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June 1, 2009

BY HAND DELIVERY

Ann Cole, Director
Division of Commission Clerk
and Administrative Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399

Re: *In re: Commission review of numeric conservation goals (JEA)*,
Docket No. 080413-EG

Dear Ms. Cole:

Enclosed for filing on behalf of JEA in the above docket are the original and fifteen copies of the following: Pre-filed Direct Testimony of **Richard J. Vento** and Exhibit Nos. __ (RJV-1 through RJV-3); and Pre-filed Direct Testimony of **Bradley E. Kushner** and Exhibit Nos. __ (BEK-1 and BEK-2).

By copy of this letter, the enclosed documents have been furnished to the parties on the attached certificate of service.

Please acknowledge receipt and filing of the above by stamping the enclosed extra copies of the Petition and testimony and return them to me. If you have any questions concerning this filing, please contact me at 425-2359.

COM 5
ECR 2
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Thank you for your assistance in connection with this matter.

Very truly yours,

HOPPING GREEN & SAMS, P.A.

By: Gary V. Perko

GVP/dwg
Enclosures

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished to all counsel of record and interested parties as listed below by hand-delivery (*) or regular U.S. mail this 12th day of June, 2009.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF RICHARD J. VENTO

ON BEHALF OF

JEA

DOCKET NO. 080413

JUNE 1, 2009

Q. Please state your name and business address.

A. My name is Richard J. Vento. My business address is 21 West Church Street, Jacksonville, Florida 32202.

Q. By whom are you employed and in what capacity?

A. I am employed by JEA. My current position is Director of Corporate Data Integration.

Q. Please summarize your educational background and professional experience.

A. I hold a Bachelor of Science in Business Administration from the University of Florida.

With 26 years in the utility industry, my experience includes electric production operations and maintenance, water and wastewater operations and maintenance, technology integration, load research and demand side management (DSM).

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is (1) to discuss JEA's unique customer base and demographics, (2) to discuss JEA's historical and ongoing commitment to conservation and demand-side management (DSM), (3) to describe the overall process used to develop DSM goals, (4) to explain JEA's approach to conservation and DSM, (5) to explain JEA's proposed DSM goals, and (6) to address areas the Public Service Commission Staff has expressed an interest in investigating through this Docket.

Q. Are you sponsoring any exhibits to your testimony?

A. Yes. Exhibit No. __ [RJV-1] is a copy of my résumé. Exhibit No. __ [RJV-2] presents a list of the DSM, conservation, and renewable programs currently offered by JEA and other activities in which we are involved. Exhibit No. __ [RJV-3] presents the estimated bill impact to JEA's residential customers for DSM measures passing both the Total Resources Cost (TRC) and Participants tests.

Q. How is JEA governed?

A. JEA's governing board consists of seven members appointed by the Mayor of the City of Jacksonville and approved by the City Council. The governing board sets the rates and policies governing JEA's operations. The JEA operating budget requires City Council approval.

JEA's board meetings are open to the general public and ratepayers are permitted to participate in board meetings. JEA's governing board sets policies and programs consistent with the best interests of JEA's customers and community.

Q. Please describe JEA's service territory.

A. JEA is the municipal electric utility provider for the City of Jacksonville and portions of St. Johns and Nassau Counties.

Q. Please describe the demographics of JEA's customer base.

A. JEA serves approximately 400,000 customers. JEA's customers are approximately 88 percent residential. Approximately 30 percent of Jacksonville's population lives in households whose income is less than twice the Federal Poverty Level ($29,140 for a family of 2). The combination of low income and rental customers presents special challenges to the effective implementation of conservation and DSM programs. Any impacts on rates resulting from implementation of DSM measures would have a disproportionate impact on low income customers. Furthermore, rental customers have less control over energy conservation efforts than homeowners.

Q. Please explain JEA's existing Commission-approved DSM and conservation goals.

A. JEA's 2005 Demand-Side Management Plan was approved by the Florida Public Service Commission on September 1, 2004 (Docket No. 040030). The

Commission established zero DSM goals for JEA's residential, commercial, and industrial sectors through 2014 based on the Ratepayer Impact Measure (RIM) test evaluations.

Q. What is the purpose of RIM test?

A. The purpose of the RIM test is to ensure that utility rates do not increase as a result of implementation of DSM measures, thereby ensuring that customers who cannot participate in the measure will not be penalized.

Q. Has JEA offered DSM programs to its customers since the Commission approved zero DSM goals in the 2004 goal setting process (Docket No. 040030)?

