

**COMMONWEALTH OF KENTUCKY
BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION**

In the Matter of:

Electronic Application of Jackson Purchase)	
Energy Corporation for a Certificate of)	
Public Convenience and Necessity)	Case No. 2024-00013
Authorizing the Installation of a New)	
Advanced Metering Infrastructure (AMI))	
System)	

JACKSON PURCHASE ENERGY CORPORATION'S VERIFIED RESPONSE TO
COMMISSION STAFF'S FIRST REQUESTS FOR INFORMATION
ENTERED MARCH 8, 2024

Comes now Jackson Purchase Energy Corporation (Jackson Purchase), by counsel, and does hereby tender its Verified Response to Commission Staff's First Request for Information entered March 8, 2024.

Entered March 25, 2024.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application of Jackson)	
Purchase Energy Corporation for a)	
Certificate of Public Convenience and)	Case No. 2024-00013
Necessity Authorizing the Installation of)	
New Advanced Metering Infrastructure)	
(AMI) System)	

VERIFICATION OF TRAVIS SPICELAND

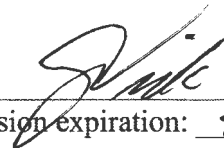
COMMONWEALTH OF KENTUCKY)
)
 COUNTY OF McCracken)

Travis Spiceland, Vice-President Engineering of Jackson Purchase Energy Corporation, being duly sworn, states that he has supervised the preparation of his Responses to Commission Staff's First Requests for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

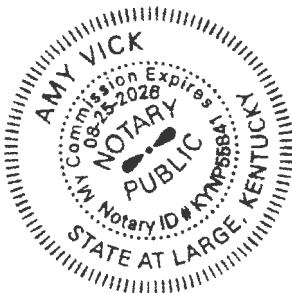


 Travis Spiceland

The foregoing Verification was signed, acknowledged and sworn to before me this 22nd day of March, 2024, by Travis Spiceland.



 Commission expiration: 8-25-2026



Jackson Purchase Energy Corporation
Case No. 2024-00013
Commission Staff's First Request for Information

Request 1: Refer to the Application, page 5. Provide all the documents provided to Jackson Purchase's Board of Directors discussing the need to replace the current AMI system and the documents discussing the recommended and selected AMI system over all other vendor bids received.

Response 1: The documents presented to the Board of Directors are provided in Exhibit A of this data request.

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Request 2: Refer to the Application, Exhibit 8. Explain whether each of the benefits to the end user will be available with every meter upon installation. If not, explain why not and which attributes will be available.

Response 2: The ability to remotely connect and disconnect will not be available on form 9S and 16S meters. These meter forms are used for three phase accounts and accounts requiring current and potential transformer metering. For these two types of meter forms, reconnect/disconnect collars are not available for purchase. This will also prohibit members with these types of meters from participating in prepay. These two meter forms account for approximately 4% of the total meters to be replaced. All other benefits referenced in the exhibit will be available or capable at every meter.

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Request 3: Refer to the Direct Testimony of Travis Spiceland (Spiceland Direct Testimony), page 3.

a. Provide the vendor and meter evaluation documents received in response to Jackson Purchase's request for proposal.

b. Provide a full comparison of the pros and cons between the PLC AMI system and the proposed RF AMI system. Include in the response whether there are attributes of the Aclara RF AMI system that make it better suited with respect to DSM and energy efficiency programs.

Response 3(a): All vendor and meter evaluation documents received in response to Jackson Purchase Energy's RFP are included in Exhibit B.

Response 3(b): The following are pros and cons of both systems:

PLC System Pros

- Uses existing system neutral to transfer communication signal to collecting stations.
- No radio frequency interference.

PLC System Cons

- Lack of communication with meters fed by underground conductor.
- No redundancy.
- The interval data is transmitted daily, not hourly.

- Member's electrical loads can negatively affect communication abilities of the meter.
- Unreliable remote disconnect/reconnect functionality.
- No battery backup at collector locations.
- Meters incapable of last gasp notification in the event of power failure.

RF System Pros

- Licensed RF frequency to eliminate signal interference.
- Redundant communication paths to limit failure of transmissions.
- Data is available at five (5), fifteen (15), thirty (30), and sixty (60) minute intervals.
- Reconnect/disconnect collars on all 1S and 2S meters.
- Meters capable of last gasp notification in the event of power failure.
- Members will have the option to enroll in prepay billing program.
- Outdoor lighting control capabilities.
- Meters will have phase detection capability which will allow Jackson Purchase to better maintain and operate its system.
- Reduced operations and maintenance cost over current PLC system
- Cellular or fiber backhaul option for data transmission to headquarters.

RF System Cons

- Battery backup replacement must be done every 5 years.
- Pole replacements needed at DCU sites for antenna height.

The capabilities of the Aclara RF system will be better suited for demand side management ("DSM") and energy efficiency measures. The interval data that can be provided by the meter will allow demand response programs to be explored while also providing members with near real time usage information regarding electrical consumption. This information will allow members to manage energy more efficiently.

