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September 14, 2012

Mr. Jeff Derouen
Executive Director
COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
P. O. Box 615
Frankfort, KY 40602-0615

In The Matter of:

FLEMING-MASON ENERGY COOPERATIVE CORPORATION — CASE NO. 2012-00361

Dear Mr. Derouen:

Enclosed are the responses (original and 10 copies) of Fleming-Mason Energy to the requests for information relative to the AMI application filed earlier herein.

Also enclosed is a Motion for Confidentiality pertaining to Item 3 (c.) of the information request for the Commission's approval

Sincerely,

Marvin W. Suit

MWS/mc

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter of:

AUTHORIZATION OF FLEMING-MASON ENERGY COOPERATIVE, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO INSTALL AN ADVANCED METERING INFRASTRUCTURE SYSTEM (AMI)	))))))	CASE NO. 2012-00361

MOTION FOR CONFIDENTIALITY

Comes Fleming-Mason Rural Energy Cooperative Corporation, by their attorney, Marvin W. Suit, and moves the Commission under the provisions of 807 KAR 5001-Section 7- Confidential Material for their responses dated September 14, 2012 to the Information Requests of the Commission and all subsequent responses to Information/Data Requests be kept confidential as follows:

1. Pursuant to KRS 61.878 (1) [c] 1. Records confidentially disclosed to an agency, generally recognized as confidential or proprietary, which if openly disclosed would permit an unfair commercial

advantage to competitors of the entity that disclosed the records . . . . .

b. In conjunction with the regulation of the commercial enterprise . . . . .

2. This request applies primarily to the responses of the applicant to ITEM No. 3 (c.) of the Responses filed with this Motion. The response for which confidentiality is requested in this Item is contained in three separate folders.

3. The companies which submitted the three proposals operate businesses in the arena of a very competitive market and need the privilege of not publishing its proprietary records to the world.

The applicant respectfully requests that confidentiality be granted the responses submitted in ITEM 3 (c.) of the applicant as requested by the Public Service Commission.

DATED: September 14, 2012

MARVIN W. SUIT
SUIT, McCARTNEY & PRICE
Attorney for Applicant
207 Court Square
Flemingsburg, Ky. 41041
(Ph)-606-849-2338

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

APPLICATION OF FLEMING-MASON ENERGY COOPERATIVE, INC. FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO INSTALL AN ADVANCED METERING INFRASTRUCTURE (AMI)	))))))	CASE NO. 2012-00361

RESPONSE TO COMMISSION STAFF'S
FIRST DATA REQUEST

Comes Fleming-Mason Energy Cooperative, Inc. (FME) and files with the Commission an original and ten (10) copies of the attached response to the Commission Staff's First Data Request to Fleming-Mason Energy Cooperative, Inc. dated and served on September 6, 2012.

CERTIFICATION

The undersigned, Joni Hazelrigg, stated that she is the Chief Financial Officer of Fleming-Mason Energy Cooperative, Inc.; that she supervised the preparation to the within response; and certifies that the within response is true and accurate to the best of her knowledge, information and belief formed after reasonable inquiry.

Joni Hazelrigg

JONI HAZELRIGG, CHIEF FINANCIAL OFFICER
FLEMING-MASON ENERGY COOPERATIVE, INC.

STATE OF KENTUCKY

COUNTY OF FLEMING

Subscribed and sworn before me by Joni Hazelrigg, Chief Financial Officer of Fleming-Mason Energy Cooperative, Inc., at Flemingsburg, Kentucky this 13th day of September, 2012.

JENNY L. WILLS NOTARY PUBLIC MY COMMISSION EXPIRES 11/9/2013 STATE AT LARGE, KY

Jenny L Wills

NOTARY PUBLIC
STATE-AT-LARGE

My Commission Expires: 11-9-13

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

1. Refer to paragraph 6 of the Application.

a. Provide a detailed analysis of the project cost components listed, separately identifying costs for equipment, material, and labor to install.

Response:

Quantity	Description	Cost
Various	AMI System Hardware/Software: Includes Computers; Communication Interfaces; System Software; System Services; Spare Parts	$880,580
	Annual Contracts & Technical Support	$52,000
	Training	$7,500
23,700	Itron Meters with AMI Module Installed	$1,996,000
23,700	Labor to Install Meters	$474,000
6	Labor to Install Tower Equipment	$85,834
	Total Projected Cost	$3,495,914

Refer to response to Question 3 (c) for complete breakdown.

b. Will Fleming-Mason's substation equipment require any upgrades or additions to be compatible with the proposed Advanced Metering Infrastructure ("AMI") system?

Response: No

(1) N/A

(2) N/A

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

2. a. State the total number of meters in Fleming-Mason system identified by type, i.e., mechanical or digital and/or solid state.

Response:

Single Phase – Mechanical	17838
Single Phase – Digital and/or Solid State	5532
Poly Phase - Digital and/or Solid State	330

b. Where digital/solid-state meters are currently used, are they compatible with the new AMI system?

Response: No. Tantalus' AMI module is compatible with Itron meters that Fleming-Mason does not currently utilize. By purchasing new meters, all AMI components will be installed at the factory with factory testing. The extra cost involved to retrofit existing solid state meters could run more than a new meter.

Fleming-Mason Energy
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3. Refer to Exhibit 1 of the Application.

a. What are the alternatives to a radio frequency AMI system? Explain fully why an alternative system would or would not satisfy Fleming-Mason's requirements.

Response: The most prevalent alternative is the power line carrier technology where the meter data is transmitted over the power lines to a gathering point in the utility's substation. The data is then transmitted to the utility for use. The radio frequency technology that FME is proposing uses radio wave lengths to transmit meter data to a collection point on a strategically located tower, then the data is transmitted on to the utility. Based on site visits and information gathered, FME is convinced that the radio frequency technology will provide quicker two-way communication between the metering point and the utility; will experience less interference due to power line disturbances; will allow for more flexibility for future SmartGrid applications; and is comparable in price to install and maintain. See Exhibit 1 attached.

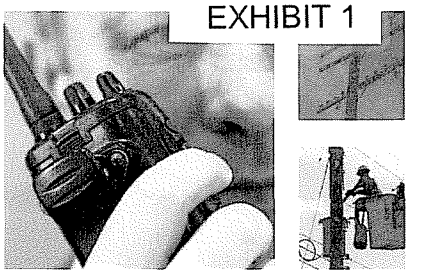
b. Identify the five vendors that received a RFP.

Response: Tantalus, Sensus, Landis & Gyr, Elster, Trilliant

c. Provide copies of the three proposals received.

Response: The three proposals contain proprietary information and confidential pricing that is being filed separately with a Petition for Confidential Treatment.

EXHIBIT 1



NRTC UTILITY SOLUTIONS

AMI Technology Comparison

Core AMI Technology →	PLC	RF Mesh	RF Tower	Digital Cellular	WiMAX / WiFi
Communications status	Power-Line	Unlicensed	Licensed	Public	Public
Maturity of systems	High	Moderate	Moderate	Very Low	Very Low
Optimal deployment scenarios	Rapid, system wide	Rapid, system wide	Rapid, system wide	Targeted	Trial system (in 2 – 3 years)
Capital cost of Infrastructure	Medium	Medium	Medium	Low	High
Annual operating expense	Low	Low	Low	High	Medium
Data throughput	Low to moderate	Moderate to high	Moderate to high	Moderate to high	Very High
Ability to serve customer based SmartGrid applications	Low to medium	Medium to high	Medium to high	Medium to high	High
Ability to serve SmartGrid applications	Medium	High	High	Low	High

Fleming-Mason Energy
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d. Provide documentation of the assessment process of the RFP's that resulted in the selection of Tantalus Systems.