A. Yes. JEA has continued to voluntarily offer DSM programs to customers across all customer classes. JEA offers DSM programs that are directly quantifiable, as well as programs that are not directly quantifiable. Since 2005, the quantifiable DSM programs that JEA has voluntarily offered have saved a total of approximately 7 MW of summer peak demand, approximately 6 MW of winter peak demand, and nearly 62,100 MWh of energy.

Q. Has JEA taken any action to increase the level of conservation and DSM offered to its customers?

A. Yes. In June 2006, JEA established a policy to consider all DSM measures that passed the TRC test while maintaining an overall portfolio RIM value of no less than 1.0. The RIM constraint was to ensure no future upward pressure on

customer rates resulting from JEA's DSM programs. As a result of this policy, JEA developed a new DSM portfolio.

Q. Are current conditions affecting the new DSM portfolio?

A. Yes. Underlying assumptions used to develop JEA's new DSM portfolio have changed in light of the recent economic downturn. These assumptions include JEA's load forecast, the costs of fuels, and the costs and timing of avoided units. In light of these changes in assumptions, JEA will be re-evaluating our DSM portfolio.

Q. How were potential DSM measures identified and evaluated for JEA for purposes of this proceeding?

A. In response to the mandate of Section 366.80 through Section 366.85, F.S., JEA joined a collaborative (the Collaborative) with the other Florida Energy Efficiency and Conservation Act (FEECA) jurisdictional utilities to engage a single contractor (Itron) to identify DSM measures and evaluate the technical, economic, and achievable potential for DSM in each of the utilities' service areas.

Q. Please describe the Collaborative among the utilities and other entities.

A. The Collaborative consisted of the FEECA utilities, the Natural Resources Defense Council (NRDC), and the Southern Alliance for Clean Energy (SACE). The goal of the Collaborative was to evaluate the technical, economic, and

achievable potential for DSM in Florida. The Collaborative conducted workshops in conjunction with the Florida Public Service Commission Staff.

Q. Why was a collaborative approach taken?

A. The collaborative approach offered opportunity for reduced costs to the FEECA utilities in complying with the requirements of the Florida Energy Efficiency and Conservation Act. In addition, the collaborative approach allowed for a consistent methodology for the evaluation of DSM potential and formed a vehicle for non-utility stakeholders' input.

Q. Please describe the process of how the Collaborative selected Itron to be the consulting firm utilized to provide the necessary assistance in the DSM goals setting process.

A. The Collaborative selected Itron through a request for proposals (RFP) process administered by Florida Power & Light Company. The RFP was issued to several entities qualified to perform DSM potential studies for all the FEECA utilities.

Q. As the consultant selected by the Collaborative, what were Itron's responsibilities?

A. Itron's responsibilities included providing assessments of the technical and achievable potential for energy and peak demand savings from energy efficiency, demand response, and demand-side renewable energy for each of the

FEECA utilities, as well as Florida as a whole. Itron also provided economic potential estimates for JEA.

Q. How were potential energy efficiency, demand response, and demand-side renewable energy technologies identified?

A. A comprehensive list of measures was developed by Itron from their vast experience and supplemented with measures identified by the Collaborative, as described in detail in the testimony of Mike Rufo.

Q. How was JEA's achievable potential for the 2010 through 2019 period determined?

A. Achievable potential was determined for JEA by Itron as discussed in the testimony of Mike Rufo.

Q. What are JEA's estimated achievable potentials for residential and commercial/industrial energy efficiency based on the RIM test?

A. Itron's analyses indicated that there is no achievable potential for residential and commercial/industrial energy efficiency for JEA based on the RIM test.

Q. What are JEA's estimated achievable potentials for residential and commercial/industrial demand response?

A. Itron estimated achievable potential for residential and commercial/industrial demand response under two different scenarios for enrollment under critical peak price (CPP)/time of use (TOU) as discussed in the testimony of Mike Rufo.

The achievable potential under the high CPP/low TOU scenario is approximately 36 MW (summer) and 39 MW (winter) by 2019. The achievable potential under the low CPP/high TOU scenario is approximately 76 MW (summer) and 81 MW (winter) by 2019.

Q. What are JEA's estimated achievable potentials for residential and commercial/industrial demand-side renewable energy technology based on the RIM test?

A. Itron's analyses indicated that there is no achievable potential for residential and commercial/industrial demand-side renewable energy technology for JEA based on the RIM test.

