



115 Jackson Energy Lane McKee, Kentucky 40447 Telephone (606) 364-1000 © Fax (606 364-1007 APR 0 5 2013 PUBLIC SERVICE COMMISSION

April 3, 2013

Jeff Derouen, Executive Director Kentucky Public Service Commission 211 Sower Blvd. PO Box 615 Frankfort, KY 40602-0615

Re: Response to First Data Request Case 2012-00428

Mr. Derouen:

Please find enclosed the original and 14 copies of Jackson Energy Cooperatives' response to your inquiry dated February 27, 2013.

Please inform me if any further information is required.

Sincerely,

Clayton O. Oswald Attorney for Jackson Energy Cooperative

STATE OF KENTUCKY)

COUNTY OF JACKSON)

I, Ricky C. Caudill, state that I am the Planning Engineer at Jackson Energy Cooperative, that I have personal knowledge of the matters set forth in this application and attached exhibits, and that the statements and calculations contained in each are true as I verily believe.

This <u>2nd</u> day of <u>April</u> 2013.

Ricky Caudill

SUBSCRIBED AND SWORN to before me by Ricky C Caudill this ______ day of ______, 2013.

Cornee Reich # 470311 Notary Public, KY State at Large

My Commission Expires: 7-30 - 16

STATE OF KENTUCKY)

COUNTY OF JACKSON)

I, Patrick Head, state that I am the Information System Technician at Jackson Energy Cooperative, that I have personal knowledge of the matters set forth in this application and attached exhibits, and that the statements and calculations contained in each are true as I verily believe.

This <u>1</u>⁵¹ day of <u>April</u> 2013. Patie He

Patrick Head

SUBSCRIBED AND SWORN to before me by Patrick Head this ______ day of ______, 2013.

Curice Reid # 470311 Notary Public, KY State at Large

My Commission Expires: <u>7-30-16</u>

STATE OF KENTUCKY)

COUNTY OF JACKSON)

I, John Clevenger, state that I am the Information System Technician at Jackson Energy Cooperative, that I have personal knowledge of the matters set forth in this application and attached exhibits, and that the statements and calculations contained in each are true as I verily believe.

This 1 day of APRIL 2013.

John Clevenger

SUBSCRIBED AND SWORN to before me by John Clevenger this ______ day of ______, 2013.

Connic Reid # 470311 Notary Public, KY State at Large

My Commission Expires: 7 - 30 - 14

1. Since the Commission initiated Consideration of the New Federal Standards of the Energy Independence and Security Act of 2007, Administrative Case No. 2008-00408, has the company changed its position regarding Smart Grid? If so, how?

Response

Jackson Energy references the response to AG request 1 submitted by EKPC and adopts that response as its own.

2. Are the technologies pertaining to the implementation of Smart Grid definitely known and proven?

If yes, explain in detail every aspect from the use of each technology from the company to the end-user.

If not, explain in detail what technologies are already advancing/improving as well as those that are envisioned on the immediate time horizon.

Response by: <u>Ricky Caudill</u>

Jackson Energy has not conducted investigations into all aspects of fully implementing Smart Grid. In addition each vendor may use a different hardware and different software to implement a Smart Grid system. Therefore Jackson Energy cannot say that the technologies pertaining to implementation of Smart Grid are definitely known and proven.

N/A.

Jackson Energy has not conducted investigations into all aspects of fully implementing Smart Grid. Therefore it does not have an answer for this question

3. In light of resent catastrophic storms over the past ten years (for example, the various ice storms, tornadoes, and strong winds), which electric companies have experienced, and for which the company may ultimately have sought regulatory assets, can the company affirmatively state that its basic infrastructure, including all of its generation, transmission and distribution facilities, have proven to be reliable 24 hours a day, seven days a week, 365 days a week? If not, for each and every storm that it affected the utility in excess of two days, please provide the following:

- a. The number of days before the company's last ratepayer's electricity was restored for each storm.
- b. The average number of days, or hours if applicable, that the average ratepayer's outage lasted for each storm.
- c. The average financial loss for the average ratepayer for each storm, if known.

Response by: <u>Ricky Caudill</u>

Jackson Energy has not requested the recovery of regulatory asset costs due to catastrophic storms.