**Jackson Purchase Energy Corporation
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Request 4: Refer to the Spiceland Direct Testimony, page 3.

- a. State the number of PLC AMI meters in the field currently.
- b. For the current PLC AMI system, provide and explain the causes of the increasing failure to receive monthly billing reads over time.
- c. For the current PLC AMI system, explain the continued deterioration of read rates over time.

Response 4(a): There are approximately 29,435 PLC AMI meters currently in the field.

Response 4(b): Our PLC AMI system communicates via a 12.5 kHz signal along the distribution system neutral. Communication integrity is diminished when non-linear member electrical loads introduce harmonics into the system. This is the case of motors equipped with variable speed drives, magnetic core devices, and various electronics such as inverters, converters, and computers. Harmonics, which distort the signal, are ever changing as loads start and stop throughout the system. This makes troubleshooting extremely difficult, time consuming, and costly.

Response 4(c): In addition to signal distortion, the age of the PLC system has provided challenges in finding adequate support for the product. Personnel responsible for the PLC system installation are no longer with Jackson Purchase. The PLC manufacturer struggles to provide the support

needed for Jackson Purchase to adequately maintain the system.

The continued demand for underground electric lines has contributed to deterioration of read rates. Communication through the concentric neutral of underground cabling causes signal distortion and failure of meters to communicate properly. The signal distortion from underground electric lines will not be a factor with RF meters.

Please see Exhibit C for the read rate trend over the past five (5) years.

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Request 5: Refer to the Spiceland Direct Testimony, page 3.

- a. Describe the troubleshooting attempts made by Jackson Purchase, the PLC AMI vendor, or manufacturer.
- b. Provide any documents related to these troubleshooting attempts, including, but not limited to, correspondence and reports.
- c. Provide any explanations given by the PLC AMI vendor or manufacturer for the degradation of the system.

Response 5(a): Jackson Purchase has made numerous troubleshooting attempts for the issues with the PLC AMI meters. These attempts have consisted of repeater replacement, installation of additional blocking capacitors, CCU replacements, meter route alterations, and software upgrades. Eaton, the manufacturer, has provided onsite troubleshooting that included a headend upgrade to the newest software version, removal of duplicate gateways within the network manager, and route adjustment for meter communication.

Response 5(b): Exhibit D of this data request contains a list of service orders completed by Jackson Purchase for AMI maintenance and troubleshooting for 2019 through 2024. Prior to 2019, AMI service orders were not tracked by type. Exhibit D also contains correspondence from the manufacturer and a table containing the past 14 months of manual meter reads required.

Response 5(c): The PLC vendor has acknowledged the following degradation factors:

- Signal interference due to undergrounding of electric lines; and
- Signal interference due to member electrical loads.

Both factors contribute to the failure of meters to communicate properly.

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Request 6: Refer to the Spiceland Direct Testimony, page 3. Explain the current sources of replacement parts for the PLC AMI system and why procuring replacement parts is becoming more difficult.

Response 6: Jackson Purchase currently orders replacement parts direct from Eaton. Lengthy lead times have made, and continue to make, obtaining meters extremely difficult. Non-AMI meters were purchased to fill the immediate need during the wait for PLC meters. In addition, certain communications equipment is now obsolete which has led to increased replacement costs. For example, CCU-711 parts were discontinued in 2019 which prohibited repair of this infrastructure. The replacement unit, a CCU-721, was then required to replace the obsolete unit which led to a significant increase in cost. This led Jackson Purchase to procure retired infrastructure from another utility to keep maintenance costs to a minimum.

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Request 7: Refer to the Spiceland Direct Testimony, pages 3-4. Explain the need for enhanced “interval data in the capacity needed for ongoing and upcoming energy demands.” Explain where there is any market for salvage value of the current PLC AMI meters.

Response 7: Jackson Purchase has determined that at a minimum, hourly interval data is needed to adequately meet the needs of its members moving forward. This data is needed to assist members with usage inquiries, high bill investigations, and overall energy efficiency measures. In addition to member requests, interval data is needed for various engineering studies, demand response measures, and load control programs.

No market for used PLC meters has been found at this time.

**Jackson Purchase Energy Corporation
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Request 8: Refer to the Spiceland Direct Testimony, page 4.

- a. State the useful life of the Aclara Technologies AMI meters as advertised by the vendor and as experienced in the field by other utilities.
- b. State the useful life upon which Jackson Purchase will base its proposed depreciation rate for the Aclara RF AMI meter.

Response 8(a): Aclara Technologies advertises a 20-year useful AMI meter life. Jackson Purchase is unaware of the useful life experienced in the field by other utilities.

Response 8(b): Jackson Purchase proposes a 15-year useful life to depreciate the Aclara RF meters, consistent with the current meter depreciation schedule.

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Request 9: Refer to the Spiceland Direct Testimony, page 4.

- a. Describe the bid process for selecting a meter replacement contractor.
- b. Provide all bid documents received from meter replacement contractors and all bid evaluation documents generated by Jackson Purchase.