Q. What cost-effectiveness test or tests should the Commission use to set DSM goals, pursuant to Section 366.82, F.S.?

A. JEA believes the process for evaluating DSM programs that was described earlier in my testimony is adequate and the most appropriate means for determining DSM programs for JEA. To the extent the Commission does set DSM goals for municipal utilities it should use, as a threshold, the results of the RIM test as the basis for setting DSM goals, particularly since the Commission does not have rate setting jurisdiction over municipal utilities. If the results of the RIM test indicate a DSM measure may be cost-effective, then it should also be required to pass both the TRC test and the Participants test.

Q. Has JEA provided an adequate assessment of the full technical potential of available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems, pursuant to Section 366.82 (3), F.S.?

A. Yes. The technical potential study performed by Itron, as described in the testimony of Mike Rufo, provided an adequate assessment of the full technical potential of available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems. Drawing upon their recognized expertise, Itron utilized its state-of-the-art models to comprehensively analyze the full technical potential of energy efficiency, demand response, and demand-side renewable energy technologies.

Q. Has JEA provided an adequate assessment of the achievable potential of available demand-side conservation and efficiency measures, including demand-side renewable energy systems?

A. Yes. The achievable potential study performed by Itron, as described in the testimony of Mike Rufo, provided an adequate assessment of the achievable potential of available demand-side conservation and efficiency measures, including demand-side renewable energy systems. Drawing upon their recognized expertise, Itron utilized its state-of-the-art models to comprehensively analyze the achievable potential of energy efficiency, demand response, and demand-side renewable energy technologies.

Q. Should the Commission establish additional goals for efficiency improvements in generation, transmission, and distribution?

A. No. JEA believes that efficiency improvements in generation, transmission, and distribution are supply-side issues.

Q. Should the Commission establish separate goals for demand-side renewable energy systems for the period 2010 through 2019?

A. No. The Commission should not establish separate goals for demand-side renewable energy systems. All goals should be established to promote cost-effective DSM without bias toward any particular technology. Furthermore, if demand-side renewable energy systems are cost-effective, utilities should have the flexibility to include such systems either as part of their renewable portfolio or as part of their DSM goals.

Q. Should the Commission establish separate goals for residential and commercial/industrial customer participation in utility energy audit programs for the period 2010 through 2019?

A. No. The Commission should not establish separate goals for residential and commercial/industrial customer participation in utility energy audit programs. Utility energy audits are performed as a result of customer interest in such audits, and the utility cannot dictate that customers have interest in receiving energy audits. Utilities should be allowed the flexibility to integrate energy audits into conservation programs as appropriate.

Q. Should the Commission establish incentives to promote both customer-owned and utility-owned energy efficiency and demand-side renewable energy systems?

A. No. As part of this Docket, we have comprehensively analyzed customer-owned energy efficiency and demand-side measures and none were found to be cost-effective. Utility-owned energy efficiency and renewable energy systems are supply-side issues.

Q. Please identify the 2010 through 2019 projected technical potential for JEA.

A. Projected technical potential for JEA is presented in the Executive Summary section of the *Technical Potential for Electric Energy and Peak Demand Savings for JEA* (dated April 7, 2009) which was developed by Itron and has been filed previously in this Docket.

Q. What overall DSM goals (peak demand and energy reductions) are appropriate and reasonably achievable for JEA for the 2010 through 2019 period?

A. In Order No. PSC-04-0767-PAA-EG the Florida Public Service Commission established JEA's DSM goals at zero for the period of 2005 - 2014. In that Order the Commission found that JEA appropriately evaluated the cost-effectiveness of measures using the RIM test. As noted earlier in this testimony, none of the DSM measures evaluated by Itron passed the RIM test. Consistent with the Commission's prior Order, the DSM goals for JEA should remain at zero through the current evaluation period ending in 2019.

As the Commission found in their 2004 Order, "...it is reasonable to allow JEA to determine whether or not it should continue to offer existing DSM programs as JEA is in the best position to determine its customer's needs." That same finding holds true today. As discussed previously, JEA has continued to evaluate and offer DSM programs. The DSM, conservation, and renewable energy programs currently offered by JEA as well as other activities in which JEA participates to promote energy efficiency and conservation are presented in Exhibit No. __ [RJV-2].

Q. What are JEA's proposed residential and commercial/industrial DSM goals for the 2010 through 2019 period?

A. JEA proposes that the DSM goals approved by the Public Service Commission for JEA's residential and commercial/industrial customers remain zero.