Response: FME retained the consulting service of Enervision to assist with sending out a comprehensive RFP and to assist with the assessment of the proposals. They provided FME with an extensive scoring checklist that weighed critical capabilities that were identified by FME on the front-end of this process. The scoring was designed to assess each proposal on its own merits and to allow for an "apple-to-apple" comparison. The first section is focused on scoring the technology, support, qualifications of the bidder, responsibility of the bidder, equipment, training, warranties, etc. The second section is devoted to pricing. Attached as Exhibit 2 is the scoring criteria.

e. Explain the weighted scoring process used in assessing the RFP's received and provide available documentation.

Response: Please refer to Exhibit 2 under the heading "Musts/Wants (Weight). FME with the assistance of Enervision graded each requirement with 1 being not critical to 10 being most critical. Some requirements were considered "Must" for a proposal to be considered viable. This grading not only allowed FME to make certain that critical components could be met by each vendor, but also to assess how well all components of a robust AMI system could be met.

SCORE SHEET

	Requirement Title	Section	Musts/Wants (Weight)	Weighted Scores by
..t. I	**Introduction**	**1**	1	10
	Background	**2**	1	10
	Project Scope	**3**	1	10
	Organization	**4**	1	10
	Definition of Terms	**5**	1	10
	Instructions to Bidders	**6**		620
	General Instructions	6.1	2	
	Submittal of Proposal	6.2	Must	
	Price Protection and Certification	6.3	4	
	Questions and Clarifications	6.4	1	
	Qualifications of Bidders	6.5	Must	
	Site Inspections, Bidder Meetings and System Demonstrations	6.6	3	
	Content of Proposal	6.7	6	
	Table of Compliance	6.7.1	10	
	Project Planning, Sched, and Organization	6.7.2	5	
	Technical Descriptions	6.7.3	5	
	Basic Technical Requirements	6.7.4	9	
	Contract Form	6.8	8	
	Method of Contract Award	6.9	7	
	Supplementary Conditions	**7**		1450
	Contract Type	7.1	3	
	Contract Documents	7.2	9	
	Responsibilities	7.3	5	
	Contract Time	7.4	4	
	Installation, Maintenance and General Support	7.5	9	
	Performance Bond	7.6	10	
	Confidentiality	7.7	7	
	Insurance	7.8	9	
	Agreement to Hold Harmless	7.9	Must	
	Termination	7.10	4	
	Work by Others	7.11	4	
	Subcontracts	7.12	4	
	Patents	7.13	10	
	Licensing	7.14	10	
	Terms of Payment	7.15	7	
	Invoicing	7.16	7	
	Delivery	7.17	9	
	Quality of Work	7.18	10	
	Warranty	7.19	10	
	Price Quotes	7.20	8	
Sect. II	**Project Responsibilities**	**8**		120
	Bidder's Resp	8.1	6	
	Fleming-Masons's Resp	8.2	6	
	AMI System - Head-end Equip	**9.0**		460
	Admin and Operator Console	9.1	5	
	Event Logging	9.2	7	
	Communications Server	9.3	9	

Communications to Field Equip	9.4	10	
Environmental Conditions	9.5	6	
System Capacity	9.6	9	
Software Functions	**10.0**		850
Communications Software	10.1	9	
Hot Stand-by and Failover	10.2	7	
Select-Check Back Control	10.3	6	
Admin/Operator Acct, Passwords, Zones	10.4	10	
System Maintainability	10.5	10	
Database	10.6	8	
Database Editor	10.7	8	
Human Machine Interface	10.8	8	
Distribution Automation Software Requirements	10.9	9	
Interface to Other Systems	10.10	10	
Meters, End Points, Load Control & In-home Devices	**11.0**		360
Meters	11.1	10	
End Points	11.2	10	
Demand Response - Direct Control Load Management	11.3	10	
In-home Devices	11.4	3	
Consumer Portal	11.5	3	
Spare Parts	**12.0**	10	100
Documentation	**13.0**		180
Hardware Documentation	13.1	8	
Software Documentation	13.2	10	
Training	**14.0**		300
Meter and End Point Configuration and Maintenance Training	14.1	10	
Operator Training	14.2	10	
Head-end Equip Database Training	14.3	10	
Testing	**15.0**		100
Factory Acceptance Test	15.1	10	
Installation	**16.0**		580
Instruction Manuals	16.1	8	
System Staging	16.2	8	
Implementation Schedule	16.3	6	
Installation Cost	16.4	5	
Service Information	16.5	9	
Installation Testing	16.6	7	
Equipment Installation	16.7	6	
Grounding	16.8	9	
Warranty	**17.0**	10	100
Project Manager	**18.0**	9	90
Project Management	**19.0**	8	80
System Acceptance	**20.0**		430
Factory Acceptance Testing	20.1	9	
Equipment Inventory	20.2	8	
Final Acceptance Testing	20.3	10	
Software Programming Plan	20.4	9	
Maintenance Plans	20.5	7	

Total Weighted Score 5790

A. Base Bid

Infrastructure
Meters
System Services
Spare Parts and Spection Equipment

B. Maintenance Services

FlexWare/FlexServer/FlexNet Annual Maintenance & Spectrum License

C. Training

Additional Optional Training, per course

D. Options

Three Year Extended Warranty
Additional Training, per day
Additional Data Storage
Load Management/HAN Capabilities
Alternative Meter Options (in addition to those listed above)
Optional Meter Pricing
Load Management Devices
HAN Devices
Distribution Automation Capabilities
Distribution Automation Devices
Optional Backhaul
Disaster Recovery (Standby for Head-end system)
Additional Spare Parts Kit
Optional Incremental Savings for a Four Tower Design

E. Unlisted Potential Additional Costs Points to FME

Shipping
Price escalation
travel and living costs
tower/pole sites

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

4. Refer to Exhibit 1, page 1, of the Application. It state "the committee decided to concentrate their efforts on vendors that utilize radio frequency (RF) which uses either licensed or un-licensed frequency to send and receive data."

a. Explain the difference between a licensed and unlicensed frequency.

Response: RF spectrum, unlicensed and licensed, is regulated by the Federal Communications Commission (FCC). The right to operate in a licensed spectrum band is granted by the FCC, and is typically seen as "owned" by the entity that holds the license. Unlicensed spectrum is free and open to everyone, as long as they follow some basic ground rules as defined by the FCC. Some AMI vendors use a combination of licensed spectrum in the licensed 220MHz and 900MHz bands and unlicensed spectrum in the 902 MHz to 928MHz band. The Tantalus solution we have selected uses licensed 220MHz spectrum for the wide area network (WAN) and unlicensed spectrum for the local area network (LAN).

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b. If an unlicensed frequency is used, explain the potential benefits and problems of using an unlicensed versus a licensed frequency.

Response: It is often perceived that licensed spectrum provides greater security in regards to RF integrity and reliability. This is not the case. Either licensed or unlicensed spectrum can be designed to provide secure and reliable communication. Some advantages and disadvantages of licensed and unlicensed spectrum are shown below.

