COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENTUCKY UTILITIES)	
COMPANY FOR CERTIFICATES OF)	
PUBLIC CONVENIENCE AND NECESSITY)	
AND APPROVAL OF ITS 2011) CASE NO. 20	11-00161
COMPLIANCE PLAN FOR RECOVERY BY)	
ENVIRONMENTAL SURCHARGE)	
)	

COMMISSION STAFF'S FIRST INFORMATION REQUEST TO KENTUCKY UTILITIES COMPANY

Kentucky Utilities Company ("KU"), pursuant to 807 KAR 5:001, is to file with the Commission the original and 15 copies of the following information, with a copy to all parties of record. The information requested herein is due on or before July 25, 2011. Responses to requests for information shall be appropriately bound, tabbed and indexed. Each response shall include the name of the witness responsible for responding to the questions related to the information provided.

Each response shall be answered under oath or, for representatives of a public or private corporation or a partnership or association or a governmental agency, be accompanied by a signed certification of the preparer or person supervising the preparation of the response on behalf of the entity that the response is true and accurate to the best of that person's knowledge, information, and belief formed after a reasonable inquiry.

KU shall make timely amendment to any prior responses if it obtains information which indicates that the response was incorrect when made or, though correct when made, is now incorrect in any material respect. For any requests to which KU fails or refuses to furnish all or part of the requested information, KU shall provide a written explanation of the specific grounds for its failure to completely and precisely respond.

Careful attention should be given to copied material to ensure that it is legible. When the requested information has been previously provided in this proceeding in the requested format, reference may be made to the specific location of that information in responding to this request. When applicable, the requested information shall be separately provided for total company operations and jurisdictional operations.

- 1. Refer to Appendix A of the Application at page 1. The bill impact upon an average residential customer is based on average usage of 1,000 kWh per month.
- a. Provide the most recent actual average usage for a residential customer and using the actual average usage, provide the monthly increase on both a dollar and a percentage basis in 2012 and 2016.
- b. Provide the information requested in Item 1.a for an electric spaceheating customer.
- c. Provide the information requested in item 1.a for an electric customer served under rate schedule GS.
- 2. Refer to the Direct Testimony of Charles R. Schram ("Schram Testimony") and Exhibits CRS-1 and CRS-2. Mr. Schram explains the methodology used to analyze the projects included in KU's 2011 Environmental Compliance Plan, presents the

evidence of the analysis, and makes the final recommendations related to the most cost effective method of complying with appropriate environmental laws and regulations.

- a. Was the effect of potential regulations concerning carbon mitigation considered in any of the analysis? Explain.
- b. If the answer to a. above is no, would the consideration of carbon mitigation change the proposed 2011 Compliance Plan? Explain. Include in the explanation whether additional unit retirements could result.
- 3. Explain the availability of contractors for both the ash pond and emission control systems for which construction is proposed. Include whether contractors for the work are specifically dedicated to environmental compliance work and if so, whether there is concern as to the availability of the contractors to meet Environmental Protection Agency ("EPA") deadlines.
- 4. Provide the age and estimated remaining life of each of KU's coal-fired generation units.
- 5. Explain whether there is currently any market for gypsum, or fly ash. Include in the explanation whether the EPA proposed ruling to establish federal guidelines for Coal Combustion Residuals ("CCRs) storage affects any potential marketability.
- 6. Refer to Schram Testimony at page 4. Beginning at line 7, Mr. Schram states, "we assumed that the proposed suite of environmental facilities for each unit was the most cost-effective suite of facilities for the unit; in other words, an analysis of numerous combinations of possible environmental controls for each unit was not necessary." Explain fully the reason(s) for this assumption.

- 7. Refer to Exhibit CRS-1 of the Application at page 4.
- a. The fourth column in Table 2 is labeled "Difference (A)-(B)". Should the column heading read "Difference (B)-(A)"?
- b. It is stated that installation of additional environmental controls on the Green River, and Tyrone units is not cost effective and the units will be retired pursuant to the 2011 Compliance Plan.
- (1) Provide the projected dates by which each unit is to be retired.
- (2) Provide the generating capacity to be lost upon retirement of the units and KU's plan to replace the power.
- 8. Refer to Exhibit CRS-2 of the Application at page 6. The low gypsum production at Brown in 2011 is due to the burn of low-sulfur coal through 2011. Compare the cost premium for low-sulfur coal with the cost savings of reduced coal combustion residuals.
- 9. Refer to the Direct Testimony of Shannon L. Charnas ("Charnas Testimony") at page 4. KU proposes to make modifications to Ghent Units 1, 3, and 4 to expand the operating range of the units at which their Selective Catalytic Reduction equipment can function to reduce nitrogen oxide emissions, but it does not propose to recover operation and maintenance ("O&M") expenses associated with these modifications.
- a. Explain the nature of these modifications and the resultant O&M expenses.