The results of the Itron study identified one demand response program that may have potential to provide cost-effective demand reductions. This program will be evaluated by JEA, consistent with the process outlined earlier in my testimony. If shown to be beneficial to our customers and the community, JEA will consider implementing such a program.

Q. Do JEA's proposed DSM goals adequately reflect the costs imposed by state and federal regulations on the emission of greenhouse gases, pursuant to Section 366.82(3)(d), F.S.?

A. Greenhouse gases are not currently regulated at either the State or Federal level, and there currently are no costs imposed on the emissions of greenhouse gases. JEA does not believe it is appropriate to base the establishment of DSM goals on speculation related to yet-to-be defined potential regulations of emissions of greenhouse gases. However, for informational purposes, Itron is performing additional analyses related to several different combinations of fuel and carbon dioxide emissions allowance prices.

Q. For JEA, what are the 2010 through 2019 annual bill impacts on residential customers using 1,200 kWh/month for the projected TRC achievable portfolio, the projected RIM achievable portfolio, and the company's proposed DSM goals?

A. Exhibit No. __ [RJV-3] presents an approximation of the annual bill impacts on residential customers for the TRC achievable portfolio projected by Itron due to the DSM measures included in the TRC achievable portfolio based upon information provided by Itron and JEA's projected annual revenue and energy consumption by year. As shown in Exhibit No. __ [RJV-3], the estimated bill impact is approximately 12.8 percent by 2019.

There is no incremental impact based on the RIM achievable portfolio, as there are no DSM measures that pass the RIM test for JEA based on Itron's analyses. As JEA has no proposed DSM goals, there is no incremental impact.

Q. Does this conclude your testimony?

A. Yes it does.

RESUME OF

Richard Vento, Director of Corporate Data Integration

JEA

Qualifications and Experience:

Summary

25 years of progressive experience in electric, water and sewer utility planning, operations and maintenance.

Areas of Experience

- Water and Electric System Operations and Maintenance
- New Product Development
- Program Development and Implementation
- Load Research
- Demand Side Management
- Advanced Metering Data Integration

Experience

JEA **2005-Present**
Director of Corporate Data Integration
Responsible for:
- Development and delivery of electric system demand side management program
- Development and delivery of water and sewer system demand side management program
- Development and delivery of electric and water Load Research
- Development and delivery of advanced uses of AMI systems and data to internal business process owners

JEA **2002-2005**
Director of New Technologies
Established a division to identify evaluate and recommend emerging technologies that would benefit the utility.

JEA **1999-2002**
Director of Water and Wastewater Operations and Maintenance
Managed all aspects of water and wastewater treatment O&M. Reorganized to ensure all regional treatment plants were managed as individual cost centers with performance accountabilities at the plant manager level.

JEA **1988-1999**
Manager, Generation Station Systems
Jointly Managed the maintenance of 3 steam units and 4 combustion turbines.

Education	Bachelor of Science in Business Administration from University of Florida Associates Degree in Biology Associates Degree in Electronics
Memberships	American Society of Energy Professionals Toastmasters International

JEA's Current DSM, Conservation, and Renewable Energy Activities

Residential Programs/Activities:

- Educational Seminars
  - Homebuyers workshops
  - Northeast Florida Community Action Agency (NFCAA) talks
  - Conferences
  - Event/show participation
  - Energy conservation meetings
  - Class instruction
- Energy audits
- School activities
- Paid media
- Solar (hot water and PV) Incentives
- Green Built Homes of Florida
- Residential Efficient Products
- Neighborhood Efficiency
- Other activities (bill inserts and JEA.com)

Commercial Programs/Activities:

- Energy audits
- District Chilled Water
- Energy Services Company (ESCO) partnership

Estimated Cumulative Annual Bill for 2010 through 2019 Residential Customers – DSM Measures Passing Both TRC and Participant Tests										
Calendar Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Percent Increase	0.6%	1.7%	3.0%	4.5%	6.0%	7.6%	9.0%	10.4%	11.6%	12.8%

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF BRADLEY E. KUSHNER

ON BEHALF OF

JEA

DOCKET NO. 080413

JUNE 1, 2009

Q. Please state your name and business address.

A. My name is Bradley E. Kushner. My business address is 11401 Lamar Avenue, Overland Park, Kansas 66211

Q. By whom are you employed and in what capacity?

A. I am employed by Black & Veatch Corporation as a Manager.

Q. Please describe your responsibilities in that position.

A. I am responsible for the management of various projects for utility and non-utility clients. These projects include production cost modeling associated with power system expansion planning, feasibility studies, and demand-side management (DSM) evaluations. I also have involvement in the issuance and evaluation of requests for proposals (RFPs).