Spectrum	Advantage	Disadvantage
Licensed	FCC offers user sole right to operate at frequency in given geographic area.	Must obtain license from FCC. At times the FCC will reassign bands for other users, forcing current license holders to vacate frequency.
	License holder has the right to shut down non-authorized users transmitting on licensed frequency.	Communication could be degraded while investigation of source of interference is conducted. At times interference is intermittent, caused by licensed users in near-by geographic areas.
	Authorized transmit power is higher than unlicensed, able to obtain a larger coverage footprint.	Power consumption from given device is higher with higher transmit power. Minimizes value for use in consumer devices.
Unlicensed	No FCC license required. FCC regulation is administered by requiring manufactures to follow a basic set of rules of equipment operation.	Potential for other users interfering with operation unless equipment manufacturer has designed solution to operate in RF noisy environment.
	The potential of the FCC to vacate unlicensed frequencies is extremely low due to the negative economic impact of moving the large number of users and manufactures leveraging the frequencies.	Number of users operating in the frequency band.
	Can be designed to be operating in noisy environments and immune from interference. For example the US military uses unlicensed frequencies – and is subject to attempts to jam and eavesdrop on communications.	False public perception that all unlicensed spectrum is insecure

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4. b. **Response** Continued

The Tantalus when designing their AMI network recognized the above advantages and disadvantages.

The wide area network (WAN) which will provide blanket coverage to LAN collectors throughout FME's territory uses a licensed 220MHz frequency. Frequencies are readily available and the 220 MHz signal offers excellent coverage due to 220MHz propagation characteristics and the power levels authorized by the FCC. If the unlikely event of the FCC requiring 220MHz license holders to vacate the frequency the economic impact is limited to just the WAN transmitters and LAN collectors, not the entire AMI installation.

The core of TUNet is their local area network (LAN). The techniques deployed by Tantalus are quite similar to ones used by the US military. The TUNet LAN is a near-military grade frequency-hopping architecture that provides a communications fabric which optimizes bandwidth use and interception immunity within the unlicensed 902-928 MHz ISM band. A key unique feature of the TUNet LAN is their construction of 64,000 independent data communication channels- the highest in the industry. Use of these channels allows TUNet to deliver data path redundancy that is not impacted by other services in the band, is highly resilient to radio frequency noise, and is not subject to self-interference often seen with networks operating with fewer channels. Further, the LAN devices feature an industry leading combination of sensitivity and transmission power that provide best in class range and connectivity performance.

c. Explain whether there are any security issues with an unlicensed versus a licensed frequency.

Response: Data Security is built into the communications methodology and standards used in a particular solution, and are not specific to licensed versus unlicensed frequency bands.

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d. Explain how the selected system is "Future Proof".

Response: One-way and two-way power line carrier (PLC) based AMI systems have served cooperatives admirably over the years, but they are unable to support evolving consumer and cooperative needs. PLC AMI systems have limited capacity and unable to support all single and poly-phase meters reporting interval data. Further PLC systems are unable to provide real-time outage notification alerts. Further unlike other wireless solutions that provide "batch" or "polled" consumption data, TUNet provides real time consumption data. TUNet's industry unique real-time consumption data allows FME and consumer access with the current consumption data- not yesterday's.

The TUNet AMI solution features TruPush™ technology, which delivers instant event notifications. Whenever a problem arises – outage, swell, and sag – a high priority alert is automatically issued which enables the utility to take immediate action. TruPush™ also supports mass field event control strategies such as those used in system-scale demand response (DR) and distribution automation (DA) applications. This confirms that an action was successfully performed. There's no need to query each endpoint. TruPush™ keeps network latency low by eliminating round-trip device polling. As a result, TUNet maintains split-second responsiveness for smart grid operations - no matter how large the network ultimately grows.

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e. Provide a detailed assessment of how voltage monitoring requirements, including compliance with 807 KAR 5:041, Section 7, will be met by the new system.

Response:

- Every meter equipped with a TUNet module becomes a power quality meter. Voltage and other data is reported when every interval is sent. This capability is standard and has no impact to the overall cost of the AMI solution.
- Every meter reports interval data as it's recorded. This enables consumers to experience TUNet unique real-time data access – not having to settle for just viewing yesterday's consumption data.

TUNet provides FME not only a complete AMI system but a communication platform to manage power supply costs, improve distribution system efficiency, enhance customer service and satisfaction, reduce outage and restoral costs, and empower consumers to manage and monitor energy consumption.

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5. Refer to Exhibit 2, page 1, of the Application. It state, "the two-way, near real-time network will enable FME to monitor and control smart meters, smart thermostats, load control devices and the infrastructure equipment over which electricity, water and gas are delivered."

a. Explain the term "near" in the phrase "near real-time network".

Response: Usage data for residential meters will report in at intervals preset by FME. This is commonly set at 60 minute intervals. Commercial poly-phase meters will be preset at 15 minute intervals. Alarms for outage reporting purposes and other events will occur within seconds of the event. FME will be able to poll the meter at any time and receive a response back within seconds.

b. Explain why Fleming-Mason is interested in monitoring water and gas deliveries.

Response: FME has no interest in monitoring water or gas deliveries. Tantalus does market to water and gas utilities.

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6. Refer to Exhibit 2, page 3, of the Application (Demand Side Management-Distribution System). Provide additional information about Dispatchable Conservation Voltage Reduction including how this technology may yield immediate operational saving.

Response: Dispatchable Conservation Voltage Reduction (DCVR) allows real-time feedback of voltages from all TUNet equipped meters and end-points. This allows an important input to FME SCADA to lower system voltage to reduce peak demand (and related charges) while maintaining required voltages throughout the system. Morristown Utility Services in Tennessee is an example of a TUNet customer leveraging the savings of $440,000 in 2011 that is realized through DCVR, without impacting the comfort or safety of their consumers.

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7. Refer to Exhibit 3, where it is stated that Fleming-Mason will provide and deploy the meters.

a. Provide a complete description of the meters proposed to be installed. Include the manufacturer, type, life expectancy, and rate of failure of this type of meter. Also include a copy of any materials supplied by the vendor describing the capabilities and features of the meters.

Response: Attached are the spec sheets for the Itron meters and Tantalus modules (Exhibit 3, Pages 1 – 8). The design life for both products are 20 years and the failure Rate for Itron CENTRONs (single phase) is less than 0.5% and the failure rate for Itron SENTINELs (polyphase) is less than 0.75%

b. Explain why Fleming-Mason selected these meters instead of other available meters.

Response: Each AMI vendor works with specific meter manufacturers. Tantalus has established a partnership with Itron and since over 40 million Itron CENTRON meters and over 1.8 million Itron SENTINEL meters have been built and deployed, FME plans to utilize the Itron meters. Other key points include:

- The Tantalus module is fully integrated at the factory by Itron.
- All Itron electric meters included our requested 5 year warranty.
- All RMAs for Tantalus/Itron integrated meters are sent back to Itron where diagnostics and warranty claims will be processed.
- Itron manufactures all electric meters in Oconee, SC

c. Do the meters selected represent the most recent technology available? If not, explain Fleming-Mason's decision to select these meters.

Response: Yes. All meters will be solid-state.

SENTINEL® Multimeasurement Meter

The SENTINEL meter is a solid-state, electronic, multimeasurement, polyphase meter of exceptional accuracy. This self-contained or transformer-rated meter is designed for use in commercial and industrial locations, including large industrial sites and substations. An advanced analog-to-digital sampling technique samples each incoming current and voltage waveform 32 times per cycle (60Hz). Voltage and current values are calculated every two cycles using true Root Mean Square (RMS) calculation. Volt-amperes are calculated by multiplying the RMS voltage value with the RMS current value, thus providing an arithmetic calculation for VA. The SENTINEL meter also allows for a vectorial calculation of VA.