Jackson Energy has experienced outages to its distribution system, but constantly strives to provide reliable service to its members.

Jackson Energy enters data into the Outage Management System (OMS) database for every sustained outage on the system. The data in the OMS database cannot be queried in the manner requested in part a and part b of the request.

Due to the size of the Jackson Energy service territory it is not unusual for a storm to affect only part of the service area. So, on the same day that storm outage related data is being entered into the OMS other non-storm outage related data may also be entered as well. The same applies to the days following a storm. Data is not entered in such a way that it can be tracked for an individual storm separate from the other outage data.

Jackson Energy does document its system reliability data. In PSC Order 102607 relating to Commission Case 2006-00494, the Commission required the electric utilities in Kentucky file annual reliability reports with the Commission. The Commission required that industry standard indices of SAIDI, SAIFI and CAIDI be used. The Commission required these indices be calculated as defined in IEEE standard 1366. Jackson Energy has complied with these requirements and its annual reliability reports are on file with the Commission.

Jackson Energy does not have a way to calculate or track the information requested in part c of this question.

4. Does the company agree with the Attorney General that electricity is not considered a luxury service but a necessary commodity of modern life? If not, why not?

Response by: <u>Ricky Caudill</u>

Yes, electricity is a requirement of modern life.

5. Does the company agree that the fundamental reliability of its electric grid i.e., the delivery of electricity to the end-user 24/7/365 - is paramount to the enduser's ability to monitor and/ or conserve his/her demand or electricity consumption? If not, why not?

Response by: <u>Ricky Caudill</u>

If the word "paramount" refers to electric grid reliability taking precedence over the enduser's ability to monitor and/or conserve, then Jackson Energy references the response to AG request 5 submitted by EKPC and adopts that response as its own.

If the word "paramount" refers to electric grid reliability being necessary for the enduser's ability to monitor and/or conserve, then Jackson Energy would agree.

6. Please state whether the company is aware of any cybersecurity breaches effecting the electric and gas industries that have either occurred in the United States or internationally. If the answer is in the affirmative, please explain the details of the breaches without exposing information that is not already in the public domain.

Response by: <u>Ricky Caudill</u>

Jackson Energy is only aware of publicly available information. For example on January 23, 2012 the New York State Public Service Commission reported that an employee for a contractor had gained access to the databases of New York State Electric and Gas as well as Rochester Gas and Electric. The contractor worked for Iberdrola USA, the parent company of both utilities. The breach exposed the customer's Social Security numbers, birth dates and some account information.

7. Please confirm that the company is aware that the prior United States Secretary of Defense Leon Panetta, in speaking on the vulnerability of the nation's electric grid with the consequential safety and security concerns that ensue, warned the Senate Appropriations Committee on Defense that the risk to the United States could even be considered the equivalent of a "digital Pearl Harbor¹. Is this concern of the vulnerability of the nation's electric grid shared by the company? If not, why not?

Response by: <u>Ricky Caudill</u>

Yes, Jackson Energy is aware of the statement by former Secretary of Defense Leon Panetta.

a. Jackson Energy does not have access to the same resources available to the Secretary of Defense. Therefore Jackson Energy has to assume the Secretary of Defense knows whereof he speaks. Jackson Energy is concerned with the vulnerability of the electric grid to all forms of attack and works to minimize both the possibility and the impact of attacks.

8. With regard to cybersecurity in general, can the company unequivocally confirm that its system reliability is not vulnerable to a cybersecurity attack? If not, what could be the consequences? Please explain in detail as much as possible for the following:

a. the company, and

^{1 1} Comments by Secretary of Defense, Leon Panetta, U.S. Senate Appropriations Subcommittee on Defense, Hearing on FY 13 DoD Budget, June 13, 2012.

http://www.appropriations.senate.gov/webcasts.cfm?method=webcasts.view&id=08e51d6c-4a32-4fa4b09c-a006fa63c976

b. the company's ratepayers.

Response by: <u>Ricky Caudill</u>

Jackson Energy is not aware of any computer system that is invulnerable to attacks.