- b. Will the labor portion of the O&M expenses, if any, be performed by existing KU employees? Explain.
- c. Explain the decision to not request recovery of the O&M expenses associated with these modifications.
- 10. Explain whether the 2011 Compliance Plan will result in de-rating any of the affected units. If so, identity the unit, current rating, and projected rating by unit.
- 11. Refer to Exhibit GHR-3 of the Application, filed on CD-ROM. Pages 33-35 of the consent decree filed March 17, 2010 set out stipulated penalties for consent decree violations. For each penalty levied against KU since the consent decree became effective, identify:
 - a. The date(s) of the violation;
 - b. The nature of the violation;
 - c. The amount of the penalty; and
- d. Whether the penalty was, or is to be recovered from ratepayers, and if so, how the recovery was, or is to be recovered.
- 12. Explain whether the 2011 Compliance Plan will result in any of KU's units being taken offline? If yes, provide which units will be taken out of service and the specific period of time the units will be out of service.
 - 13. Refer to Exhibit 1, 2011 Plan, page 2 of 2.
- a. For each project listed, provide a breakdown of the estimated operations and maintenance expenses and explain how they were calculated.
- b. Ghent Unit 1 O&M expense increased from \$2,730,914 in 2013 to \$12,899,794 in 2014. Fully explain the reasons for an increase of this magnitude.

- c. Ghent Unit 2 O&M expense increased from \$2,183,254 in 2014 to \$12,112,005 in 2015. Fully explain the reasons for an increase of this magnitude.
- d. Ghent Unit 3 O&M expense increased from \$6,363,418 in 2015 to \$17,537,222 in 2016. Fully explain the reasons for an increase of this magnitude.
- e. Ghent Unit 4 O&M expense increased from \$5,848,876 in 2015 to \$17,391,503 in 2016. Fully explain the reasons for an increase of this magnitude.
- 14. Refer to Exhibit 3, Tariff. KU is proposing text changes in the "Availability of Service" section. Instead of listing the individual rate schedules to which the environmental cost recovery ("ECR") surcharge would apply, the proposed text lists the tariff sections to which ECR surcharge would apply. As a result of this proposed change, would the ECR surcharge apply to Rate Schedule RTP, Real-Time Pricing, when it does not apply to that schedule currently?
- 15. There appears to be evidence that credit markets have loosened. Discuss how KU will finance the proposed environmental compliance projects and explain whether it has received any indications of potential problems.
- 16. Provide a copy of KU's latest reports from its bond rating agencies and any other reports from rating agencies and or banks which discuss any risks facing the company which will affect its ability to borrow the necessary project funds.
- 17. Provide a copy of any bond rating agency and or bank reports which discuss any issues surrounding obtaining regulatory approval for construction projects based upon EPA rules that have not been finalized.

- 18. Explain whether KU is aware of any other electric generation utility that has filed a CPCN application with its state regulatory agency prior to EPA's new rules being finalized.
- 19. Refer to the Direct Testimony of Lonnie E. Bellar ("Bellar Testimony") at pages 10-12. In the final order in KU's most recent base rate case, at pages 26-31, there is discussion of testimony which supported return on equity ("ROE") estimates over a wide range for KU. The Commission found that KU's "required ROE for electric operations falls within a range of 9.75 to 10.75 percent with a midpoint of 10.25 percent." Pursuant to KRS 278.183(2)(b), the Commission must establish a reasonable return on capital expenditures for projects included in an environmental compliance plan.
- a. Notwithstanding that the parties in Case No. 2009-00548, with the exception of the Attorney General, signed settlement agreeing to an ROE of 10.63 percent, explain why a 10.63 percent ROE is appropriate on a going forward basis.
- b. Provide all economic analyses performed by or for KU that demonstrate a ROE of 10.63 percent is reasonable based on current economic conditions.
- c. If it is appropriate for the Commission to consider the 10.63 percent ROE established in KU's last rate case, and in the absence of any new testimony addressing the derivation of ROE estimates, explain why it would not be appropriate to consider the ROE testimony also.