Response 9(a): AMI vendors were encouraged to submit pricing for meter replacement along with their AMI solution. Aclara submitted pricing through Advanced Meter Services, its meter replacement contractor. As part of the RFP process, Jackson Purchase also sent a request for bids to both Quality Resources LLC and Luthan Electric Meter Testing. Recipients could bid on all or parts of the project. Both Quality Resources and Luthan Electric Metering Testing bid on the meter replacement portion. Quality Resources, the low-cost bidder, was selected for this portion of work.

Response 9(b): Please see Exhibit B of this data request for bid documents received from meter replacement contractors. The evaluation for selection was based on replacement cost per meter.

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Request 10: Refer to the Spiceland Direct Testimony, page 5.

- a. Confirm that Jackson Purchase will be replacing all of its PLC AMI meters with the Aclara RF AMI meters over the 2024-2025 period. Include in the response after the Aclara RF AMI meters are installed, whether there will be any residential customers or small commercial class customers without the RF AMI meters.
- b. Provide the estimated bill impacts for the average residential customer.
- c. Explain the approximate timeline for Jackson Purchase intends to file an application for financing with the Commission.

Response 10(a): Jackson Purchase plans to replace all PLC AMI meters with Aclara RF meters by the end of 2025. After the replacement process, all residential and small commercial customers will have an RF AMI meter.

Response 10(b): Jackson Purchase estimates that the cost of the new AMI system will be approximately \$6.5 million, which will be capitalized and depreciated over a period of 15 years. It is estimated that the annual operating expense of the new AMI system will be approximately \$30,000 less than the existing AMI system, which will help to offset some of the cost of implementing the new system. The project will be funded through Jackson Purchase's work plan

with RUS, so no immediate material impact to residential or small commercial class rates is expected due to this project.

Response 10(c): Jackson Purchase has included this AMI project in its 2024-2027 work plan funded by RUS, therefore an application for financing with the Commission will not be necessary.