- a. Jackson Energy can maintain reliable operation of the distribution system without the use of the AMI or SCADA system. Not having these systems would decrease the efficiency of outage restoration, but it would not cause the distribution system to cease operating.
- b. Depending on the nature of the attack, possible outages until the AMI and SCADA systems are disabled. Then the outages would be restored.

9. Please provide the names of the standards, protocols or policies which the company observes and/or implements in its maintaining its system reliability from cybersecurity threats.

Response by: Ricky Caudill

The SCADA system resides on servers operated and maintained by East Kentucky Power Cooperative (EKPC). Jackson Energy references EKPC response 104 for the standards and protocols used for security of this system.

The AMI system is manufactured by Aclara. Jackson Energy Cooperative requested a list of standards and protocols used by Aclara. Jackson Energy has not received an answer prior to submitting this response.

10. Please provide copies of the standards, protocols or policies which the company observes and/or implements in its maintaining its system reliability from cybersecurity threats.

Response by: <u>Ricky Caudill</u>

The SCADA system resides on servers operated and maintained by East Kentucky Power Cooperative (EKPC). Jackson Energy references EKPC response 104 for concerns about making security protocols public.

The AMI system is manufactured by Aclara. Jackson Energy Cooperative requested a list of standards and protocols used by Aclara. Jackson Energy has not received an answer prior to submitting this response.

11. With regard to cybersecurity in general, can the company unequivocally confirm that its ratepayers' privacy of data cannot be compromised or otherwise divulged to any individual or entity not associated with the company, or a qualified third-party which has issues a non-disclosure statement or the ratepayers? If not, what could be the consequences? Please explain in detail as much as possible for the following:

a. the company, and

b. the company's ratepayer

Response by: John Clevenger and Patrick Head

Jackson Energy is not aware of any computer system that is invulnerable to social engineering and/or computer intrusion techniques.

Jackson Energy is Red Flag compliant and Payment Card Industry (PCI) Data Security Standard compliant. The software vendors that Jackson Energy contracts with are also Red Flag compliant and PCI compliant.

Jackson Energy uses firewall hardware, antivirus protection and spam filters to reduce cybersecurity threats. Jackson Energy works with software vendors that specialize in threat reduction software and practices.

- a. Exposure of employee personal information. Disruption of business transactions.
- b. Exposure of consumer personal information.

12. If a qualified third-party that has agreed to a non-disclosure statement and obtains ratepayers' private information, what guarantees exist that the information will not be disclosed, whether intentionally or unintentionally?

Response by: John Clevenger

None. Jackson Energy cannot control the actions of employees of third-party vendors. However the agreement may deter improper actions by vendors.

13. Please provide the names of the standards, protocols or policies which the company observes and/or implements in its maintaining its ratepayers' privacy data from cybersecurity threats.

Response by: John Clevenger and Patrick Head

Jackson Energy is compliant with Red Flag Rules established by the Federal Trade Commission.

Jackson Energy is Payment Card Industry (PCI) Data Security Standard Compliant as are the software vendors it contracts with.

Jackson Energy contracts with National Information Solutions Cooperative (NISC) for billing services. Jackson Energy references the response to AG request 13 by Clark Energy which lists the security protocols used by NISC.

14. Please provide copies of the standards, protocols or policies which the company observes and/or implements in its maintaining its ratepayers' privacy data from cybersecurity threats.

Response by: John Clevenger and Patrick Head

Jackson Energy is compliant with Red Flag Rules established by the Federal Trade Commission. Information about Red Flag Rules can be found at the website <u>www.ftc.gov/redflagrules</u>.

Jackson Energy is Payment Card Industry (PCI) Data Security Standard Compliant. Information about PCI Compliance can be found at http://en.wikipedia.org/wiki/PCI DSS

Jackson Energy references the response to AG request 14 by Clark Energy concerning the volume of documentation for NISC information.

15. Given the vulnerability of the electric grid to cyberattacks, describe what analog (non-digital) means the company will have in place to insure reliability, including but not limited to the maintenance of legacy systems.

Response by: <u>Ricky Caudill</u>

Jackson Energy has an Advanced Metering Infrastructure (AMI) system and substation level SCADA. Jackson Energy can maintain reliable electric service without either of these systems. Not having these systems will decrease the efficiency of outage restoration, but it will not cause the operation of the distribution system to cease.