¹ Case No. 2009-00548, Application of Kentucky Utilities Company for an Adjustment of Base Rates (KY. PSC, July 30, 2010).

- d. Provide all support for the position that the Commission's decision in KU's last rate case to accept a 10.63 percent ROE for environmental cost recovery obligates the Commission to now adopt that same ROE for a new environmental compliance plan absent a showing that a 10.63 percent ROE is now reasonable.
- 20. Refer to Schram Testimony at pages 3-4. The testimony references two related analyses which were performed by KU's Project Engineering department, along with Black & Veatch.
- a. Provide the reports and all supporting workpapers for the suite of environmental compliance facilities for each coal unit in the generation fleet to determine whether all of the proposed facilities would be necessary to meet the applicable environmental regulations.
- b. Provide the reports and all supporting workpapers for the determination for each generating unit if it would be more cost effective to install the facilities or to retire the unit and buy replacement power or generation.
- c. If not included in parts a. and b. above, explain how the analyses considered the purchase of power (renewable or otherwise) and provide the workpapers and assumptions for each specific power purchase scenario.
- d. As the costs of environmental compliance are realized, the relative price of smaller decentralized power generation becomes more attractive. Other utilities and companies in Kentucky are exploring the development of potential sources of generation including landfill methane, bio-digesters, biomass, and small natural gas wellheads. Explain whether the analyses considered the development of these or other

potential distributed generation sources and provide the workpapers and assumptions for each scenario.

- e. As the costs of environmental compliance are realized, the relative price of Demand Side Management and energy efficiency programs becomes more attractive. If not included in parts a. and b. above, explain whether and how the development of new and the expansion of existing programs is considered in the analyses.
- 21. Refer to Schram Testimony, Exhibit CRS-1, Section 6.0, Appendix A–Analysis Assumptions at page 48. Explain the derivation of the Desired Return on Rate Base of 6.71 percent.
- 22. Refer to Charnas Testimony at page 4, lines 11-15 which indicates the accounts that KU proposes to use to identify and track O&M costs for the Compliance Plan projects.
- a. Are other expenses charged to these accounts that are not related to the Compliance Plan projects?
- b. If so, how will KU ensure that only O&M expenses related to the Compliance Plan projects are recovered through the environmental surcharge?
- 23. Refer to the Direct Testimony of Robert M. Conroy ("Conroy Testimony") at page 6, lines 5-8. Can KU's accounting system allow for the use of additional subaccounts to permit accumulation of SAM sorbent costs by the project for which it is consumed?

- 24. Refer to Bellar Testimony at pages 5-6. At page 5, item 9, the projected cost is \$691 million. At page 6, line 20, the estimated cost of Project 35 is \$712 million. What is the total estimated capital cost for Project 35 at Ghent?
- 25. Refer to Bellar Testimony at page 12, lines 9-13. Mr. Bellar implies that an alternative revenue allocation should be considered. Is Mr. Bellar suggesting any alternative for consideration in this proceeding?
- 26. Refer to Bellar Testimony at page 14, lines 20-21. Mr. Bellar states that "contracting for certain parts of work" has commenced. List any contracts that KU has entered related to Projects 29, 34 and 35. Include the date of the contract, a description of the services and/or equipment included and the dollar amount of the contract.
- 27. Refer to Bellar Testimony at page 15, lines 15-16. Mr. Bellar states, "by filing now, KU has ensured that the CATR and HAPs Rule should be final before the Commission must issue its final order in this proceeding."
- a. In the event the HAPs rule is not final at the time the final order in this proceeding is due, what is KU's proposal to the Commission with regard to the approval of the certificates of convenience and necessity?
- 28. Refer to the Direct Testimony of John N. Voyles ("Voyles Testimony") at pages 9-10. Regarding the role of Black and Veatch:
 - a. Provide a copy of the contract(s) with Black and Veatch.
- b. Will the expenditures associated with the Black and Veatch contract(s) be included in the ECR?
- c. Have the expenditures that have been incurred to date been assigned to Projects 29, 34 and/or 35?