Exhibit A

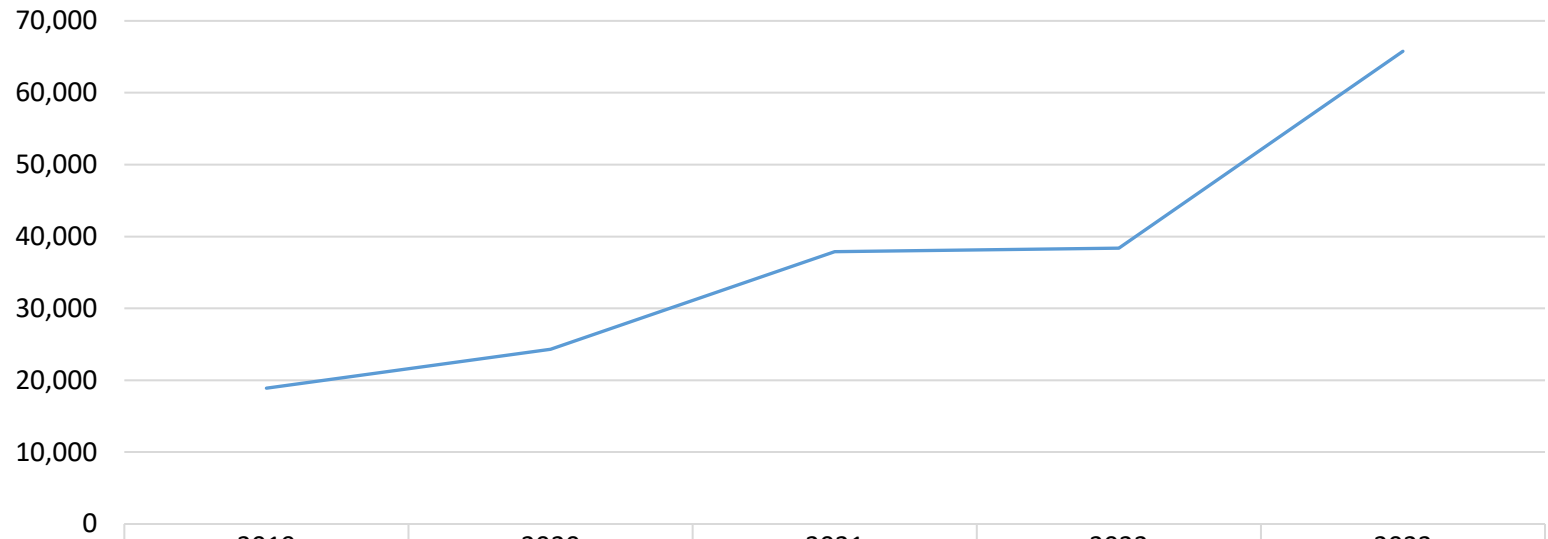
Entirety of Exhibit A Filed Under Seal

Exhibit B

Entirety of Exhibit B Filed Under Seal

Exhibit C

Manual Meter Reads



	2019	2020	2021	2022	2023
Meters Read	18,897	24,302	37,883	38,360	65,774

Exhibit D

Date	Service Type Description	Source #	Service Address	General Comments	Task Remarks
09/04/2019 12:00 AM CDT	AMI Maintenance	19016437	[REDACTED]	Test Repeater 801-272872 for AMI Communication	
10/09/2019 12:00 AM CDT	AMI Maintenance	19018844	[REDACTED]	Test meter for AMI communication	AMI Communication Testing
10/09/2019 12:00 AM CDT	AMI Maintenance	19018846	[REDACTED]	Test AMI Communications	AMI Communication Testing
10/11/2019 12:00 AM CDT	AMI Maintenance	19019093	[REDACTED]	Test Meter for Cycle 5 AMI Communication Needs coupling capacitor on PT. PT located in Transclosure. Will need outage for installation. KB 10/11/19	
10/17/2019 12:00 AM CDT	AMI Maintenance	19019283	[REDACTED]	Test meter for Cycle 5 AMI communication	
10/17/2019 12:00 AM CDT	AMI Maintenance	19019284	[REDACTED]	Test meter 900125JP for Cycle 5 AMI communication	Test meter 900125JP for Cycle 5 AMI communication
10/17/2019 12:00 AM CDT	AMI Maintenance	19019285	[REDACTED]	Test meter 76859909 for Cycle 5 AMI communication	Test meter 76859909 for Cycle 5 AMI communication
10/17/2019 12:00 AM CDT	AMI Maintenance	19019288	[REDACTED]	Test meter 300095JP for Cycle 5 AMI communication	Test meter 300095JP for Cycle 5 AMI communication
10/17/2019 12:00 AM CDT	AMI Maintenance	19019289	[REDACTED]	Test meter 100198JP for Cycle 5 AMI communication	Test meter 100198JP for Cycle 5 AMI communication
10/21/2019 12:00 AM CDT	AMI Maintenance	19019464	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019465	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019466	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019467	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019468	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019469	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019470	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019471	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019472	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019473	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019474	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019475	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019476	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019477	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/21/2019 12:00 AM CDT	AMI Maintenance	19019478	[REDACTED]	Test Cycle 5 meter for AMI communications	Added cap. And was able to read meter
10/22/2019 12:00 AM CDT	AMI Maintenance	19019580	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/22/2019 12:00 AM CDT	AMI Maintenance	19019581	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/22/2019 12:00 AM CDT	AMI Maintenance	19019582	[REDACTED]	Test Cycle 5 meter for AMI communications	Tested AMI communications with meter 200037JP. New meter did not communicate with Yukon. KB 1-15-2020
10/22/2019 12:00 AM CDT	AMI Maintenance	19019583	[REDACTED]	Test Cycle 5 meter for AMI communications	Created meter change and replaced with meter 92610263 and known good AMI module. Meter read via Yukon. KB 1-15-20
10/22/2019 12:00 AM CDT	AMI Maintenance	19019584	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/22/2019 12:00 AM CDT	AMI Maintenance	19019585	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/22/2019 12:00 AM CDT	AMI Maintenance	19019586	[REDACTED]	Test Cycle 5 meter for AMI communications	

10/22/2019 12:00 AM CDT	AMI Maintenance	19019587	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/22/2019 12:00 AM CDT	AMI Maintenance	19019588	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/22/2019 12:00 AM CDT	AMI Maintenance	19019589	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019837	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019838	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019839	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019840	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019841	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019842	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019843	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019844	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019845	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019846	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019847	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019848	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019849	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019850	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019851	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019852	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019853	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019854	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019855	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019856	[REDACTED]	Test Cycle 5 meter for AMI communications	
10/24/2019 12:00 AM CDT	AMI Maintenance	19019857	[REDACTED]	Test Cycle 5 meter for AMI communications	
					Replaced PT. AMI is not currently working on meter but meter is reading correctly.
					JP300042 78613812
					80x multiplier 001 00369 002 000.006 003 000.013
12/13/2019 12:00 AM CST	AMI Maintenance	19022044	[REDACTED]	Rework CT/PT	
01/02/2020 12:00 AM CST	AMI Maintenance	19022660	[REDACTED]	Pole_00026327 possible bad repeater, please check per Kristi R.	Repeater Pinged during testing. Appears to be good
01/30/2020 12:00 AM CST	AMI Maintenance	20003436	[REDACTED]	Repair cable @ AMI_REP_00000014. Behind old battery plant.	Cable end had come off of H field. Repaired
02/05/2020 12:00 AM CST	AMI Maintenance	20004429	[REDACTED]	2 Fuses blown on blocking capacitor at CAP_00000101 behind this acct.	Refused blown capacitor fuses
02/13/2020 12:00 AM CST	AMI Maintenance	20005315	[REDACTED]	Inspect CT meter prior to Elliot pole change.	Elliot will put back what is up when they change pole. Will check again after they finish.