16. What are the company's estimated costs to invest in order to fully implement Smart Grid?

a. Do any cost estimates include results of any modeling that may show the degree of exposure to the following risks: (a) hacking; (b) electronic magnetic pulses (EMPs, whether related to solar flares or otherwise); and/or (c) weather events? If so, provide a list of the modeling software used to produce any estimates, the scenarios and sensitivities examined, and any and all such results.

Response

Jackson Energy references the response to AG request 16 submitted by EKPC and adopts that response as its own.

17. Please explain in detail what benefits, if any, the company expects its ratepayers to realize because of Smart Grid?

a. Does the company believe that societal benefits are to be considered in evaluating benefits? If so, detail those societal benefits and how they may be used in evaluations? If not, why not?

Response

Jackson Energy references the response to AG request 17 submitted by EKPC and adopts that response as its own.

18. Would the company agree to strict limits and/or caps on ratepayer costs? If not, why not?

Response

Jackson Energy references the response to AG request 18 submitted by EKPC and adopts that response as its own.

19. Would the company agree to allow ratepayers to opt-out of smart meter deployment? If not, why not?

Response by: <u>Ricky Caudill</u>

Jackson Energy references the Jackson Energy response to PSC request 114 c.

20. Can the company quantify measureable and significant benefits that the ratepayers will realize, including a monetary quantification of net savings (if any) to ratepayers?

Response

Jackson Energy references the response to AG request 20 submitted by EKPC and adopts that response as its own.

21. Please explain in detail what detriments, if any, the company expects its ratepayers to realize because of Smart Grid? Include in the explanation both new costs as well as stranded costs.

Response

Jackson Energy references the response to AG request 21 submitted by EKPC and adopts that response as its own.

22. What are the company's estimated costs which the company expects the ratepayers to realize?

Response

Jackson Energy references the response to AG request 22 submitted by EKPC and adopts that response as its own.

23. What are the company's estimated costs which the company expects its shareholders, if any, to realize? Include in the explanation both new costs as well as stranded costs.

Response

Jackson Energy references the response to AG request 23 submitted by EKPC and adopts that response as its own.

24. Does the company agree that its costs to invest and implement Smart Grid will be different than other utility companies? If not, why not?

Response by: <u>Ricky Caudill</u>

Yes, Smart Grid costs for Jackson Energy would differ from other utilities.

25. Does the company agree that its ratepayers' benefits, whether financial or otherwise, may differ from one utility to another upon implementation of any Smart Grid technology? If not, why not?

Response by: Ricky Caudill

Yes. As Smart Grid projects may vary from utility to utility the benefits will also vary from utility to utility.

26. Can the company guarantee that the deployment of Smart Grid will not interfere with the regulatory compact whereby the ratepayers will receive safe, adequate and reliable service at fair, just and reasonable costs? If not, why not? Explain in detail.

Response

Jackson Energy references the response to AG request 26 submitted by EKPC and adopts that response as its own.

27. Answer the above question with the definition of "fair, just and reasonable costs" as being economically feasible for the end-user.

a. Provide any cost-benefit analysis that the company has run or will run to make the determination of economically feasible to the end-user.

Response

Jackson Energy references the response to AG request 27 submitted by EKPC and adopts that response as its own.

28. Regarding time of use (TOU) rates, can the company confirm that lowincome ratepayers will not be disproportionately affected more than non-lowincome customers? If not, why not? (Provide in the answers in any studies, reports, analyses and relevant data.)

Response by: Ricky Caudill

The effect on ratepayers of all income levels will depend on the structure of the TOU rates.

If the TOU rate is voluntary then any income level can choose whether or not to be on the TOU rate. Therefore a voluntary TOU rate would not affect low-income ratepayers disproportionately as they could simply choose not to participate.

29. With regard to TOU rates, does the company have any history with any such programs? If so, explain in detail with particular facts as to:

- a. the number of customers who participated;
- b. whether they remained on the program;
- c. whether they saved money on their bills; and
- d. whether the customers ultimately reduced their usage.

Response by: <u>Ricky Caudill</u>

Jackson Energy has two rates relating to Electric Thermal Storage (ETS) heating systems. Jackson Energy Rate 11 is for residential consumers and Rate 22 is for commercial consumers.