- d. If so, provide the amounts currently charged to each of the projects.
- 29. Refer to Voyles Testimony at page 22, lines 17-21. The testimony states that KU does not plan to enter into any contracts for equipment or construction until a final order is issued in this proceeding "unless entering into one or more such contracts would be necessary to ensure timely environmental compliance or to avoid significant market price or equipment availability risks".
- a. Has KU enter into any contracts for Projects 29, 34 and/or 35 to date?
- b. How will KU assess the market price or equipment availability risks associated with the related equipment or construction?
- 30. Refer to Voyles Testimony at page 23. Has KU issued any Requests for Quotations ("RFQs") for the equipment related to these projects? If so, provide the issue date of the RFQ, the equipment for which quotations are sought, and the due date for responses.
- 31. Refer to Voyles Testimony, Exhibit JNV-2, page 6, Environmental Air Compliance Strategy Summary. The discussion at the end of Section 3.0 indicates that the plans should not be considered final at this time. What is the expected range of actual expenditures that KU may incur for each of the three projects 29, 34 and 35?
- 32. Refer to Voyles Testimony, Exhibit JNV-2. Provide the following information for each unit proposed for the addition of air quality control ("AQC") equipment:
 - a. Year placed in service;
 - b. The number of normal cycles (stops and starts);

- c. The number of emergency trips and starts;
- d. Heat rate:
- e. Capacity Factor;
- f. Provide for the last 10 years of major internal and minor outages including the major projects completed during each outage;
- g. Provide an outline of the major availability and performance detractors;
 - h. Provide a condition assessment that includes;
 - (1) Condition of turbine.
 - (2) Condition of generator.
 - (3) Condition of boiler.
 - (4) Condition of balance of plant equipment.
 - i. Provide any formal life assessment or extension reports.
- 33. Refer to Voyles Testimony. Indicate whether any risk assessment was performed to determine probability of units meeting a 30 year projected life extension.
- 34. Refer to Voyles Testimony. Are there any capital costs included in individual unit budgets for replacement of major plant components such as turbine shells, rotors, generator components, steam leads, heaters, transformers. Have these costs been included in the economic assessment?
- 35. Refer to Voyles Testimony. Provide any analysis on replacement power costs for the 2015-2017 time period. Include potential long term purchases, bi-lateral contracts or other sources that may be available should there be delays in completing construction. What is the impact on heat rate of the selected option?

- 36. Refer to Voyles Testimony at page 11, line 17.
- a. Was there any analysis that considered a long term outage to replace the existing FGD in its present location?
- b. What is the incremental cost in performance and ancillary services required for a FGD located further from the unit?
- 37. Refer to Voyles Testimony at page 24, line 10. Provide any analysis to support the conclusion that purchased power would be more expensive, given all factors.
- 38. Refer to Voyles Testimony. Provide a color copy of the May 2011 presentation titled "Existing and Preliminary Air Quality Control Process flow Diagrams."
- 39. Refer to Direct Testimony of Gary H. Revlett ("Revlett Testimony"). Did KU or any of the PPL affiliated entities file comments on the May 3, 2011 version of EPA's HAPs proposed rule? If so, provide a copy of the comments.
- 40. Refer to Revlett Testimony at page 8, lines 3-8. Mr. Revlett notes that EPA expects to issue proposed rules for CATR II in the near future. It appears that the proposed regulation will likely result in further NO_x and SO_2 restrictions.
- a. Although the specifics of CATR II are not known, does KU believe that the modifications that it is proposing in this proceeding are likely to meet the more stringent compliance requirements of CATR II?
- b. Was the impact of carbon regulation considered as part of KU's analysis to determine the modifications proposed in this proceeding?
- c. Was the impact of NAQS revisions considered as part of KU's analysis to determine the modifications proposed in this proceeding?

- 41. Refer to Revlett Testimony at page 17, lines 13-21. Mr. Revlett discusses the preference of KYDWM for landfills for the disposal of CCRs. Provide support for this assertion.
- 42. Refer to Schram Testimony at page 4, lines 9-12. There it states that it was "assumed that the proposed suite of environmental facilities for each unit was the most cost-effective suite of facilities for the unit". However, it appears that with the assistance of Black and Veatch the most compliance-effective suite of facilities was selected. Explain how this assumption translates to most cost-effective suite of facilities.
- 43. Refer to Schram Testimony. For the evaluation of the Brown and Ghent air compliance projects, the construction of the environmental controls was compared to the retirement of the generation unit to determine the least cost method of compliance. At page 5, lines 5 6 Mr. Schram states that the replacement generation technology for the purposes of this analysis was a natural gas fired combined cycle combustion turbine. Was any consideration given to constructing a coal-fired generating unit? Explain why a coal-fired unit was not included in the analysis.
- 44. Refer to Schram Testimony. Provide the fuel forecasts for coal and natural gas as well as the source of the forecasts that were used to perform the analyses in Exhibit CRS-1, 2011 Air Compliance Plan.
- 45. Refer to Schram Testimony, Exhibit CRS-1, Appendix 6.1. The Exhibit provides the analysis assumptions. For each of the Financial Assumptions provide all documentation and calculations relied on to support those assumptions.