02/20/2020 12:00 AM CST	AMI Maintenance	20005896	[REDACTED]	Repair repeater JOY 801 440142	Obsolete
02/20/2020 12:00 AM CST	AMI Maintenance	20005897	[REDACTED]	Confirm location and repair repeater: Smithland 801 483136	repeater has been taken down. 1 meter is located to this repeater and it has been disabled
02/20/2020 12:00 AM CST	AMI Maintenance	20005898	[REDACTED]	Confirm location and repair repeater: Grand Rivers 801 421371	4/8/20 All pertaining to POLE_00047571: Installed 2 strand from neutral on tap to mainline Put MAC across tap phase and mainline phase. Removed REC and XFMR from C phase line. No changes Repeater Obsolete
02/20/2020 12:00 AM CST	AMI Maintenance	20005899	[REDACTED] E	Repair repeater: Calvert City 902 321648	Retired repeater. Will go with WO#: 20005899. Will contact Rick as far as mapping and Cassidy as far as Yukon.
02/20/2020 12:00 AM CST	AMI Maintenance	20005900	[REDACTED]	Repair repeater: Possum Trot 801 350762	Successfully pinged device upon arrival.
02/20/2020 12:00 AM CST	AMI Maintenance	20005901	[REDACTED]	Repair repeater: Ledbetter 801 461869	
02/20/2020 12:00 AM CST	AMI Maintenance	20005902	[REDACTED]	Repair repeater: Husbands Rd 902 303795. Noisy. May be a loose connection.	Repeater is reading meters. Connections are OK
02/20/2020 12:00 AM CST	AMI Maintenance	20005903	[REDACTED]	Repair AMI: Olivet 850 39544001	Obsolete
02/20/2020 12:00 AM CST	AMI Maintenance	20005904	[REDACTED]	Repair repeater: Little Union 801 272872	Obsolete
02/20/2020 12:00 AM CST	AMI Maintenance	20005905	[REDACTED]	Repair repeater: Lovelaceville 801 14555	Obsolete
02/20/2020 12:00 AM CST	AMI Maintenance	20005906	[REDACTED]	Repair repeater: New York 801 4557	Repeater had an immediat fail of 11. Successful ping on remaining 107/110 meters. Repeater working correctly.
02/20/2020 12:00 AM CST	AMI Maintenance	20005907	[REDACTED]	Repair repeater: Ragland 902 18328	Bad board. Replaced and tuned board. Picked up 60+ meters.
02/21/2020 12:00 AM CST	AMI Maintenance	20006273	[REDACTED]	CAP_00000160 needs repair. 3 fuses out and stingers are disconnected. 1 cutout needs to be replaced. WO# 20006273	

					Changed CAP_0000012.
					Installed:
					Man: Cooper
					S/N: 09UTM74347
					Size: 150KVAR
					CRTD: 6.85
					CACT: 6.84
					DEV: +0.0
					Removed:
					Man: Cooper
					S/N: 08UTP96470
					Size: 100KVAR
					CRTD: .61
					CACT: .6
					DEV: -1.5
02/21/2020 12:00 AM CST	AMI Maintenance	20006275	[REDACTED]	CAP_0000012: 3 phase CAP bank out. Field phase Cap has a broken bushing. 100KVAR	
02/21/2020 12:00 AM CST	AMI Maintenance	20006276	[REDACTED]	CAP_00000172: Fuse out on CAP bank	Fused with 15 amp fuse
02/25/2020 12:00 AM CST	AMI Maintenance	20006332	[REDACTED]	CAP_00000266 field phase fuse out.	Repaired capacitor bank. Refused field phase with 20 AMP Fuse
02/25/2020 12:00 AM CST	AMI Maintenance	20006333	[REDACTED]	CAP_0000077: center phase capacitor missing and jack open. 100KVAR	
02/25/2020 12:00 AM CST	AMI Maintenance	20006335	[REDACTED]	AMI_REP_00000073 Field phase out	Repaired AMI repeater. Refused field phase with 15 amp fuse
02/25/2020 12:00 AM CST	AMI Maintenance	20006336	[REDACTED]	CAP_00000168: Phase out on Cap bank	Repaired capacitor bank. Fused with 15 amp fuse
02/26/2020 12:00 AM CST	AMI Maintenance	20006701	[REDACTED]	CAP_00000145 Out. Center and field phases are out. Load break is broken and needs repair.	
02/26/2020 12:00 AM CST	AMI Maintenance	20006704	[REDACTED]	CAP_00000084 needs repair. Blown arrestor may be causing interference. Change arrestor.	
02/26/2020 12:00 AM CST	AMI Maintenance	20006705	[REDACTED]	CAP_00000226: H field needs to be moved from pole ground to neutral	Moved H field. 17% increase in read on this repeater.
02/26/2020 12:00 AM CST	AMI Maintenance	20006708	[REDACTED]	CAP_00000250 needs repair. 3 phases out	Repaired CAP bank. fused with 15 amp fuses
02/26/2020 12:00 AM CST	AMI Maintenance	20006709	[REDACTED]	CAP_00000353 needs repair. Fuses out.	Repaired CAP bank. fused with 40 amp fuses
02/26/2020 12:00 AM CST	AMI Maintenance	20006710	[REDACTED]	CAP_00000280 needs repair. 3 Phases out.	Repaired CAP bank. 3 jacks were open. Has been put back into service
06/30/2020 12:00 AM CDT	AMI Maintenance	20021027	[REDACTED]	Trouble shoot ami repeater: SMITHLAND 801 482479 at this location	Repeater is operating correctly. Reads 34 of 51 meters as is. 4 meters have been disabled. We found a hot spot for interference at a windstream box with meter number JP003596. Once disconnected we picked up 7 meters leaving 6 off this repeater still not reading when the windstream box is disconnected.
06/30/2020 12:00 AM CDT	AMI Maintenance	20021029	[REDACTED]	High Point station AMI down. Please Repair	Dirt dobber nest tripped breaker to CCU. Repaired and put silicone in holes to prevent problem from happening again.