FEATURES

Flexible Platform

» Electronic circuit boards fit together to perform various functions

» Transformer input for current and resistive divider input for voltage

» Analog-to-digital conversion and measurement processing

» Register, load-profile, real-time clock, and communications processing

» Input and output board for pulse accumulation or event notification

Forms Available

» Socket: 2S*, 3S, 4S, 5S, 6S, 8S, 9S, 12S*, 14S, 15S, 16S*, 17S, 26S, 45S, 56S, 66S

*Available in Class 320; also available with no potential links option

» A-Base: 5A, 6A, 8A, 9A, 10A, 14A, 15A, 16A, 17A, 45A, 46A, 48A

» Switchboard Ready: 5F, 6F, 8F, 9F, 45F, 46F

Protocols

» The SENTINEL meter uses PSEM (ANSI C12.18 - 1996) protocol

» QDIP Protocol

Standard Features

» Class 0.2 accuracy

» 5 measurement levels

» Upgradable firmware

» Error and event logging

» SiteScan™ onsite monitoring system

» SiteScan Diagnostic Snapshots

» Flexible configuration for various metering applications

» Autoranging power supply

- Single Phase Power Supply
- Available as a three phase power supply

Registers

» Register data and program information are retained in nonvolatile memory in the event of a power failure

» Selection from hundreds of items on a liquid crystal display (LCD) that is programmable by the user

Energy

» Wh: delivered, received, net, unidirectional

» VARh: delivered and received, net delivered, net received and 4 quadrant

» VAh: vectorial and arithmetic, delivered, received and lagging

» A^2h: aggregate

» V^2h: aggregate

» Ah: per phase and neutral

» Vh: per phase and average

Demand

» Instantaneous values updated every second

» Maximum, present, previous, projected, cumulative, continuous cumulative and coincident demand values are available

Demand Register Types

» Block and rolling demand intervals with programmable interval and subinterval lengths

» Thermal demand calculations

Power Factor

» Average

» Minimum

» Instantaneous

Self-Read and Snapshot Data

» Two sets of snapshot data, automatically read at demand reset

» Four sets of self-read data, user programmable schedule

» One set of self-read data, automatically read at season change (last season data)

Switchboard Ready™ Meter

» Retrofits 13 Switchboard case styles

» Retrofits 137 different devices

Voltage Input Rating

» Automatic voltage-sensing power supply, available in single-phase or three-phase

» Single-phase power supply operates over a voltage input range of 120-480 V

» Three-phase power supply operates over a voltage input range of 57.7-277 V

Accuracy Data

The SENTINEL meter is a +/-0.2 accuracy device capable of displaying a wide range of register information as well as complying with the requirements of ANSI C12.20 - 2002 for Class 0.2 meters.

Software

» PC-PRO+® Advanced

» Field-Pro™

» Shop-Pro™

» PC-PRO+ Views

OPTIONAL FEATURES

Power Quality

» Voltage Quality:

- Phase to phase or phase to ground event detection
- 3 levels of sags
- 3 levels of swells
- 3 levels of voltage imbalances
- 3 levels of current imbalances
- 3 classes of interruptions

» Harmonics:

- Per phase instantaneous % THD V and % TDD I
- Prompt for peak demand current
- Per phase data is displayable
- ANSI and IEC calculation
- Harmonic Distortion Check

Pulse outputs and inputs

» One Form C KYZ output and one Form A low-current, solid-state contact output

» Two Form C KYZ outputs and one Form A low-current, solid-state contact output

» Two Form C KYZ outputs, one Form A low-current, solid-state contact output, and two Form A KY pulse inputs

» Four Form C KYZ outputs and one Form A low-current, solid-state contact output

» Four Form C KYZ outputs, one Form A low- current, solid-state contact output, and two Form A KY pulse inputs

MeterKey™

» Measurement level Upgrade/Downgrade

» TOU

» Load profile

» Power quality

» Bidirectional measurement

» Totalization

COMMUNICATION CAPABILITIES

GPRS Communications

» Secure cellular network

» Communicates with Itron Transaction Management System (TMS)

» Future-proofed, IP-based connectivity

» Field upgradeable

» Optional communication board

Ethernet Communications

» Fixed and dynamic IP addressing

» Encryption support

» Ethernet allows customers to remotely connect to the SENTINEL meter to program or read the meter

- Email On Event
  - 26 User Configurable Event
- Web page support

Internal Modem

- The modem allows customers to remotely connect to the SENTINEL meter to program or read the meter
- It operates at a speed of 300/1200/2400 baud rates and is available for stand-alone or phone line sharing applications
- Off hook detection
- Phone Line Thru Cover

I/O Network

The input and output options available are determined by the type of I/O board that is installed in the meter. The SENTINEL meter supports a maximum of 4 KYZ outputs, 1 (KY) low current/high current output, and 2 (KY) pulse or solid-state inputs.

OEM Communication Options Available

- Motorola™ Canopy (works with SENTINEL Meter with Ethernet Communications Board)
- Trilliant NCGR801 GPRS/GSM
- Trilliant CRDR-1010 CDMA/1xRTT
- Trilliant NCZR801 Secure Mesh (ND04)
- Trilliant CI-1000 Secure Mesh (ND10)
- Aclara Power Line Carrier
- Hunt TS2
- Metrum UTILIWISE-SE

RF ERT Modules

- R300S (1 ERT)
- R300SD (2 ERTs)
- R300SD3 (3 ERTs)

RS-232/RS-485

- Supports PSEM (ANSI Tables) and QDIP protocols
- One or two serial communication ports added to the SENTINEL meter
- Each port is addressable

Accuracy Tests

Measured Quantity	Phase Angle %	Error of Reading
Volts (0.75Vn-1.15Vn)	All Phase Angles	+/- 0.2%
Amps (0.1A-0.25A)	All Phase Angles	+/- 0.4%
Amps (0.25A-20A)	All Phase Angles	+/- 0.4%
Amps (2.5A-200A)	All Phase Angles	+/- 0.4%
Watts (0.05A-0.25A)	0°, 180°	+/- 0.4%
Watts (2.5A-20A)	0°, 180°	+/- 0.2%
Watts (2.5A-200A)	0°, 180°	+/- 0.2%
Watts (0.05A-0.5A)	-60°, +60°, -120°, +120°	+/- 0.5%
Watts (0.05A-20A)	-60°, +60°, -120°, +120°	+/- 0.3%
Watts (5.0A-200A)	-60°, +60°, -120°, +120°	+/- 0.3%
Vars (0.05A-0.25A)	-90°, +90°	+/- 0.4%
Vars (2.5A-20A)	-90°, +90°	+/- 0.2%
Vars (2.5A-200A)	-90°, +90°	+/- 0.2%
Vars (0.05A-0.5A)	-30°, +30°, -150°, +150°	+/- 0.5%
Vars (0.5A-20A)	-30°, +30°, -150°, +150°	+/- 0.3%
Vars (5.0A-200A)	-30°, +30°, -150°, +150°	+/- 0.3%
VA Arith. (0.05A-0.25A)	All Phase Angles	+/- 0.8%
VA Arith. (0.25A-20A)	All Phase Angles	+/- 0.6%
VA Arith. (2.5A-200A)	All Phase Angles	+/- 0.6%
VA Vec (0.1A-0.5A)	-60°, +60°, -120°, +120° -30°, +30°, -150°, +150°	+/- 0.6%
VA Vec (0.5A-20A)	-60°, +60°, -120°, +120° -30°, +30°, -150°, +150°	+/- 0.4%
VA Vec (5.0A -200A)	-60°, +60°, -120°, +120° -30°, +30°, -150°, +150°	+/- 0.4%