- 46. Refer to Schram Testimony. Provide details that describe both Strategist and PROSYM, including:
- a. Details on license, operation and any modifications developed for KU/LG&E;
- b. Inputs for all KU units, including, size, heat rate, outage projections,
 O&M costs, and other parameters used in the model;
- c. Provide all inputs from outside the KU/LG&E system that are used in the models; and
- d. When were model inputs updated? Do they consider projected changes in regional capacity and pricing due to the very AQC changes being proposed by KU/LG&E? Are retirements of units by utilities in other regions included in the models?
- 47. Refer to Charnas Testimony. At this time, have any costs been incurred for Projects 29, 34 and/or 35? If so, what are those amounts by project and have any of those expenditures been previously recovered through base rates?
- 48. Refer to Conroy Testimony at page 7. Mr. Conroy provides a table titled Environmental Cost Recovery Surcharge Summary. Provide copies of all documents and data inputs used to make the computations included in this table. Also provide these computations in an electronic spreadsheet with formulas included.
- 49. How do the changes between the proposed rule and the final Cross-State Air Pollution Rule impact the assumptions and results in your modeling and thus your recommendations in this case?

- 50. Do you anticipate that the cap and trade provision will provide any lower cost alternatives to KU? Will it provide any economic opportunities to allow the KU to create any new revenue streams?
- 51. Refer to Bellar Testimony at page 4. Mr. Bellar discusses the need to amend the project to convert the Main Ash Pond to a dry-storage facility. Are the O&M cost incremental to the original project or should there be any credit provided for the original project O&M?
- 52. Refer to Bellar Testimony. In this Project Kentucky Utilities proposes adding Particulate Matter Control Systems to serve all three Brown coal units and the four generating units at Ghent. Each Particulate Matter Control System comprises a pulse-jet Fabric filter ("baghouse") to capture particulate matter, a Powdered Activated Carbon ("PAC") injection system to capture mercury and a lime injection system to protect the baghouses from corrosive effects of sulfuric acid mist ("SAM"). Project 34 also includes installing SAM mitigation equipment consisting of sorbent injection systems on Brown Units 1 and 2 that is independent of the lime injection systems associated with the baghouses. (There is already a SAM mitigation system being installed on Brown Unit 3, which is part of the Selective Catalytic Reduction ("SCR") project the Commission approved as a part of KU's 2009 Plan.
- a. Explain the make and model and the technology of all pulse-jet fabric filter ("baghouses") to capture particulate matter.
- b. Explain the make and model and the technology of all PAC injection system to capture mercury.

- c. Is the technology of the Selective Catalytic Reduction ("SCR") proposed to be installed in Ghent and Brown units (Other than SCR used in Brown unit 3) the most cost effective and the most efficient available in the power generation industry? If there are other technologies available in the market, explain why they were not selected.
- d. Explain if the above Particulate Matter Control Systems technologies are flexible, so it can provide reduction of inhalable particulate required by future regulations.
 - 53. Refer to Voyles Testimony regarding the Brown wet ash pond.
 - a. How are the current wet ash pond costs being recovered?
 - b. What percentage of the approved project costs have been spent?
 - c. How much has been spent on the project to date?
- 54. Refer to Voyles Testimony at page 5. The statement passages concerning "the existing E. W. Brown Station ("Brown") Main Ash Pond and the construction of an Auxiliary Pond" indicate various project phase elevations. What are the starting pond bed elevations for these two ponds?
- 55. Refer to Voyles Testimony at page 8. Mr. Voyles states that only the Main Ash Pond expansion phases completed at the time the proposed CCR regulation becomes final would be "grandfathered" under the most lenient of the three regulatory alternatives contained in the proposed rulemaking (the so-called "D-prime" alternative; under either of the other two proposed regulatory schemes, there would be no such grandfathering of existing ash ponds.) As the rules become closer to finality, does the D-prime alternative seem more likely than the other choices?