- a. Jackson Energy has 1,001 residential consumers and 15 commercial consumers.
- b. The number of consumers on the ETS rates has remained consistent.
- c. Yes, the consumers saved money.
- d. The purpose of the ETS rates is to shift load to off peak hours rather than reduce usage.

30. What proposals will the company present to deal with technological impediments to the broad use of Smart Grid, including but not limited to the following:

- a. low and fixed-income individuals who do not have Internet resources at their home;
- b. multiple forms of telecommunications technology used to access information (i.e., analog, cellular, VOIP); and
- c. multiple and proprietary technology and software options in the market that may lead to issues of compatibility?

Response by: <u>Ricky Caudill</u>

- a. Jackson Energy has an Advanced Metering Infrastructure (AMI) which uses Power Line Carrier (PLC) technology. The PLC technology has enabled Jackson Energy to implement prepay metering without the need for a telephone or internet connection at the end user location. The In Home Display (IHD) works via an electrical outlet in the home or business.
- b. Jackson Energy is aware of the various telecommunication technologies and is striving to work with them.
- c. Software vendors that Jackson Energy works with utilize the Multispeak protocol developed by the National Rural Electric Cooperative Association (NRECA) and the Cooperative Research Network (CRN). This has helped Jackson Energy deal with interoperability issues.

31. Assume: Full deployment of Smart Grid at the residential ratepayer level consisting of a household with only Energy Star appliances, an HVAC system with at least a 15 SEERS rating, etc. and any smart grid apparatuses/equipment for interconnectivity with the electricity provider (including generation, transmission and distribution).

- a. Does the company agree that if full deployment of the magnitude described in the above question occurs, the average residential ratepayer could experience a significant capital outlay?
- b. If so, what are the projected costs?
- c. If no costs are anticipated by the electric provider, why not?

Response

Jackson Energy references the response to AG request 31 submitted by EKPC and adopts that response as its own.

32. In regard to appliances, such as refrigerators or lighting, does the company agree that in the long run, it is cheaper for the end-user himself/herself to make that capital outlay for the purchase of the appliance or lighting than have the company provide the appliance(s) and build the costs into the company's ratebase which would then include a profit component for the company on an-going basis?

Response

Jackson Energy references the response to AG request 32 submitted by EKPC and adopts that response as its own.

33. Confirm that the Smart Grid depends, at least in part, if not exclusively, on telephony (whether landline, fiber optic, wireless or VOIP) at the end-user level for the end-user to participate in his/her altering his/her electricity usage patterns or behavior.

Response by: <u>Ricky Caudill</u>

Jackson Energy has an Advanced Metering Infrastructure (AMI) which uses Power Line Carrier (PLC) technology which has enabled Jackson Energy to implement prepay metering. The In Home Display (IHD) works via an electrical outlet in the home or business. There is a DSL connection between the Jackson Energy computers and the substations. No form of telephony is required at the end user site.

34. If the answer to the above question is in the affirmative, confirm that limited access or even complete absence of access to telephony will interfere with, if not prevent, the deployment of the Smart Grid at the end-user level.

Response by: <u>Ricky Caudill</u>

With the AMI and prepay metering system Jackson Energy has in place the end user does not require a telephone of any sort. The In Home Display (IHD) works via an electrical outlet in the home or business.

35. If the company intends to install infrastructure / software allowing for the transmission of Smart Grid / Smart Meter data over its distribution / transmission

conductors and networks, provide estimates, or actual numbers, for the costs of doing so.

Response by: <u>Ricky Caudill</u>

Jackson Energy completed the installation of a Power Line Carrier (PLC) AMI system in 2006. Jackson Energy does not intend to install any further infrastructure at this time.

36. Is there a standard communications' protocol that the company will deploy in its Smart Grid that will be interoperable regardless of the communications provider?

a. If not, explain how the company plans on addressing any problems that might arise.

Response by: Ricky Caudill

At this time Jackson Energy is not planning to fully implement Smart Grid. Therefore Jackson Energy does not have an answer at this time.

37. If improved reliability is the goal of Smart Grid / Smart Meter, would it not be more cost-effective to invest in infrastructure hardening (for example, utilizing protocols and standards developed and implemented by many utilities in hurricaneprone regions)?