In Conformance with the ANSI C12.20 standard for Class 0.2 meters

SPECIFICATIONS

Technical Data

- ANSI C12.1 - 2008
- ANSI C12.10 - 2004
- ANSI C12.18 - 1996
- ANSI C12.19 - 1997
- ANSI C12.20 - 2002
- ANSI C12.21 - 1999

Surge, Impulse and RF Interference

- ANSI C37.90.1 - 2002
- ANSI C62.41.1 - 2002
- FCC Part 15 (Class B)
- ANSI C62.45 -2002
- FCC Part 68

Reference Information

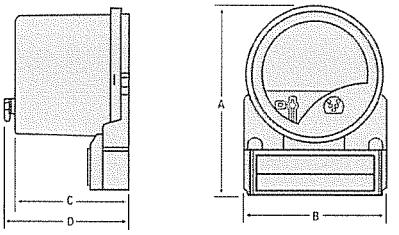
- SENTINEL Meter Technical Reference Guide
- SENTINEL Meter Overview Brochure
- SENTINEL Meter Communication Option Specification Sheets
- Hardware Specification Form
- Site Analysis Guide
- Metering Pocket Guide

Dimensions

A-Base			
A	**B**	**C**	**D**
9.46"	7.28"	5.90"	6.44"
24.0 cm	18.48 cm	14.97 cm	6.35 cm

Socket Meter				
A	**B**	**C**	**D**	**E**
6.95"	6.31"	5.46"	6.00"	7.30"
17.65 cm	16.03 cm	13.87 cm	15.24 cm	18.54 cm

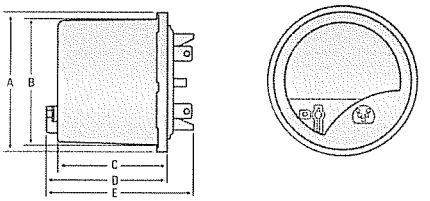
SENTINEL A-Base Meter



Specifications

Power Requirements	Voltage Ranges:		-20% to +10% of nominal voltage (1 or 3 phase)
	Frequency:		50-60Hz
	Operating Voltage:		± 20%
	Operating Range:		45 Hz to 65 Hz
Load Profile/ TOU Battery	Load Profile/TOU Battery Carryover:		12 year minimum
	Operating Range:		3.4 V- 3.8 V
	Shelf Life:		25 years minimum
Time	Line Sync:		Power line frequency
	Crystal Sync:		±0.003% @25°C; ±0.02% over full temperature range
Operating Environment	Temperature:		-40° to +85°C
	Humidity:		0% to 95% non-condensing
Transient / Surge Suppression	ANSI C37.90.1-2002 ANSI C62.41-2002		
Accuracy	ANSI C12.20:2002 for class 0.2 meters		
Characteristic Data	Starting Current:		
	0.005 amps (Class 20)	0.050 amps (Class 200)	0.080 amps (class 320)
Burden Data	Voltage circuit:		
	Voltage 120	Watts: 1.3	VA 2.2
	Voltage 240	Watts: 1.6	VA 3.1
	Voltage 277	Watts: 1.7	VA 3.4
	Voltage 480	Watts: 2.4	VA 5.2

SENTINEL Socket Meter



Shipping Weights

A-Base	
Net Weight	Gross Weight (Meter & Carton)
5.7 lbs (2.6 kg)	9.3 lbs (4.2 kg)

Socket Meter		
Net Weight	Gross Weight (Meter & Carton)	Gross Weight (4 Pack)
4 lbs (1.8 kg)	7.5 lbs (3.4 kg)	20.2 lbs (9.2 kg)

At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: **www.itron.com**

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Phone: 1.800.635.5461
Fax: 1.509.891.3355

C1S

CENTRON® Meter

The CENTRON C1S solid-state meter is used for measuring single-phase energy consumption. With this solid-state meter, Itron presents a platform for residential metering with the flexibility to adapt as your needs expand and change.

The CENTRON C1S is available as an energy meter with an LCD register. As an option, the meter is available with interchangeable personality modules, including demand, time-of-use (TOU), load profile and various communication options.

FEATURES

Flexible Platform

» The CENTRON meter can easily be upgraded to any of the option modules available

» All calibration data is permanently stored in the base of the meter on the CENTRON metrology board

Personality Modules

» The interchangeable personality modules are part of a snap-in register assembly

» The personality module houses all register or communication functions

Enhanced Performance

» Low starting watts

» Low burden

» Captures energy that was not monitored in the past by electromechanical meters

Tamper Resistant

» Measures energy even if the meter is inverted

Standard Features

» Electronic LCD register

» Polycarbonate cover

» Test LED Unattended Processing

Option Module Upgrades

» Demand module (C1SD)

» TOU with demand module (C1ST)

» Load profile with TOU and demand module (C1SL)

» R300 900 MHz RF module (C1SR)

Option Availability

» Glass cover

» Electronic detent

» Identification/Accounting aids

Product Availablity

Meter Version	Class	Volts	Wire	Form	Digits/ Mult	Energy Setting	Catalog Number Glass	Catalog Number Poly
C1S	100	120	2	1S	5x1	Undetented	G980225	G980205
C1S	200	240	3	2S	5x1	Undetented	G980194	G980181
C1S	320	240	3	2S	5x1	Undetented	G980236	G980213
C1S	20	120	2	3S	5x1	Undetented	G980247	G980248
C1S	20	240	3	4S	5x1	Undetented	G980255	G980223
CN1S	200	120	3	12S	5x1	Undetented	G980257	G980195
CN1S	200	120	3	25S	5x1	Undetented	G980265	G980266

Technical Data

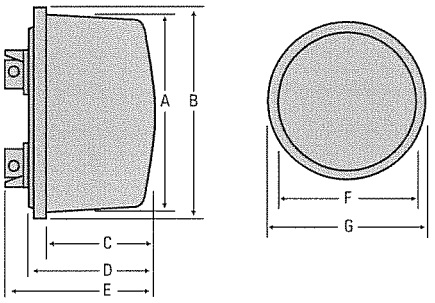
Meets applicable standards:

- » ANSI C12.1 - 1995
- » ANSI C12.10 - 1997
- » ANSI C12.20 (Class 0.5) - 1998
- » ANSI C37.90.1 - 1989
- » ANSI C62.45 - 1992
- » IEC 61000-4-4
- » IEC 61000-4-2
- » FCC Part 15, Subclass C

Reference Information

- » CENTRON Technical Reference Guide
- » CENTRON C1SR Specification Sheet
- » CENTRON C1SC Specification Sheet
- » CENTRON C1SD, T, L Specification Sheet
- » Hardware Specification Form
- » ZRO-C2A Handheld Meter Resetter Instructions

Dimensions



SPECIFICATIONS

Dimensions

Polycarbonate						
A	**B**	**C**	**D**	**E**	**F**	**G**
6.29"	6.95"	2.7"	3.16"	4.53"	6.29"	6.95"
16 cm	17.7 cm	6.9 cm	8 cm	11.5 cm	16 cm	17.7 cm

Glass						
A	**B**	**C**	**D**	**E**	**F**	**G**
6.42"	6.95"	3.03"	3.55"	4.9"	6.42"	6.95"
16.3 cm	17.7 cm	7.7cm	9 cm	12.5 cm	16.3 cm	17.7 cm