Q. Please describe Black & Veatch Corporation.

A. Black & Veatch Corporation has provided comprehensive engineering, consulting, and management services to utility, industrial, and governmental

clients since 1915. Black & Veatch specializes in engineering, consulting, and construction associated with utility services including electric, gas, water, wastewater, telecommunications, and waste disposal. Service engagements consist principally of investigations and reports, design and construction, feasibility analyses, rate and financial reports, appraisals, reports on operations, management studies, and general consulting services. Present engagements include work throughout the United States and numerous foreign countries.

Q. Please state your educational background and professional experience.

A. I received my Bachelors of Science in Mechanical Engineering from the University of Missouri – Columbia in 2000. I have more than 9 years of experience in the engineering and consulting industry. I have experience in the development of integrated resource plans, ten-year-site plans, DSM plans, and other capacity planning studies for clients throughout the United States. Utilities in Florida for which I have worked include JEA, Florida Municipal Power Agency, Kissimmee Utility Authority, OUC, Lakeland Electric, Reedy Creek Improvement District, Tampa Electric Company, and the City of Tallahassee. I have performed production cost modeling and economic analysis, and otherwise participated in five Need for Power Applications that have been filed on behalf of Florida utilities and approved by the Florida Public Service Commission. I have also testified before the FPSC in Need for Power proceedings.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to discuss the methodology used to develop the avoided capacity costs that were provided to Itron for use in their analyses of DSM measures for JEA. I will also discuss the fuel forecasts that were used by JEA in their production cost modeling that was used as the basis for the avoided energy costs provided to Itron for use in their analyses of DSM measures for JEA.

Q. Are you sponsoring any exhibits to your testimony?

A. Yes. Exhibit No. __ [BEK-1] is a copy of my résumé. Exhibit No. __ [BEK-2] presents the carbon dioxide emissions allowance prices considered in JEA's analyses.

Q. How was the timing of avoidable capacity additions determined?

A. The timing of avoidable capacity additions was determined by utilizing the STRATEGIST optimum generation expansion planning model. The STRATEGIST model was used in JEA's Greenland Energy Center (GEC) Combined Cycle Conversion Need for Power Application, which was approved by the Public Service Commission in February 2009 (Docket No. 080614).

STRATEGIST analyzed JEA's projected annual peak demands over the 2010 through 2027 period and compared the peak demands to JEA's existing and planned new generation resources. In developing this comparison, a reserve margin of 15 percent was reflected. The capacity additions considered were

based on those included in the GEC Need for Power Application and included various sizes of simple cycle combustion turbines and a combined cycle configuration. The first year in which capacity requirements exceed available generating capacity is projected to be 2022, at which time it has been assumed for purposes of this analysis that a simple cycle combustion turbine (approximately 158 MW) would be added to satisfy the capacity requirements. Subsequent capacity shortfalls were met by the addition of simple cycle combustion turbines (either 158 MW or 98 MW units). Such additions were necessary in 2023, 2024, 2025, 2026, and 2027.

Q. How were capital costs for these combustion turbine additions calculated?

A. Overnight capital costs for the combustion turbines were based on the estimated capital costs for the generating unit alternatives presented in JEA's GEC Greenland Need for Power Application. The overnight capital costs were then escalated to the date each unit is assumed to be installed to satisfy capacity requirements, and interest during construction costs were also added. The resulting installed capital costs were multiplied by JEA's levelized fixed charge rate to determine a levelized installed capital cost, which was divided by the output of the combustion turbine to calculate the levelized installed capital cost per kW.

Q. How were fixed operating and maintenance (O&M) costs for these combustion turbine additions calculated?

A. Fixed O&M costs were based on the estimated capital costs for the generating unit alternatives presented in JEA's GEC Need for Power Application. The fixed O&M cost estimates were expressed in $/kW, and were escalated from 2008 dollars to nominal dollars at a 2.5 percent escalation rate.

Q. Please discuss how the total avoided costs per kW were calculated.

A. Total avoided costs per kW were calculated by adding the avoided capital costs per kW to the avoided fixed O&M costs per kW for each unit addition. The total annual avoided costs were calculated by multiplying the costs per kW by the kW output of the combustion turbines, and the resulting total costs for each unit addition were aggregated for all unit additions. The resulting total annual avoided costs were then divided by the total annual avoided capacity, and the annual total avoided costs per kW for all avoided units were carried forward and provided to Itron for use in their analyses of DSM measures for JEA.

