

Disputes/Governing Law

Our attorney-client relationship will be governed by Iowa law and the Standards for Professional Conduct. Any legal actions between the Firm, or any professional acting on behalf of the Firm, and you arising out of or related to services provided by the Firm for you shall be governed by Iowa law.

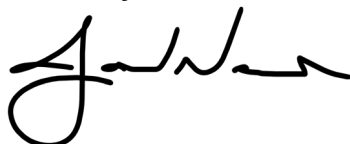
If the terms of this engagement letter are satisfactory to you, please sign and return to the undersigned a copy of this letter and retain a copy for your files. If you have any questions or concerns, please feel free to contact the undersigned at any time.

Thank you for considering our firm in this matter. We look forward to the opportunity to serve as counsel for you.

Sincerely,



Kevin J. Driscoll



Jacob T. Wassenaar

JTW

Chris DesPlanques for
Indianola Municipal Utilities

INDIANOLA MUNICIPAL UTILITIES
RESOLUTION NO. 2024-

**RESOLUTION AUTHORIZING FINLEY LAW FIRM TO REPRESENT
INDIANOLA MUNICIPAL UTILITIES IN CONNECTION WITH A DENIAL OF INSURANCE
COVERAGE**

WHEREAS, the Indianola Municipal Utilities Board of Trustees deems it necessary to retain legal counsel in connection with a denial of insurance coverage; and

WHEREAS, the Board of Trustees believes it to be in the best interest of Indianola Municipal Utilities to accept the proposal for legal counsel from Finley Law Firm at a rate for partners of \$325 per hour, associates of \$250 per hour and for paralegals of \$125 per hour.

NOW THEREFORE BE IT RESOLVED that the Indianola Municipal Utilities Board of Trustees authorizes Finley Law Firm to provide legal Services for Indianola Municipal Utilities in connection with a denial of coverage. .

Passed and approved this 28th day of October 2024.

Deb White Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: October 28, 2024
Subject: Discussion of the IMU Strategic Plan

Recommendation:

Attachments: 1. Strategic Plan Update 102024 Update



STRATEGIC PLAN UPDATE

IMU BOARDROOM

OCTOBER 28, 2024

INDIANOLA MUNICIPAL UTILITIES



Electric • Communications • Water



ELECTRIC

INDIANOLA MUNICIPAL UTILITIES



Electric • Communications • Water

ELECTRIC STRATEGIC PLAN

Goal 1:

IMU is a leader in providing electric reliability, safety, and renewable energy. IMU is committed to offering reliable, safe delivery and affordable power to our community.