Shipping Weights

Polycarbonate	Pounds (approx)	Kilograms
4 Meter Cartons	8.9	4.04
120 Meter Pallets	260-265	117.936

Glass	Pounds (approx)	Kilograms
4 Meter Cartons	13.96	6.35
120 Meter Pallets	335	151.956

Specifications

Power Requirements	Voltage Rating: 240 Operating Voltage: ± 20% (60 Hz); ±10% (50 Hz)	Frequency: 60Hz, 50hz Operating Range: ± 3 Hz
Operating Environment	Temperature: -40° to +85°C	Humidity: 0% to 95% non-condensing
Transient / Surge Suppression	ANSI C37.90.1-1989 ANSI C62.45-1992	IEC 61000-4-4
Accuracy	ANSI C12.20 0.5 accuracy class	
General LCD Display	Five-digit liquid crystal display Annunciator height: 0.088"	Data digit height: 0.4" Electronic load indicator
Characteristic Data	Starting watts: 5 watts	
Temperature Rise Specifications	Meets ANSI C12.1 section 4.7.2.9	
Burden Data*	Voltage circuit: Voltage: 240 Watts: 0.5 VA: 7.5 Current coil-self contained test amp current: 60 Hz Service: 3-Wire Test current: 30 (amps) VA: <0.50	

At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: **www.itron.com**

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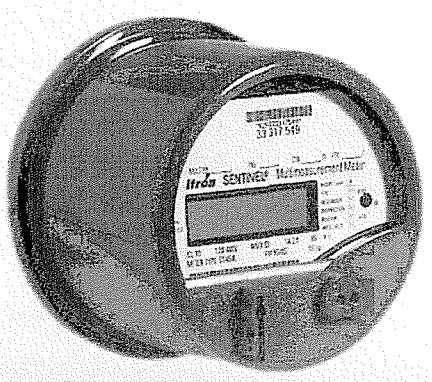
C&I Meter Reader
Itron® Sentinel

Industrial Strength Smart Metering
for High Demand Polyphase Accounts



The PP-1316 features a fully integrated Itron Sentinel® polyphase metering platform with smart communications powered by Tantalus' TUNet® network. The PP-1316 leverages the industry-renown Sentinel platform to provide a cost-effective and strategic smart meter deployment option for C&I customers.

This high-performance solution ensures that utilities continuously receive accurate, reliable, and timely data to power advanced applications such as dynamic pricing, load profiling, and load forecasting.

This translates to maximum system-wide benefit and minimized costs.

Itron Sentinel C&I Meters, Powered by TUNet

TUNet - the Tantalus Utility Network - provides a true two-way network for utility smart meter control. TUNet is easily deployable and a highly scalable solution designed to minimize the need for expensive infrastructure, complex implementation schemes, and recurring costs for wireline or wireless rental.

With TUNet's wide and reliable coverage, smart meters can be strategically deployed to C&I customers anywhere within the utility's service area.

Advanced C&I Applications Powered by TUNet

Instantaneous Power Quality Management
- Instant voltage sag & swell monitoring
- Provides voltages, power factor, line frequency

Enhanced Peak Demand Management
- Scheduled and ad hoc delivery of demand data
- Remotely modify reset demand schedule

Pro-active Outage Management
- Real-time outage and restoration notification
- Outage detection and configuration per phase

Anytime Metering
- On-request meter reads
- Scheduled automated meter reading on existing/new meter routes

Distribution Automation
- Customer-defined monitoring parameters
- Identifies and diagnoses distribution inefficiencies and solutions

Intelligent System Operation
- Self-negotiating, self-healing network communication
- Secure remotely upgradeable and configurable firmware

Tantalus

PP-1316 FEATURES

- Fully integrated, factory integrated smart meter platform
- TRUpush™ real-time event reporting
- TUNEup® over the air programming and control
- Reports and monitors KW, KWH, KVA, KVAR, PF
- Reports and monitors momentary outages, current (per phase)
- Customer configurable with contextual addressing via remote web-enabled software UI
- Supports interval data monitoring down to 5 minutes, delivered every 5 minutes
- Real-time outage, voltage, and power quality monitoring

PP-1316 BENEFITS

- Designed for meter-level installation maximizing ease and affordability of deployment
- Serves as managerial and customer service decision support software for informed and instant event response
- Minimizes the need for costly truck rolls
- Provides unmatched visibility into power quality and system health
- Increases operational efficiency
- Enables dynamic and real-time pricing schedules
- Provides instant notification and response capability for utility personnel
- Enables effective targeting of distribution improvements with the most impact to the business case and budgets

PRODUCT SPECIFICATIONS

Data Reported
- kWh and kVAh and/or kVA
- Peak Demand kW plus kVA or kVAr
  Instantaneous voltage: Phases A, B & C
- User defined interval data provided in increments as low as 5 minutes
- Ability to measure frequency

Radio
- Frequency range: 902-928 MHz ISM Band
- TUNet TRUpush Technology
- Vectored Channels: 64,000
- Data rate 10-300 kbps
- Transmit power: +27 dBm (0.5 watt)
- Receive sensitivity: -116 dBm
- Antenna: built-in

Meter Forms Supported
- Socket: 2S/3S/4S/5S/6S/8S/9S/12S/13S/ 14S/15S/16S/16S/17S/25S/26S/45S/56S/66S
- A-Base: 5A/6A/8A/9A/10A/14A/15A/16A/ 17A/45A/46A/48A
- Switchboard Ready: 5F, 6F, 8F, 9F, 45F, 46F

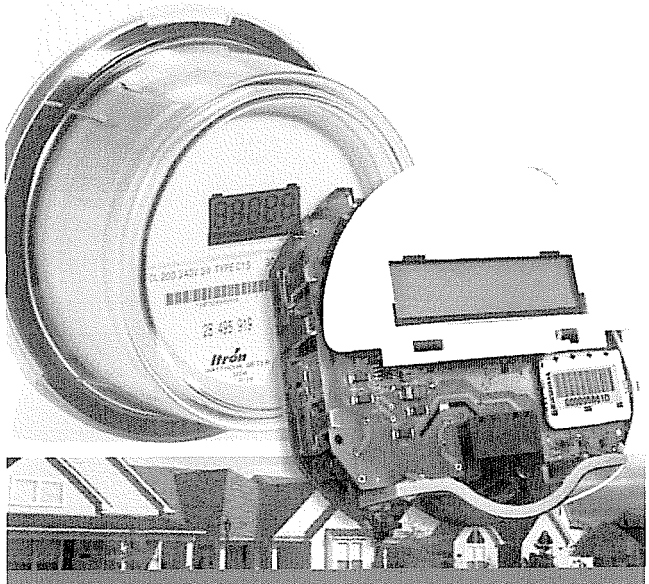
Power
- Supply: kV2c internal DC power supply
- Quiescent power: 1.9 watts typical

Environmental
- Operating temperature range: -40° to +176° F / -40° to +80° C
- Operating humidity range: 5% to 95% non-condensing
- Antenna housed securely under glass

Approvals / Standards
- ANSI C12.1: 2008 compliant
- FCC for CFR Title 47 Parts 15b & 15c

Itron CENTRON TPM Controller

Smart communications for Itron's popular solid-state 120 V and 240 V meters



Tantalus and Itron deliver smart meter precision, performance and flexibility. TUNet modules fit securely under-the-glass into CENTRON meters. The 900 MHz radio modem delivers the rich data contained in CENTRON meters direct to the utility via TUNet – the Tantalus Utility Network. The TUNet module reads directly from the register, which means there is no discrepancy between what is displayed on the meter and what is reported to the utility.