- 56. Refer to Voyles Testimony. Did KU consider the need for a landfill type enclosure and its associated land footprint as a future possibility for CCR when it initially proposed its wet-ash solution?
- 57. Refer to Voyles Testimony at page 10. Mr. Voyles states, "...we were able to eliminate SCRs for certain units from the 2011 Plan." Provide details concerning the unit SCRs eliminated.
- 58. Refer to Voyles Testimony at pages 11 and 13. The testimony states that the existing SAM sorbent O&M costs are to be included in the Project 35's SAM sorbent O&M costs. What assurance is there that these costs will not be double counted when Project 35 is completed?
- 59. Refer to Voyles Testimony at page 12. Mr. Voyles states that for Ghent Project 35 that the proposed modifications will provide additional margin against the NO_x tonnage caps in the EPA regulations, thus deferring the need for additional SCR installations and supporting least-cost compliance with the proposed CATR, which will impose stricter NO_x emissions requirements on KU. By the use of the word "defer," what lifetime/timeframe do you expect from the proposed SCRs?
- 60. Refer to Voyles Testimony at page 12, concerning SCRs on units 1, 3 and 4 modifications, and page 19, adjusting the economizers.
- a. Describe the exact SCR modifications which allow the SCRs to operate at lower unit load levels.
- b. Explain how adjusting the economizers increases the flue gas temperature and also maintain efficiency.

- 61. Refer to Voyles Testimony at page 16. The testimony states that lime injection ahead of the baghouse protects the components from SAM corrosion. There is no mention of any FGD controls on any of these units; would not FGD's provide the same protection?
- 62. Refer to Voyles Testimony at page 19. The testimony states that one way to expand the operating range at which an SCR can operate efficiently is to adjust the economizers (the last boiler circuit component) on a generating unit to keep the flue gas at higher temperatures when operating at lower load levels.
- a. Does KU prioritize keeping the SCRs adjacent to the last boiler so that the flue temperature is at its maximum?
- b. What materials are used in the SCRs and do the materials affect the SCR cost and ability to remover toxins?
 - c. Are SCRs mature or evolving technology?
- 63. Refer to Voyles Testimony at page 20. The testimony states that the addition of new SCRs have the benefit of allowing KU's generating units equipped with SCRs to be dispatched economically over a broader operating range after the CATR goes into effect and fewer CATR NO_x allowances will be consumed. Having the ability to bring Ghent Units 1, 3, and 4 to lower operating levels while still having high degrees of NO_x removal will allow system operators greater flexibility to ensure economical generating system operation, ultimately resulting in cost savings for customers.
 - a. How do you define the cost savings?
- b. Has KU maximized the NO_x removal with the latest state of the art removal systems?

- c. Are there cheaper technologies which will allow the proposed limits to be met?
- 64. Refer to Voyles Testimony. Provide a brief discussion of the maturity and upgrade potential of:
 - a. Baghouse technology;
 - b. Powder Activated Carbon Injection;
 - c. Lime injection for SAM Systems;
 - d. FGDs (dry and wet); and
 - e. SCRs.
- 65. In Exhibit JNV-2 in the fifth paragraph on page 1, it states that, "After careful study and internal modeling...." Indicate which modeling software was used during the studies and indicate where the results are in the submittal or provide those results.
- 66. Refer to Schram Testimony at page 3. The testimony states that the Companies' Project Engineering department (working with an outside engineering firm, Black and Veatch) provided a suite of environmental compliance facilities for each coal unit in the Companies' generating fleet and asked us to determine whether all of the proposed facilities would be necessary to meet the applicable environmental regulations, some of which regulations require unit-by-unit compliance, some of which require compliance at the generating-station level, and others at the fleet level.
- a. Were environmental regulations studied and implemented on unitby-unit facilities or were they defaulted to the station or fleet level?

- b. Are there cases where the studies indicated that individual units in a station might be upgraded while others are left as-is?
- 67. Refer to Schram Testimony. For each project to be constructed, provide the PV for every alternative that was considered and the reasons they were eliminated. (provide all supporting calculations)
- 68. Refer to Schram Testimony. How was the estimated cost for each proposed project derived?
- 69. Refer to Schram Testimony. Did Mr. Schram send an RFP to construct the proposed facilities?
 - a. If no, explain why it is not necessary.
- b. If yes, provide a list to whom it was sent and the responses. Also, explain how the successful bidder was chosen.
 - 70. What is the impact of the planned retirements on KU's depreciation?
- 71. Are any costs associated with any retirements proposed to be recovered in this proceeding?

Jeff Derouen

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DATED ______ JUL 1 2 2011

cc: Parties of Record

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