1.1 IMU provides reliable distribution of electricity – Undergrounding, Maintenance and Improvements

2024 Projects

Downtown/1st Street Undergrounding – In progress/Continues

K Street - Substantially Complete

Solar Field - Construction Starting

ELECTRIC STRATEGIC PLAN

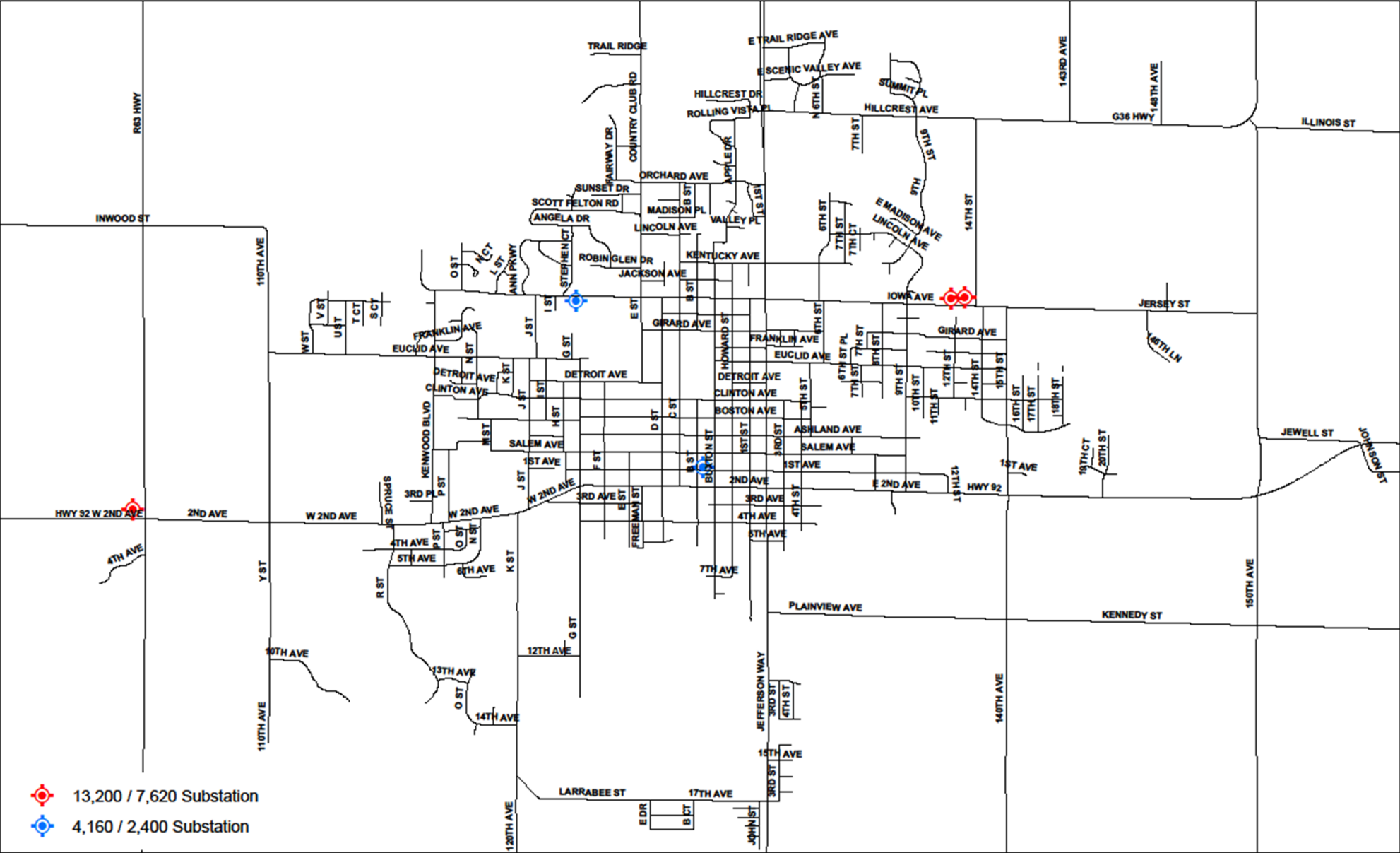
Goal 6:

A future employee pipeline is nurtured and encouraged.

6.1. Continue apprenticeship program

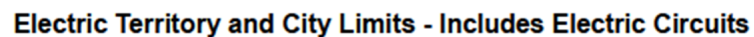
- Four new entrants into program
- Offering schools tours and promoting IMU at High School