Q. Were any sensitivities to the capital cost of avoided capacity additions considered.

A. Yes. JEA considered a high capital cost case in which the capital cost of the avoided capacity additions was increased by 20 percent and a low capital cost case in which the capital cost of the avoided capacity additions was decreased by 20 percent. The resulting avoided capacity costs for the high and low capital

cost cases were carried forward into development of total avoided costs per kW as discussed previously in my testimony.

Q. Please discuss the base case fuel price forecast.

A. JEA used the Reference Case fuel price projections that were presented in the GEC Need for Power Application as the base case fuel price forecast in this Docket. Reference Case fuel price projections were developed based on the US Energy Information Administration (EIA) Annual Energy Outlook 2008. The forecast fuel prices include applicable transportation costs and represent delivered fuel prices.

Q. Did JEA consider high and low fuel price sensitivities?

A. Yes. In addition to the base case fuel price forecasts, JEA considered the high and low fuel price cases that were presented in the GEC Need for Power Application.

Q. How did the fuel price forecasts consider of the possible costs associated with potential regulation of carbon dioxide (CO_2) emissions?

A. CO_2 emissions allowance prices were not reflected in the fuel price forecasts. However, as will be discussed later in my testimony, sensitivity cases were evaluated to address possible costs associated with the potential regulation of CO_2 emissions.

Q. Please explain the analyses that considered possible costs associated with potential regulation of CO_2 emissions?

A. There were three separate analyses performed that considered CO_2 emissions allowance prices. The three analyses reflected a range of CO_2 emissions allowance price projections.

Projected CO_2 emissions allowance prices were based on those presented in the US Energy Information Administration's (EIA) April 2008 *Energy Market and Economic Impacts of S.2191, the Lieberman-Warner Climate Security Act of 2007* report. This report was used as the basis of the CO_2 emissions allowance price projections included in the GEC Need for Power Application.

The three cases that were used as the basis for the CO_2 emissions allowance prices considered by JEA for this Docket are the *S.1766 Update* case (representing the low end of the range of the CO_2 emissions allowance price forecasts), the *S.2191 Core* case (representing the middle of the range of the CO_2 emissions allowance price forecasts), and the *S.2191 Limited Alternatives/No International* case (representing the high end of the range of the CO_2 emissions allowance price forecasts). Exhibit No. __ [BEK-2] presents the nominal CO_2 emissions allowance price projections for each of the cases that were used in JEA's analyses.

Q. How were the sensitivity fuel price forecasts and CO_2 emissions allowance price projections considered in JEA's analyses?

A. In addition to the base case fuel price forecast, JEA considered combinations of fuel and CO_2 emissions allowance price projections. These combinations are summarized as follows:

- "High Fuel Price with High CO_2 Emissions Allowance Costs" – reflects the high fuel price forecasts with the *S.2191 Limited Alternatives/No International* case CO_2 emissions allowance price projections.
- "Low Fuel Price with Low CO_2 Emissions Allowance Costs" – reflects the low fuel price forecasts with the *S.1766 Update* case CO_2 emissions allowance price projections.
- "Base Fuel Price with Mid CO_2 Emissions Allowance Costs" – reflects the base fuel price forecasts with the *S.2191 Core* case CO_2 emissions allowance price projections.

Q. How were marginal energy costs for each of the cases previously identified in your testimony developed?

A. Under my supervision and direction, JEA performed detailed production cost modeling using the PROSYM production cost model. Marginal energy costs were extracted from the model for each year.

These costs were provided to Itron, Inc. (Itron) for use in their cost-effectiveness analyses of DSM measures for JEA, which is discussed in the testimony of Mike Rufo.

Q. Were marginal energy costs developed for each of the fuel and CO_2 emissions allowance price cases discussed previously in your testimony?

A. Yes. Marginal energy costs were developed for the base fuel price case, and each of the combination of fuel and CO_2 emissions allowance price forecasts. The marginal energy costs are identical for the base capital cost and the high and low capital cost cases, as changes to the avoided units' capacity costs do not affect production costs.