Better information leads to more accurate billing, greater reliability, and faster repairs. TC-1116 and TC-1216 modules eliminate the need to dispatch field crews to investigate every issue and provide CSRs with the ability to respond quickly and knowledgeably to customer inquiries. The result is improved 24/7 operational performance, minimal off-cycle reads, and fast customer service on every front, from clarifying statements to addressing blinking lights and brownout reports.

Tantalus transforms CENTRON meters into wireless communications devices that automatically capture endpoint data – in hourly intervals or more frequently if needed – to support dynamic TOU, CPP, or RTP billing. It enables a utility to precisely monitor power quality as well as instantly detect outages and verify restorations. It also allows control center staff to read in/out new customers and troubleshoot problems at the operations center. Reporting parameters can be changed remotely so a utility can tailor performance metrics without a site visit. Itron and Tantalus deliver precision and flexibility. By integrating CENTRON solid-state meters into TUNet, a utility can go beyond basic kWh monitoring and implement a two-way Smart Grid communications network. Tantalus gives a utility the freedom to introduce advanced functionality where the needs are greatest or where the return on investment is most attractive.

TANTALUS ADVANTAGES

- Reports kWh energy consumption, voltage, and outage
- Direct Register Read: the TPM Controller module is the Register of Record to eliminate the possibility of discrepancies
- Reports consumption in periods as low as 15-minute intervals
- On-request reads allow customer service to respond to inquiries and closely monitor endpoints remotely
- Remotely programmable operating parameters allow a utility to easily tailor performance measurements
- Measures voltage from:
  TC-1116: 85 to 130 V; accurate to ±1%
  TC-1216: 170 to 260 V; accurate to ±1%
- Reports voltage sags / swells / blinks to help ensure high quality power delivery to each home
- Field initiated outage & restoration alerts instantly notify staff of critical events
- Under-the-glass design fits into new or existing CENTRON meters
- Non-volatile memory maintains data during outages
- Automatically negotiates the best communications path
- Optional remote disconnect / reconnect available through the RD-1000; Remote Disconnect Under Glass also available from Tantalus
- Features Tantalus TruPush™ technology for instant, field initiated event notifications such as outage alerts or load shed success; no device polling required

Meter Forms Supported
- TC-1116 (120 V): 1S, 3S, 12S / 25S
- TC-1216 (240 V): 2S, 3S, 4S

Radio
- Frequency range: 902-928 MHz ISM Band
- TUNet TruPush™ Technology
- Vectored Channels: 64,000
- Data rate: 10-300 kbps
- Transmit power: +27 dBm (0.5 watt)
- Receive sensitivity: -116 dBm
- Antenna: built-in
- ZigBee under glass optional

Power
- Supply: 120 VAC from AC line mains (TC-1116)
- Supply: 240 VAC from AC line mains (TC-1216)
- Quiescent power: 1.9 watts

Physical
- Operating temperature range: -40° to +158° F / -40° to +70° C
- Operating humidity range: 5% to 95% non-condensing

Approvals / Standards
- ANSI C12.1 & C12.20 including California Utilities extensions
- FCC for CFR Title 47 Part 15b

Tantalus

www.tantalus.com | 604.299.0458

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

8. Refer to Exhibit 4, page 3, Assumptions.

a. Explain how the present worth rate of six percent was determined.

Response: Six percent was used for the present worth rate to adjust for the time value of money. Six percent was chosen in consultation with our internal finance staff, our independent auditor, and our actuary used for defined benefit calculations. Six percent is a relatively low number and is consistent with a conservative approach taken in the AMI evaluation.

b. Explain how the annual fixed charge of 13.85% was determined.

Response: The annual fixed charge is the summation of the operations and maintenance costs as a percentage of revenue, depreciation percentage, and the fixed rate for capital from RUS. The numbers at the time of the analysis were 6.1%, 3.2%, and 4.55% respectively.

c. Explain the reason for the difference in the operation and maintenance cost rate of 1% for AMR meters and 2% for mechanical meters.

Response: The decreased maintenance cost rate is consistent with the experience from other cooperatives throughout the state of Kentucky and the southeast that have installed AMI systems. The mechanical meters are older than the new AMI meters and therefore require more attention during routine maintenance.

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

8. d. Explain the reason for the difference in the inflation rate of 1% for AMR meters and 3% for mechanical meters.

Response: Similar to 8(c), FME is growing about one percent in new meters every year and is replacing approximately two percent of mechanical meters due to age, deterioration, and failures. After the initial installation of new meters for replacements, the same one percent in new meters will be added for growth.

e. Define SEC Labor and explain how the inflation rate of 4% for SEC Labor was determined.

Response: SEC was a typo – should have been FME for Fleming-Mason Energy. Four percent was a conservative estimate for wage and benefit increases.

f. Explain how the inflation rate of 2.4% for Contract Labor was determined.

Response: The contract labor rate is consistent with price increases for contracted meter reading services that FME has been using.

g. Explain the rationale for using 15 years as an evaluation period.

Response: The design life of the meters and modules is 20 years. Based on industry standards, FME expects the system to have a useful life of 15 years and plans to depreciate the assets over a 15 year period.

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

8. h. Throughout Exhibit 4 of the Application, there are several references to AMR. Did FME intend to use AMR or AMI?

Response: They are used interchangeable by FME.

i. Explain how costs will be eliminated for the PSC Voltage Recordings and how it determined the savings to be $2000.

Response: At this time, FME uses digital voltage recording devices to record voltages on the distribution system to meet annual requirements by the PSC. Engineers are required to download the data and qualified line technicians are used to set the meters and retrieve them after a determined period of time. The trucks, personnel, and time have a cost. When the transition to AMI is made, the voltages will be recorded for every meter, every hour. This will be used to verify voltage levels on the system. The estimated cost difference is $2,000 and is believed to be a conservative estimate.

j. Explain the difference between "Cost to Replace Existing Meter with AMR" ($12/each) and "Cost Associated with Meter Replacement" ($2/each).

Response: The cost of $12 per meter for AMI replacement is directly from quotes received from contract meter companies that will do this work. The cost includes changing the meter, taking a photo of the existing meter, building a database to retrieve the existing meter reading at some point in the future, and performing a final test on the old meter. This process will ensure that data is not lost and problems will be handled in case of failure by the new AMI meter. The $2 cost to replace a meter is a blended average for FME to replace a failed meter. These two costs were used in the analysis.

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

9. Refer to Exhibit 5 of the Application. It states "studies have shown that members electing to move to pre-pay metering consume from 7% to 12% less electric. FME plans to offer pre-pay as an option after AMI deployment".

a. What studies have determined that members electing to move to pre-pay metering consume anywhere from 7% to 12% less electric.

Response:

http://www.metering.com/i/100925WP01_Prepaid%20Metering_in_North%20America.pdf

Itron White Paper

Itron Enterprise Edition™
OpenWay® by Itron

Prepaid metering does have many benefits, including:
- A reduction in working capital assets.
- A reduction in uncollectible revenue.
- Improved customer service–providing more control in the hands of the consumer.
- Proven capabilities to reduce energy usage. Industry average quotes prepay customers use 15-20% less energy than those with conventional meters.[3] Salt River Project has quoted a 12% reduction in usage by customers who adopted prepayment.[4]
- Additional business case justification for advanced metering infrastructure (AMI).
- When positioned as a broader customer benefit, the utility may be able to recoup investment in rates.