08/11/2020 12:00 AM CDT	AMI Maintenance	20026136	[REDACTED]	Add 3 Phase repeater to POLE_00019832 to try and pick up Great Oaks	Installed repeater on POLE_00019832. The repeater is named "Z Test Repeater 902" in the database. Successfully pinged 44 of 47 meters in our test file after installation. We were pinged 0 of 47 before. JG 9/2/20
08/11/2020 12:00 AM CDT	AMI Maintenance	20026138	[REDACTED]	Palma CCU is not communicating	Repaired CCU
					Voltage good to repeater. Tried H field and it did not work. Rerouted meters and 2 of the 67 came back. Repeater needs to be changed. JG 8/28/20 Changed repeater. Was able to ping 8 more meters after change. Still unable to ping 57 meters.
08/27/2020 12:00 AM CDT	AMI Maintenance	20027917	[REDACTED]	AMI repeater Lovelaceville 801 14951 has zero reads.	JG 8/29/20
09/24/2020 12:00 AM CDT	AMI Maintenance	20031698	[REDACTED]	Jeremy, please check this location out as soon as you can. The member said they had there breaker off and they still had usage during the months of aril ,may, june, july and august. the usage was only 120 kwh each month. they must have started pumping water in august the usage was 2400 kwh. Let me know what you find--Ward	Emailed findings. CT and PT checked good as well as their connections. Issue was billing related.
10/12/2020 12:00 AM CDT	AMI Maintenance	20034355	[REDACTED]	AMI from sub is down. Please investigate.	Changed outlet, CCU, 1 H field, modem and comms card. Was able to read a 40 meter test file when complete
10/23/2020 12:00 AM CDT	AMI Maintenance	20035897	[REDACTED]	Meter just installed 10/22 but is not reading; replace AMI module in field. Call Jamie to come reprogram meter.	Repaired communications module in meter. 10/23/20 KB
				please check repeater Kevil 902 13087	
11/10/2020 12:00 AM CST	AMI Maintenance	20039429	[REDACTED]	CRM 11-10-20	Repeater checked ok. Was able to communicate with 137 out of 157 meters.
				please check repeater KEVIL CCU	
11/10/2020 12:00 AM CST	AMI Maintenance	20039430	[REDACTED]	CRM 11-10-20	Checked repeater. Was able to communicate with 810 out of 980 meters. Repeater ok.
				please check repeater Little Union 902	
11/10/2020 12:00 AM CST	AMI Maintenance	20039432	[REDACTED]	CRM 11-10-20	Repeater checked out ok.
				please check repeater Little Union CCU	
11/10/2020 12:00 AM CST	AMI Maintenance	20039433	[REDACTED]	CRM 11-10-20	CCU tested ok.
				please check repeater Ragland 902 18328	
11/10/2020 12:00 AM CST	AMI Maintenance	20039434	[REDACTED]	CRM 11-10-20	902 18328 would not communicate and read 0 meters. Replaced repeater and read 28 of 69 meters on route. 11/12/20 KB