Q. Does this conclude your testimony?

A. Yes it does.

Manager

Utility System Planning, Production Costing, Economic Analysis, and Demand-Side Management

Education
B.S., Mechanical Engineering, University of Missouri – Columbia, 2000

Experience
2000 – present

Joined Black & Veatch
2000

Mr. Kushner is responsible for production costing associated with utility system expansion planning, as well as feasibility studies and economic analysis. He also provides demand-side management evaluation. Mr. Kushner has been involved in the issuance and evaluation of requests for proposals (RFPs) and portfolio evaluations. Mr. Kushner has also presented expert testimony and prepared other experts for testimony related to determination of need proceedings and has also testified under cross examination by intervening parties.

Representative Project Experience

Federal Loan Guarantee Application Support, Confidential Client
2009
Serving in the role of Study Manager, Mr. Kushner provided support to facilitate completion of Part II of the Application to the US Department of Energy's Federal Loan Guarantee Program Office. The Part II Application submittal was structured to be consistent with the requirements set forth in the US Department of Energy solicitation number DE-FOA-0000008. The Part II Application consisted of a detailed project description, technical information related to the proposed project, the proposed project's business plan, and the proposed project's financial plan. Mr. Kushner's responsibilities included interfacing directly with the client and other consultants, working to coordinate the day-to-day activities of other Black & Veatch experts providing inputs for the Application, and drafting various sections of the submittal.

Siting and Capacity Expansion Planning Study, Western Farmers Electric Cooperative, Anadarko, Okla.
2008-2009
Serving in the role of Study Manager, Mr. Kushner provided production costing, economic analysis and various other support to facilitate completion of the Western Farmers Electric Cooperative (WFEC) Siting and Capacity Expansion Planning Study. The Study considered construction of three different combined cycle technologies at various sites as well as construction of coal fired capacity or purchase of nuclear power. The findings of the Study were presented to WFEC staff and will be presented to the WFEC Board of Directors in March 2009.

Greenland Energy Center Combined Cycle Conversion Need for Power Application, JEA, Jacksonville, Fla.
2008-2009
As Study Manager, Mr. Kushner provided production costing, economic analysis and various other support to facilitate the completion and filing of the Greenland Energy Center Need for Power Application (NFP). His work also included preparation of testimony related to the project to the Florida Public Service Commission (FPSC) as well as responding to interrogatories and production of documents requests throughout the discovery process. The NFP provides a determination of the most cost-effective capacity addition to satisfy forecasted capacity requirements.

The analysis considered self-build and purchase-power alternatives, including renewable energy technologies, and demand-side management. The project received approval from the FPSC in February 2009.

Supply-Side Technologies Characterization, Tampa Electric Company, Tampa, Fla.
2007-2009
As Study Manager, Mr. Kushner provided cost and performance estimates for various renewable, conventional and other generating technologies for client consideration in support of its determination of need filing. Technologies considered included approximately 20 renewable technologies, such as biomass, biogas, waste-to-energy, wind, solar, geothermal, hydroelectric and ocean energy; numerous conventional technologies, including simple and combined cycles; and two emerging technologies, both nuclear. Mr. Kushner also considered advanced, energy storage and distributed generation technologies.

Cane Island 4 Need for Power Application, Florida Municipal Power Agency, Orlando, Fla.
2007-2008
As Study Manager, Mr. Kushner provided production costing, economic analysis and various other support to facilitate the completion and filing of the Cane Island 4 Need for Power Application (NFP). His work also included preparation of testimony related to the project to the Florida Public Service Commission (FPSC) as well as responding to interrogatories and production of documents requests throughout the discovery process. The NFP provides a determination of the most cost-effective capacity addition to satisfy forecasted capacity requirements. The analysis considered self-build and purchase-power alternatives, including renewable energy technologies, and demand-side management. The FPSC approved the Cane Island 4 NFP in August 2008.

Valuation of Generating Unit Portfolio, Confidential Client
2008
As Study Manager, Mr. Kushner provided oversight on modeling and evaluation of purchase power contracts related to the Client's portfolio of generation assets throughout North America. The purchase power contracts were modeled to assess a monetary value to be used as guidance for valuation of the overall generation portfolio.

The portfolio of assets and associated purchase power contracts includes more than 50 models. Mr. Kushner was involved in the modeling of the contracts and quality assurance/quality control related to the entire portfolio prior to delivering evaluations to the Client.

Characterization and Selection of Nuclear Generating Technologies, AmerenUE, Missouri
2007-2008
As Project Analysis Engineer, Mr. Kushner provided assistance in the characterization and screening of various nuclear generating technologies for consideration by AmerenUE. The nuclear technology selected for further evaluation will be evaluated as part of the Client's Integrated Resource Plan (IRP) study.