ELECTRIC STRATEGIC PLAN

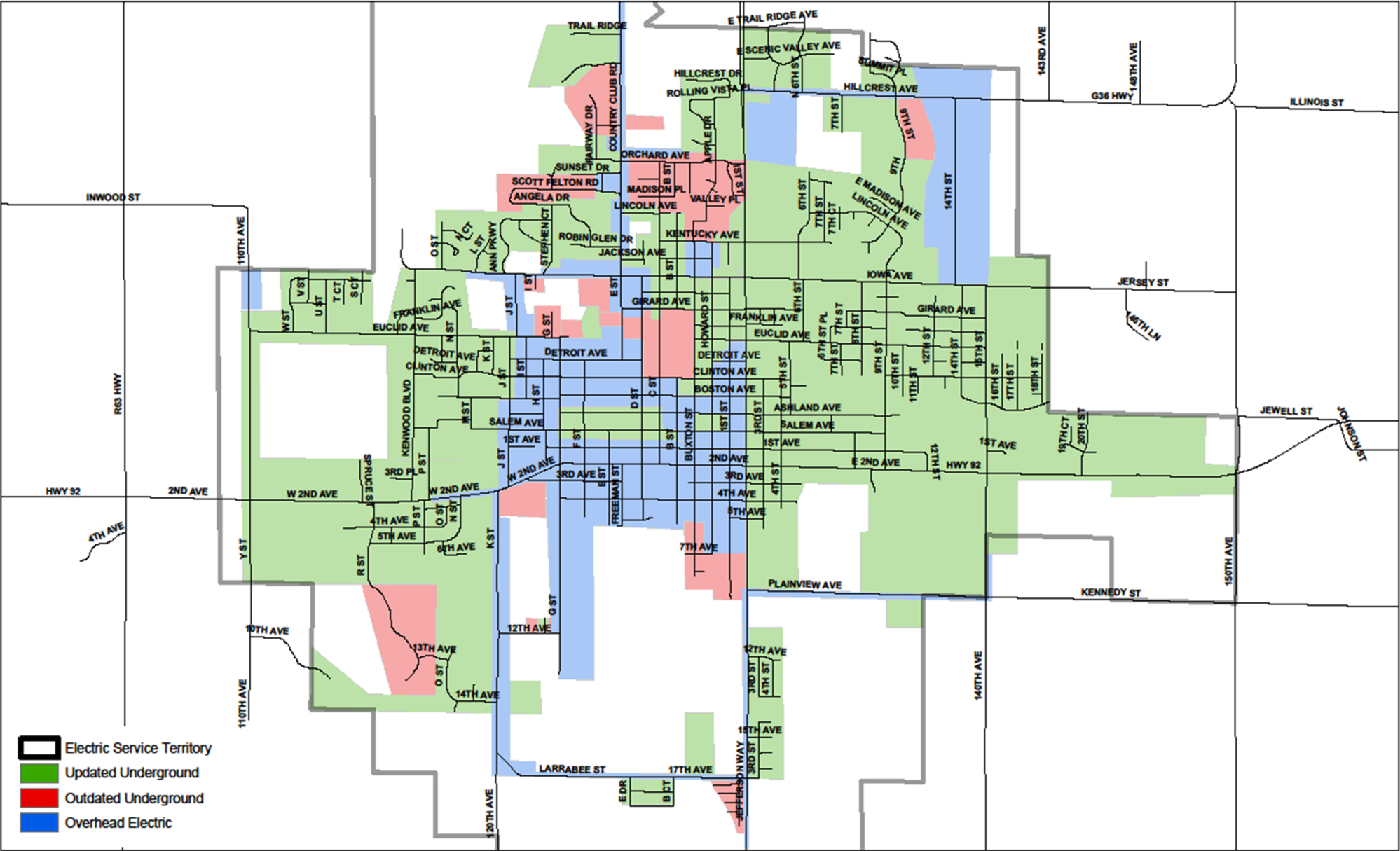


Substations

INDIANOLA MUNICIPAL UTILITIES
IMU
Electric • Communications • Water



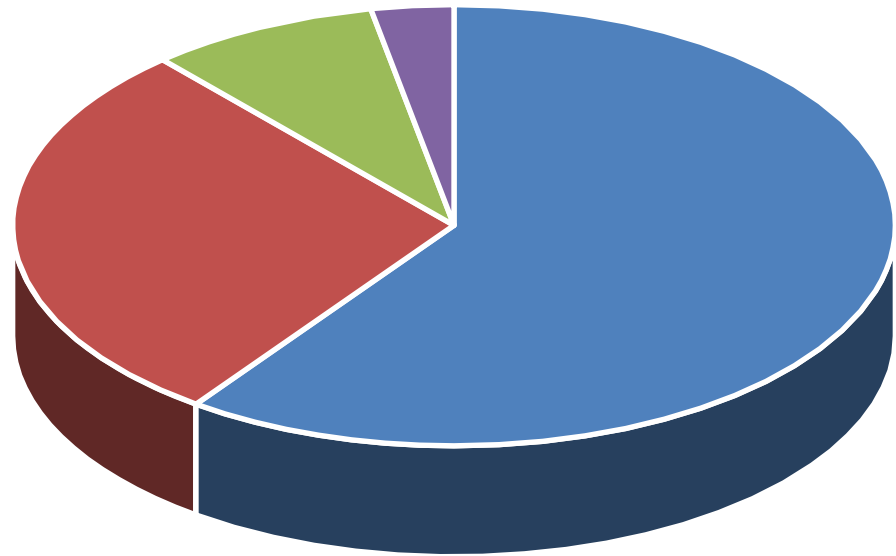
ELECTRIC STRATEGIC PLAN



Electric System Underground and Overhead Areas

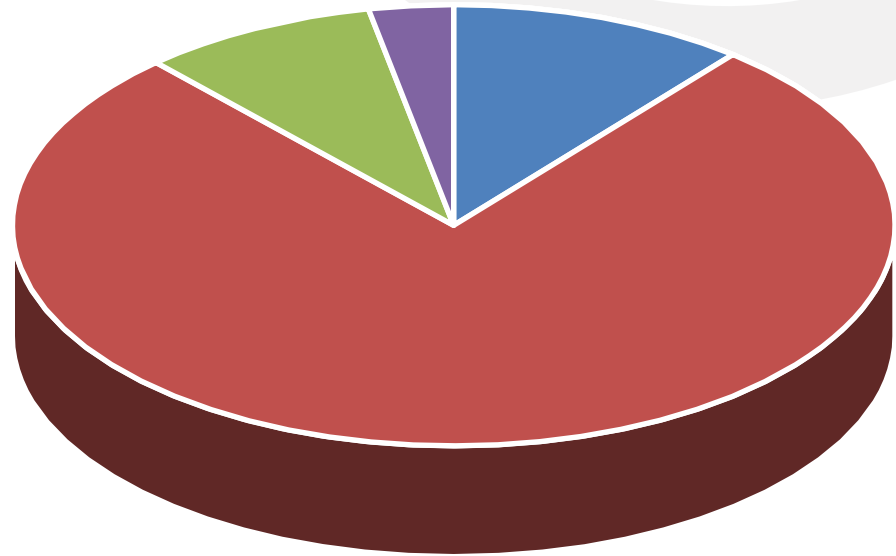
LED STREET LIGHT CONVERSION

2021



■ 150 Watt HPS ■ 70 Watt LED ■ 108 Watt LED ■ 160 Watt LED

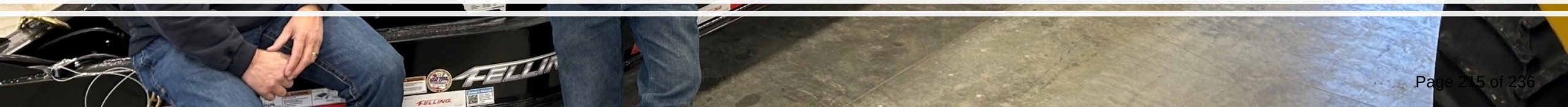
2024



■ 150 Watt HPS ■ 70 Watt LED ■ 108 Watt LED ■ 160 Watt LED



Directional Drilling



PROJECTS

1-Year

- **Solar Field Project - \$160,000 – Transformers, air-break switch and primary cables acquired, installation remains**
- ~~▪ **Turbine 8 Controls - \$700,000**~~ ✓✓ **Substantially Complete – Air emissions testing remains**

3-Years

- **Downtown Conversion - \$400,000 Plus Electrician Work – Contracts issued for 2 of 4 sides of Downtown, 1 of 4 complete**
- ~~▪ **Hillcrest Project - \$100,000**~~ ✓✓ **Substantially Complete – Install remaining roadway lights for the City**
- **K Street Project - \$150,000 – Project scope changed, minimal work to be completed once the road opens back up**
- **East Iowa Substation Breaker Project - \$606,000 Contracts for equipment issued (over 1 year to receive), labor will be contracted when equipment arrives**
- **1st Street Conversion - \$250,000 – 2026 Project**
- **LED Street Lights – \$50,000 – Majority of town converted - 180 lights remain**
- **SCADA Control Upgrade – \$200,000 Exploring options**
- **69 kV Relays - \$360,000 – Just bid out with completion by June 30, 2025**

5 - 10 Years

- **South 92 and North 92 Project - \$700,000 to \$800,000 per year – Initial planning and engineering complete; Project to begin after Downtown and 1st St completion**

Repetitious

- **Transmission Line Poles - \$175,000**
- **Substations/Turbines - \$80,000**
- **Meter Replacements – \$46,000**

WATER



INDIANOLA MUNICIPAL UTILITIES



Electric • Communications • Water

WATER

Goal 2:

IMU's water utility is proactively upgrading infrastructure to maintain high quality water and sufficient water pressure for existing and expanding connections.