				please check repeater Ragland CCU	Replaced 902 repeater. Bobby is sending off the old one for repair.
11/10/2020 12:00 AM CST	AMI Maintenance	20039435	[REDACTED]	CRM 11-10-20	Was able to pick up 28 out of 69 meters.
11/16/2020 12:00 AM CST	AMI Maintenance	20041707	[REDACTED]	please check repeater CULP CCU CRM 11-16-20	Checked CCU. Successfully executed 745 out of 891 meter responses. Repeater is working properly.
11/16/2020 12:00 AM CST	AMI Maintenance	20041709	[REDACTED]	please check repeater Ledbetter 902 461297 CRM 11-16-20	Repeater checked ok. communicating with 449 out of 598 meters.
11/18/2020 12:00 AM CST	AMI Maintenance	20041858	[REDACTED]	AMI down from sub. Investigate.	Breaker in panel was tripped. Reset and AMI came back up.
12/17/2020 12:00 AM CST	AMI Maintenance	20045843	[REDACTED]	AMI Cap Bank needs to be inspected near this account. Fuse blown on cap bank.	Inspected bank and refused capacitor. Everything checked good. Gipson 1/14/21
02/05/2021 12:00 AM CST	AMI Maintenance	21004690	[REDACTED]	A and C phase fuse are blown near this address.	Refused CAP all is good.
03/26/2021 12:00 AM CDT	AMI Maintenance	21016010	[REDACTED]	Fuse out on CAP_00000024 in front of this account	CAP bank re-fused and held. KB 04/15/21
09/17/2021 12:00 AM CDT	AMI Maintenance	21047145	[REDACTED]	Look into Ledbetter CCU, not getting any reads back to office.	System could not communicate with CCU or downline devices. Replaced bad select com module, bad amp set, and bad front end receiver. Testing showed CCU able to read 276 of 403 meters, and communicate with all 902 repeaters when complete. KB 9/17/21
10/13/2021 12:00 AM CDT	AMI Maintenance	21053120	[REDACTED]	AMI CCU is not responding. Please repair.	Replaced bad logic board. Tested by reading substation meter through Yukon. System test good. KB 10/14/21
12/08/2021 12:00 AM CST	AMI Maintenance	21063688	[REDACTED]	Check CCU at Maxon sub per Jason G.	Bad card on CCU outside of Maxon sub. Gipson 12/9/21
05/11/2022 12:00 AM CDT	AMI Maintenance	22029163	[REDACTED]	AMI Cap bank out. Please investigate.	Refused cap bank.
08/01/2022 12:00 AM CDT	AMI Maintenance	22047909	[REDACTED]	Move communications card from Maxon to Palma to fix Palma CCU.	Card is installed at Palma.
08/25/2022 12:00 AM CDT	AMI Maintenance	22052849	[REDACTED]	Check repeater near this account for any repair not reading meters beyond this device.	Replaced H-feild and was able to read meters.
08/25/2022 12:00 AM CDT	AMI Maintenance	22052850	[REDACTED]	Check repeater near this account for any repair needed not reading meters beyond this device.	Replaced H-field and was able to read meters.
08/25/2022 12:00 AM CDT	AMI Maintenance	22052853	[REDACTED]	Check repeater for any repair needed near this account.	Replaced 902 control board, replaced cables, and H-field. Was able to read meters after repairs.
10/03/2022 12:00 AM CDT	AMI Maintenance	22061393	[REDACTED]	Check AMI repeater near this account.	Replaced cable and H-field.
10/05/2022 12:00 AM CDT	AMI Maintenance	22061514	[REDACTED]	AMI repeater is noy working please repair.	Transformer fuse out
10/07/2022 12:00 AM CDT	AMI Maintenance	22063259	[REDACTED]	Check repeater near this account not getting any reads.	Replaced 902 control, cable, and H-field and was able to ping device but reads didnt improve. Met xfinity and disconnected their equipment did not help.
10/26/2022 12:00 AM CDT	AMI Maintenance	22066586	[REDACTED]	Calvert 902 321648 near this account is not producing reads. Please investigate.	This repeater has been moved to Great Oaks subdivision.
10/26/2022 12:00 AM CDT	AMI Maintenance	22066587	[REDACTED]	Culp 902 318085 near this account is not producing reads. Please investigate.	Replaced cable, H field, and 902 card and was able to ping repeater.
10/26/2022 12:00 AM CDT	AMI Maintenance	22066591	[REDACTED]	Freemont 902 306777 near this account is not producing reads. Please investigate.	This repeater is not getting any reads and has had the equipment retired that can be reused the rest is still out in the field. JG 11/2/22