[3] "Prepaid Metering Report 2007, 4th Edition", Chartwell
[4] Carolyn Johnson, presentation on Prepayment at Salt River Project, Chartwell Webinar 2008

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

9. a. Continued

http://www.oracle.com/us/industries/utilities/046584.pdf

An Oracle White Paper
March 2009

Serve Prepaid Customers Without Prepayment Meters

The Smart Grid Lets Utilities Offer Prepayment Services with Little or No Extra Cost

"The Conservation Effect

Prepayment has gained increased attention in the last several years. The primary reason is that customers switching from credit billing to prepayment almost always reduce their electricity consumption.

□□ Salt River Project reports a 12.8 percent reduction in energy use when customers switch from credit to prepay.[5]

□□ Northern Ireland Electricity says that prepay customers use 4.9 percent less electricity than the average customer.[6]

□□ Oklahoma Electric Cooperative reports that customers lowered consumption 13 percent after switching to prepayment.[7]"

[5] Jennie King, "M-Power: A Better Way to Keep Customers in Power," *Metering, AMR, and Data Management*, Energy Central, Jan. 18, 2007.
[6] Chartwell, Mark Hall, "Prepay Metering's Impact on Customer Energy Usage," Webinar, July 2008.
[7] Chartwell, Jonna Buck, Oklahoma Electric Cooperative, "Prepaid Experience," Webinar, July 2008.

9. b. What interest has been expressed by members of FME concerning pre-pay metering?

Response: No direct interest in pre-pay since this is not a familiar option in this area. But based on the success and positive feedback from Jackson Energy Cooperative in Kentucky and other utilities across the nation, it is our belief that this voluntary option would be of benefit to many of our members.

Fleming-Mason Energy
Case No. 2012-00361
First Data Request of Commission Staff

10. Refer to Exhibit 5 of the Application. Provide the rate of financing from Rural Utilities Service for the AMI system.

Response:

APPROXIMATE FFB QUARTERLY RATES

3-mo	6-mo	1-yr	2-yr	3-yr	5-yr	7-yr	10-yr	20-yr	30-yr
0.11	0.16	0.20	0.27	0.36	0.69	1.10	1.60	2.19	2.34

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11. Refer to numbered paragraph 7 of the Application where FME is requesting relief from sample testing of its single phase meters. Is Fleming-Mason current on its sample meter testing program?

Response: Yes

a. Provide information of FME's policy and procedures for meter removed from service and tested that are found to be in error of +/- 1.0 to +/- 1.9%

Response: FME does not back-bill nor refund for meters testing within 2% accuracy.

b. Provide information on FME's policy and procedures for meters removed from service and tested that are found to be in error greater then +/- 2%.

Response: FME follows the procedures set out in 807 KAR 5:041, Section 16, (5). This information is reported to the PSC on the Quarterly Meter Report.

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12. Refer to Exhibit 1, page 1, of the Application where a list of FME's "critical criteria" for selecting an AMI system is noted.

a. Explain bullet point 4, "Multi-Speak Compliant Software".

Response: MultiSpeak is an initiative to standardize the application program interfaces used by electric utilities. MultiSpeak compliant software will allow data to flow seamlessly into many applications that FME already has in place such as the customer billing software, outage management software and load management software.

b. Explain bullet point 5, "CIS Software Compatible".

Response: CIS is the acronym for Customer Information System or more commonly referred to as the customer billing system. FME currently utilizes the CIS software from Southeastern Data Cooperative for its customer billing and payment processes and it is critical for the AMI system to integrate fully with this software.

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13. Refer to Exhibit 2, page 3, of the Application which state "the WAN Collectors may be installed with one or two NiCad rechargeable battery packs . . ."

a. Explain where the Wide Area Network Collectors are located.

Response: Tantalus has two types of WAN collectors. The RT-3205 WAN collector is located on the side of a dwelling or other building in the meter socket. The XR-3100 WAN collector is pole-mounted and located wherever a WAN collection point is needed and a meter socket is not available.

b. Explain whether one or two NiCad packs will be installed.

Response: Each WAN collector is equipped with one battery. A second battery is an option to extended uptime of a given WAN Collector. FME may add a second battery at WAN collector locations that serve areas that typically have historically higher times to restore after an outage is seen.

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14. Refer to Exhibit 2, page 4, of the Application in the paragraph discussing Distribution Automation. This statement occurs in parentheses, (per phase for polyphase meters.)" Explain if polyphase meters are included in this Application.

Response: Yes this application does include polyphase meters.

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15. Refer to Exhibit 2, page 4, of the Application in the paragraph discussing Customer Access. The language states, "provided via the MDM web portal". Explain MDM.

Response: Meter Data Management (MDM) is software that presents meter interval data in a clear and useful manner. This information will be available for FME's customer service representatives to use in talking with customers about their usage or this information will also be available directly to our members via the Web, smart phones and other devices. Members will be able to view monthly, daily and hourly usage with integrated weather data to help understand their usage and recognize patterns and trends.

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16. Refer to Exhibit 2, page 4, of the Application. The last sentence states "FME will be able to present current consumption and rates data without to consumer smart phones and other personal communication devices." Clarify the meaning of this sentence.

Response: The last sentence should read: FME will be able to present current consumption and operational data without special reads or polling and will be able to send this data to consumer smart phones and other personal communications devices.

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17. Refer to Exhibit 5 of the Application.

a. The last sentence under the Cost-Savings Benefits paragraph states "it will reduce line losses through better collection and utilization of load data." Explain.

Response: AMI will provide more accurate consumption data that can be recorded in correlation with the monthly power bill. In the past, FME has been limited in matching customer usage by exact calendar month with the usage billed on the power bill which can affect the accuracy of line losses. Also, future Smartgrid applications such as Volt Var; Voltage Reduction and Phase Balancing may be utilized that can also help with line losses.

b. Explain how the AMI system will eliminate energy theft through the use of tamper detection.

Response: If a customer attempts to remove a meter, an alarm will sound on FME's outage management system that will immediately notify of an unauthorized access to a meter.

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18. Refer to Exhibit 6 of the Application. Break down the costs for Code 601 and explain how FME determined the need for 1000 remote disconnect meters.

Response:

Quantity	Description	$
22994	Single Phase Meters	2,241,909
330	Poly Phase Meters	142,725
1000	Auto Disconnects	126,700
	TOTAL CODE 601	2,511,334

The 1,000 remote disconnects was based on the number of locations in FME's service territory that has physically been disconnected and reconnected during the last 24 months for various reasons.

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19. FME has requested expedited treatment of this case in order to sign a contract on or before October 1, 2012 to lock in pricing. In the event the Commission approves this Application, provide the latest date that approval must be received in order for Fleming-Mason to lock in pricing.

Response: **October 15, 2012:** Please see Exhibit 4 attached.

Tantalus Systems Inc 1121 Situs Court, Situs 2, Suite 190 Raleigh, NC 27606 USA
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Joni Hazelrigg
Chief Financial Officer
Fleming-Mason Energy
P.O. Box 328
Flemingsburg, Kentucky 41041

Subject: Tantalus AMI Pricing

September 11, 2012

Dear Ms. Hazelrigg

The AMI proposal submitted to Fleming-Mason Energy (FME) on June 11, 2012 had validity for 90 days. We extend this validity date to October 15, 2012 to accommodate the approval process from the Kentucky Public Service Commission.

Please let us know if you have any questions or additional information.

Sincerely

Tamela Zucco

Tamela Zucco
Chief Marketing Officer
Tantalus Systems Inc.
Tantalus Systems Corp.