- 2.1 Improve the water distribution system by replacing aging lines.
- 2.2 Continue to maintain and upgrade the water plant, water treatment and production equipment. Life span of these assets can be extended with appropriate thoughtful maintenance
- 2.3 IMU maintains healthy water infrastructure by following operational plan to conduct annual maintenance of distribution, meters and other equipment. Life span of these assets can be extended with appropriate thoughtful maintenance

WATER

Goal 2:

IMU's water utility is proactively upgrading infrastructure to maintain high quality water and sufficient water pressure for existing and expanding connections.

- 2.1 Improve the water distribution system by replacing aging lines.
- 2.2 Maintain and upgrade the water plant
- 2.3 Annual maintenance of distribution, meters and other equipment

2024 Progress

- Water Main Replacement
- Water Plant Upgrades

5 Yr Capital Improvement Plan Main Replacement

- N 6th Pl – E Franklin to N 8th and N 7th – E Girard to N 8th.
 - 5 Blocks of 4" CI.
- N H St. from W Boston to W Detroit and W Clinton from N I St. to N G St.
 - 1 Block of 6" CI and 3 Blocks of 4" CI
- W Detroit from N G St. to N J St. and N J St. from Detroit to W Euclid. Transfer Services on W Euclid and Eliminate a Dual Main.
 - 5 Blocks of 4" CI
- W Clinton from N G St. to N D St. Transfer Services on W Clinton and Eliminate a Dual Main.
 - 4 Blocks of 4" CI
- S 1st St. from E 4th Ave to S Jefferson Way.
 - 5.5 Blocks of 6" CI

WATER

Projects 24-25

- Filter media testing and replacement - Engineering reviewed and approved specs; Vote on awarding contract tonight
- Roof upgrades on plant and garage – Spring project (as funds allow)
- Lime Silo sandblasted and painted-Engineering contract vote tonight
- Standby generator-Engineering contract vote tonight
- West Clinton Howard to Buxton main replacement, with City – City has awarded Project, expected completion in 2024
- North K water main project from West Clinton to West Euclid – likely cancelled due to other project costs
- 500 blk of E 3rd Ave (main project)- engineering in progress, will be a possible spring project as funds allow

WATER

5 Yr Capital Improvement Plan

Plant/Wells/Towers

- Security – Will have fence for security with solar farm, look into security cameras or alarm system.
- Plant control upgrades – Continue to replace and upgrade plant controls.
- Water towers inspected and cleaned/clear well inspected and cleaned.
- Water meters – Continue to replace and update water meters.
- Hydrants and Valves – Replace aging valves and hydrants.
- DNR regulations and testing – Continue to keep up with DNR standards and additional testing.
- Pull Well #10 and inspect and replace.

COMMUNICATIONS



INDIANOLA MUNICIPAL UTILITIES



Electric • Communications • Water

COMMUNICATIONS

Goal 3:

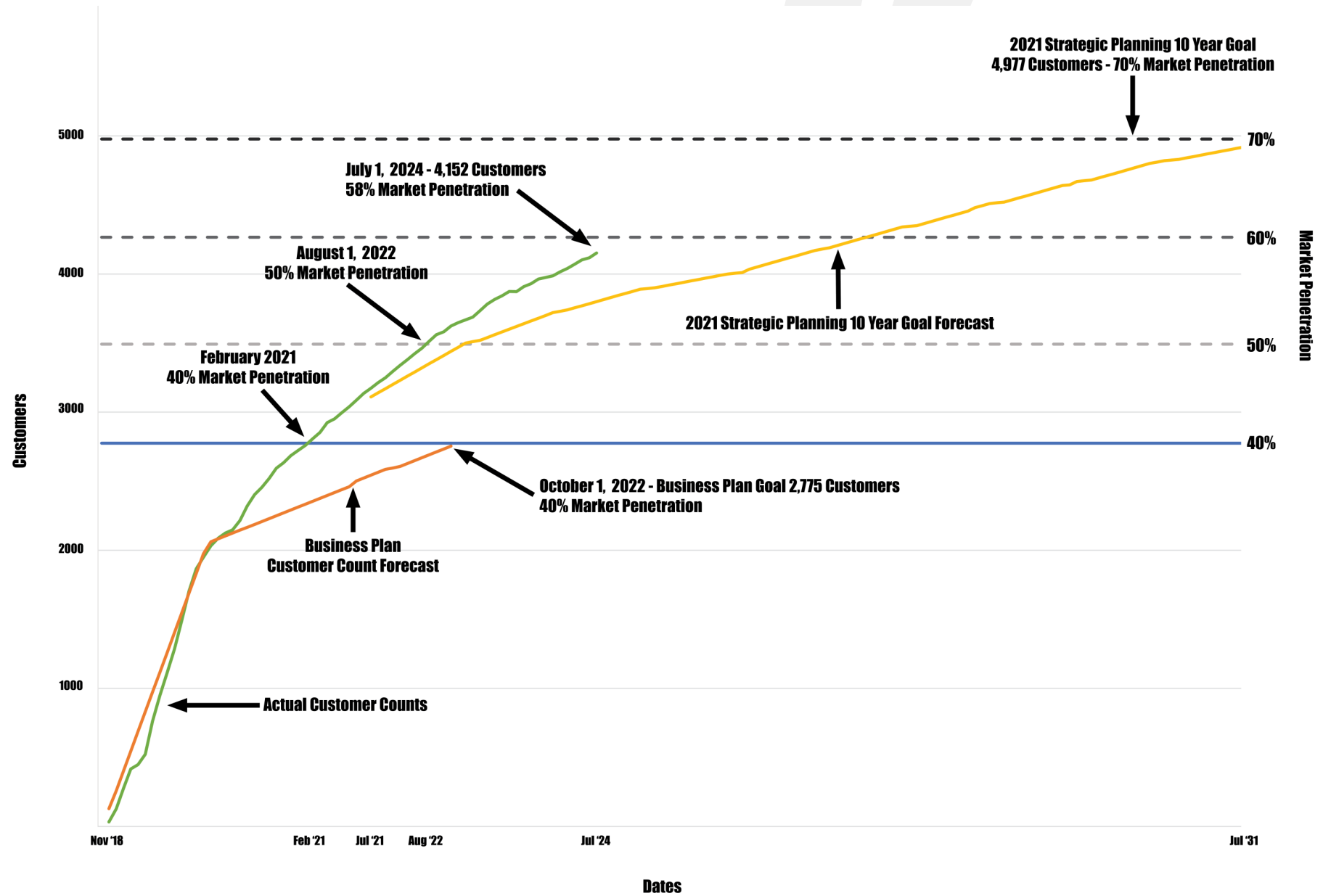
IMU's communication utility is serving more customers.

- 3.1 Expand customer base within Indianola- **Continues at greater than 30 new customers a month**
- 3.2 Explore financially feasible options for expansion beyond Indianola (ROI positive) – **In Progress**
- 3.3 Prepare for increasing customer speed and capacity demand (e.g. Wi-Fi 6, TV Streaming) - **In Progress**

IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy	Timeline	July 23	July 24	Per	Progress
Expand Customer Base Within Indianola 70% Market Penetration 10 Years	FY24	4,000	4,152	58%	4,152 Customers at the End of FY 2023 Increase of 280 Customers from 2023 Current Market Penetration at 58% Increase from 55% in 2023
	FY25	4,150	4,350	61%	
	FY26	4,275	4,525	64%	
	FY27	4,400	4,675	66%	
	FY28	4,525	4,800	68%	
	FY29		4,925	69%	
	FY30		5,050	71%	

Based on 7,110 Potential Subs



IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy	Timeline	Progress
Explore Financially Feasible Options for Expansion Beyond Indianola – ROI Positive	First Projects in FY23	NOFA 7 North Project Completed 11 Customers with Service – 29% Phase 2 NOFA 7 South Project Completed Customer Installation began June 24 7 Customers with Service – 32% NOFA 7 South Project Planned for Completion in FY26 NOFA 7 South Project Started October 2024

IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy	Timeline	Progress
Prepare for Increasing Customer Speed and Capacity Demand	Redundant Transport Capacity at 20 Gbps by 2023	Construction Completed on the IMU/Pella Route
	Redundant Transport 40 Gbps by 2025	OTN Equipment Turned Up and Functioning – Multiple Redundant Paths Now Available
	Offer Consumers Speeds in Excess of 1 Gbps in 2025	XGS-PON in Testing Phase Service Rollout Anticipated for FY2025

IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy	Timeline	Progress
Employee Development, Training, Cross Training	Ongoing	Fiber Employees Attended Calix Connections in Las Vegas IAMU Broadband Conference in Des Moines.

Goal/Strategy	Timeline	Progress
Provide Consultations for Other Utilities in All Core Service Areas	As Requested	Waterloo Only New ISP

IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy

**Provide Sponsorships
for Events as Allowable**

Timeline

**As
Requested**

**Seek
Opportunities
in FY25**

Progress

**Renewed IHS Scoreboard
Marketing Opportunity**

Homecoming Parade

Library Trunk or Treat

Chamber Pre-Party Sponsorship

Simpson College Athletics (planned)

12 TO 24 MONTH FOCUS

Staffing

Locating

New Tech Position has
Reduced Pressure While
Maintaining Install Levels

Need for Additional
Engineering Position
28hr to 40hr Position

Projects

MDU's

XGS-PON – **In Progress**

NOFA 7 South - **Started**

Streaming TV

NOC Remodel – Phase 2- **Completed**

POP Improvements (ICN) -
Researching

Aging CPE

Capital Purchases

³/₄ Ton Truck - Purchased
Engineering Vehicle

¹/₂ Ton Truck
Small Vac

FCC/ FTC Regulation

Chevron Deference Ruling

EAS Cybersecurity

Net Neutrality

Digital Discrimination

Bulk Billing Rules

Broadband Labeling Completed

ADMINISTRATIVE



INDIANOLA MUNICIPAL UTILITIES



Electric • Communications • Water

ADMIN

Goal 4:

IMU will explore investment opportunities as they arise.

- **4.1** IMU will be involved in State and Regional Municipal Utility associations to identify potential investment opportunities – **CAPEX and similar opportunities evaluated as the continue**

Goal 5:

To increase employee retention while improving productivity and quality of customer service.

- **5.1** Employee development, training, cross training, apprenticeship training and certifications.
- **In progress/continues**
- **5.2** Employee Recruitment and Retention; attend job fairs and increase public outreach targeting most imminent skillsets needed - **Compensation and Classification study**
- **5.3** Host IMU employee recognition events and partner with City for various events (bowling, golf...) include years of service and customer acknowledgements

ADMIN

Goal 7:

IMU customers are aware of the Utility's services, programs and performance.

- **7.1** Develop a plan that will drive communications (determine audiences, messages and methods) – **Gradient 9 contract, monthly updates and newsletter**
- **7.2** Encourage/enable staff and trustees to be more visible in local organizations (e.g. Lions) as members and/or speakers - **Rotary presentation, Lions club membership**
- **7.3** Provide sponsorships for events as allowable and activities, support community decorating efforts (install holiday lights, banners, etc.) – **Planning underway for 2024 Holiday lights**
- **7.4** Partner with community assistance and other organizations to help families with energy efficiency and conservation efforts (e.g. LIHEAP, local nonprofits, rebate programs)
 - **Annual Contract signed**
 - **Rebate Programs reviewed and updated as recommended**
 - **More teamwork and communication with local nonprofits**

ADMIN

Goal 8:

IMU remains fiscally responsible to our customer owners while maintaining a financially sustainable business.

8.1 Set annual budgets with capital planning in mind. CIP budget for next year in progress

8.2 Work with City staff to develop infrastructure replacement plans

- Regular meetings with city staff

8.3 Strategic Plan will be annually reviewed Meeting July 18, 2024



THANK YOU