10/26/2022 12:00 AM CDT	AMI Maintenance	22066592	[REDACTED]	Kansas 902 250612 near this account is not producing reads. Please investigate.	Replaced bad cable and H-field
10/26/2022 12:00 AM CDT	AMI Maintenance	22066593	[REDACTED]	LaCenter 902 1054 near this account is not producing reads. Please investigate.	Changed 902 card and H-field was able to get reads.
10/31/2022 12:00 AM CDT	AMI Maintenance	22068020	[REDACTED]	Reprogram meter.	Meter reprogrammed and battery changed 10-28-22. KB 10-31-22
10/31/2022 12:00 AM CDT	AMI Maintenance	22068021	[REDACTED]	Reprogram meter.	Meter reprogrammed and battery changed 10-28-22. KB 10-31-22
10/31/2022 12:00 AM CDT	AMI Maintenance	22068102	[REDACTED]	Change H-field	Complete
10/31/2022 12:00 AM CDT	AMI Maintenance	22068103	[REDACTED]	Replace H field near this account.	Complete
10/31/2022 12:00 AM CDT	AMI Maintenance	22068104	[REDACTED]	Replace H field near this account	Complete
10/31/2022 12:00 AM CDT	AMI Maintenance	22068105	[REDACTED]	Replace H field near this account	Complete
11/09/2022 12:00 AM CST	AMI Maintenance	22070570	[REDACTED]	Two phases out on CAP_00000128 near this account. Please repair.	Changed out 2 bad capacitors.
11/17/2022 12:00 AM CST	AMI Maintenance	22071751	[REDACTED]	Fix repeater near this account. POLE_00041471	Replaced end on coax cable.
11/18/2022 12:00 AM CST	AMI Maintenance	22071833	[REDACTED]	CAP_00000059 in front of this account has all three jacks open. Please investigate and repair.	Changed capacitors and loadbreaks.
12/27/2022 12:00 AM CST	AMI Maintenance	22079083	[REDACTED]	Check CCU inside substation	Bad coax cable going to 810.
01/10/2023 12:00 AM CST	AMI Maintenance	23002103	[REDACTED]	Repair AMI out of substation.	Complete
02/16/2023 12:00 AM CST	AMI Maintenance	23010015	[REDACTED]	Krebs mobile CCU is down please investigate.	CCU is inoperable. We installed the CCU from Olivet for a temp fix.
03/07/2023 12:00 AM CST	AMI Maintenance	23016338	[REDACTED]	Install new CCU for Krebs Sub per JG	CCU is installed
03/16/2023 12:00 AM CDT	AMI Maintenance	23017709	[REDACTED]	Reprogram meter.	Complete
04/13/2023 12:00 AM CDT	AMI Maintenance	23023875	[REDACTED]	Repair 902 repeater from car wreck.----- POLE_00022760 PER DUSTIN C.	Complete
05/08/2023 12:00 AM CDT	AMI Maintenance	23030107	[REDACTED]	Make repair to CCU close to this account.	Power was off to the unit.
06/06/2023 12:00 AM CDT	AMI Maintenance	23037802	[REDACTED]	Fuse is out on repeater please check.	Installed fuse.
06/06/2023 12:00 AM CDT	AMI Maintenance	23037804	[REDACTED]	Repeater is not working please cbeck.	Replaced 902 board.
06/08/2023 12:00 AM CDT	AMI Maintenance	23037935	[REDACTED]	801 repeater near this account has stopped working please look into.	Replaced 801 board.
06/13/2023 12:00 AM CDT	AMI Maintenance	23038791	[REDACTED]	AMI repeater is not connecting to any downline device please look into.	Replaced bad cable.
06/19/2023 12:00 AM CDT	AMI Maintenance	23039074	[REDACTED]	Check CCU at Possum Trot substation, unable to talk to any device outside of substation.	Bad connector inside CCU.
07/07/2023 12:00 AM CDT	AMI Maintenance	23046119	[REDACTED]	Meter sbowing an error	Meter has no current flowing through it, that is the cause for the error code. Everything is working properly.
07/21/2023 12:00 AM CDT	AMI Maintenance	23047809	[REDACTED]	CCU communications are coming in and out please investigate.	Replaced fiber patch cord.
07/21/2023 12:00 AM CDT	AMI Maintenance	23047810	[REDACTED]	CCU is out at Husbands sub please investigate.	Replaced 721 CCU.
08/07/2023 12:00 AM CDT	AMI Maintenance	23052407	[REDACTED]	Check CCU, only brought back one read.	Troubleshooting revealed a bad communication board. Replaced with moxa serial to ethernet converter. Verified CCU was reading meters with Mark. KB 8/7/23
08/21/2023 12:00 AM CDT	AMI Maintenance	23056996	[REDACTED]	Jacks blown on AMI_REP_00000018 near this account.	Jacks are in at this Repeater. KB 10/23/23

12/21/2023 12:00 AM CST	AMI Maintenance	23093433	[REDACTED]	Check CCU on the west side of Krebs sub.	Changed setings on CCU to see if we are able to read more meters.
12/27/2023 12:00 AM CST	AMI Maintenance	23093523	[REDACTED]	AMI repeater is not working.	Changed 810, coax cable, and 902.
12/27/2023 12:00 AM CST	AMI Maintenance	23093524	[REDACTED]	AMI repeater is not working near this SML.	replaced cable and H-field
01/04/2024 12:00 AM CST	AMI Maintenance	24000076	[REDACTED]	Check CCU near this location for missing meter reads.	Added another 830 and replaced cable on the 810.
01/10/2024 12:00 AM CST	AMI Maintenance	24001901	[REDACTED]	Install new IP address on the CCU at Cumberland sub.	Rebooted CCU. Mark said he would enter the IP addressing information.
01/17/2024 12:00 AM CST	AMI Maintenance	24003028	[REDACTED]	CCU is not talking to anything downline.	Changed CCU with one brought back from Iowa.
02/06/2024 12:00 AM CST	AMI Maintenance	24008447	[REDACTED]	CCU is not talking to downline repeater, please investigate.	Replaced cable and H-field.
02/28/2024 12:00 AM CST	AMI Maintenance	24013483	[REDACTED]	Kansas CCU is not bringing back meter reads please check.	Replaced coax cable.

Manual Meter Reads--Past 14 Months

Yr/Month	Manual Read Meters
23-Jan	4,477
23-Feb	4,544
23-Mar	4,845
23-Apr	3,791
23-May	5,280
23-Jun	5,616
23-Jul	5,518
23-Aug	7,824
23-Sep	5,976
23-Oct	5,902
23-Nov	6,355
23-Dec	6,347
24-Jan	5,324
24-Feb	5,335

Exhibit D

Email Correspondence Filed Under Seal