Response by:

Jackson Energy references the response to AG request 37 submitted by EKPC and adopts that response as its own.

38. Describe the company's plans to avoid obsolescence of Smart Grid / Smart Meter infrastructure (both hardware and software) and any resulting stranded costs. (This question and the subparts should be construed to relate to both the Smart Grid Investment Standard as well as the Smart Grid Information Standard.)

- a. Describe who would pay for stranded costs resulting from obsolescence.
- b. With regard to the recovery of any obsolete investment, explain the financial accounting that should be used (as in account entry, consideration of depreciation, time period involved, etc.).

Response

Jackson Energy references the response to AG request 38 submitted by EKPC and adopts that response as its own.

39. With regard to interoperability standards, does the company agree that Smart Grid equipment and technologies as they currently exist, and are certain to evolve in the future, are not a one size fits all approach to the Commonwealth?

Response

Jackson Energy references the response to AG request 39 submitted by EKPC and adopts that response as its own.

40. Is dynamic pricing strictly defined as TOU?

- a. If not, explain why not.
- b. Is the company requesting that dynamic pricing be voluntary or involuntary, if at all?

Response

Jackson Energy references the response to AG request 40 submitted by EKPC and adopts that response as its own.

41. Please explain in detail whether the company has any dynamic programs in place in Kentucky.

- a. For each program, provide the number of participants.
- b. For each program, state whether those participants on aggregate have saved costs on their bills.
- c. For each program, state whether those participants on aggregate have saved costs on their bills.
- d. For each program, state whether each participant has saved costs on his/her/its bills. (The question is not intended to request any private identifier information.)

Response by: <u>Ricky Caudill</u>

Jackson Energy does not have any dynamic programs in place.

42. Does the company recommend the Commission to formally adopt the EISA 2007 Smart Grid Investment Standard? If not, why not?

Response

Jackson Energy references the response to AG request 42 submitted by EKPC and adopts that response as its own.

43. Does the company recommend the Commission to formally adopt the EISA 2007 Smart Grid Information Standard? If not, why not?

Response

Jackson Energy references the response to AG request 43 submitted by EKPC and adopts that response as its own.

44. Does the company recommend issuing an IRP Standard?

a. If so, what concerns does the company have with a standard, including "priority resource," especially as it relates to cost-effectiveness?

b. What concerns would the company have with a standard as it affects CPCN and rate applications?

Response

Jackson Energy references the response to AG request 44 submitted by EKPC and adopts that response as its own.

45. Does the company agree that any investment in grid modernization infrastructure should be done before deploying TOU rates or dynamic pricing? If not, why not?

Response

Jackson Energy references the response to AG request 45 submitted by EKPC and adopts that response as its own.

46. Regarding the Kentucky Smart Grid Roadmap Initiative (KSGRI), does the company believe that it provides the fundamental basis for the Commonwealth as a whole to proceed with Smart Grid given its lack of incorporating all electric utilities such as municipalities and the TVA, along with its distribution companies? If yes, please explain why. If not, please explain why not.

Response Jackson Energy references the response to AG request 46 submitted by EKPC and adopts that response as its own.

47. Does the company believe that the Commonwealth's electric industry is, or will become, so interconnected that all electric entities in any way involved or associated with the generation, transmission and / or distribution of electricity should be included and participate to some degree with Smart Grid if it is to come to fruition? If yes, please explain why. If not, please explain why not.

Response

Jackson Energy references the response to AG request 47 submitted by EKPC and adopts that response as its own.

48. Does the company believe that any Smart Grid Investment will trigger a CPCN case? If not, why not?

Response

Jackson Energy references the response to AG request 48 submitted by EKPC and adopts that response as its own.

49. Does the company believe that Dynamic Pricing should be economically feasible for the end-user and be supported by a cost- benefit analysis?

Response

Jackson Energy references the response to AG request 49 submitted by EKPC and adopts that response as its own.

50. If additional education is contemplated with the deployment of the Smart Grid, please explain in detail if known or contemplated.

Response

Jackson Energy references the response to AG request 50 submitted by EKPC and adopts that response as its own.