The characterization included consideration of provisions of the Energy Policy Act of 2005 related to new qualifying nuclear plant capacity as well as relative comparisons of competing nuclear generating technologies. Client deliverables included two separate presentations to AmerenUE's Stakeholders.

Power Supply Study, Western Farmers Electric Cooperative, Anadarko, Okla.
2007
Serving in the role of Study Manager, Mr. Kushner provided production costing, economic analysis and various other support to facilitate completion of the Western Farmers Electric Cooperative (WFEC) Power Supply Study. The WFEC Power Supply Study was an update to previous capacity planning studies that evaluated the economics of various supply-side alternatives to satisfy forecast capacity requirements.

Integrated Resource Plan, Village of Rockville Centre, N.Y.
2007
As Study Manager, Mr. Kushner provided analysis and preparation related to the Village of Rockville Centre (RVC) Integrated Resource Plan (IRP). The IRP included consideration of RVC's existing generating system and strategic planning to satisfy forecasted system requirements. The strategic planning process included consideration of conventional supply-side options, interaction with the purchase power market, demand-side management measures, renewable supply-side alternatives and possible future environmental impacts.

Taylor Energy Center Need for Power Application, Various Clients, Florida
2005-2006
As Study Manager, Mr. Kushner provided production costing, economic analysis and various other support to facilitate the completion and filing of the Taylor Energy Center (TEC) Need for Power Application (NFP). His work also included preparation of testimony related to the project to the Florida Public Service Commission (FPSC). The NFP provides a determination of the most cost-effective capacity addition to satisfy forecasted capacity requirements for the four separate utilities participating in the project. The analysis considered self-build and purchase-power alternatives.

Integrated Resource Plan, City of Tallahassee, Tallahassee, Fla.
2005-2008
Serving as Study Manager, Mr. Kushner provided analysis and preparation related to the City of Tallahassee's (the City's) Integrated Resource Plan (IRP). The IRP included consideration of the City's existing generating system and strategic planning to satisfy forecasted system requirements. The strategic planning process included consideration of conventional supply-side options, demand-side management measures, renewable supply-side alternatives and possible future environmental impacts.

Integrated Resource Plan, Brazos Electric Power Cooperative, Texas
2006
Mr. Kushner, Project Analysis Engineer, provided assistance to Brazos Electric Power Cooperative (Brazos) in developing its Integrated Resource Plan (IRP). His work on this project included drafting a request for power supply proposals (RFP), analysis of responses to the RFP, review of Brazos production costing analysis and documentation of the final report. The IRP will provide strategic direction to Brazos, which is currently experiencing and is forecasted to continue to experience robust system growth.

Stanton Energy Center Unit B Need for Power Application, Orlando Utilities Commission, Orlando, Fla.
2005
As Study Manager, Mr. Kushner provided production costing, economic analysis and various other support to facilitate completion and filing of the Stanton Energy Center Unit B (Stanton B) Need for Power Application (NFP). His work also included preparation of testimony related to the project to the Florida Public Service Commission (FPSC).

The NFP provided a determination of the most cost-effective capacity addition to satisfy forecasted capacity requirements for the Orlando Utilities Commission. The FPSC approved the Stanton B NFP Application in May 2006, which represents the first coal-fired power plant approved in the State of Florida since 1991.

RFP Issuance and Evaluation, Western Farmers Electric Cooperative, Anadarko, Okla.
2005
As Project Analysis Engineer, Mr. Kushner coordinated with Western Farmers Electric Cooperative (WFEC) to draft, issue and evaluate a capacity solicitation (RFP) to secure forecast capacity requirements in the most cost-effective and reliable manner. The RFP process was undertaken through coordination with Rural Utilities Services (RUS) in an effort to obtain low-cost RUS project financing. This involved evaluation of numerous conventional as well as renewable technology proposals and culminated in the issuance of a short list and presentation to the WFEC Board of Directors.

Saint Johns River Power Park Annual Review, JEA, Jacksonville, Fla.
Annually 2003 - Present
As Engineering Manager, Mr. Kushner was responsible for the preparation of the annual report, which documented the previous year's operations of the St. Johns River Power Park. This included a summary of the findings of field activities, staff interviews, observations and document review associated with the Power Park.

10-Year Site Plan, FRCC Forms, EIA-860 and Annual Conservation Report Filings, Orlando Utilities Commission, Orlando, Fla.
Annually 2000 - Present
As Engineering Manager, Mr. Kushner was responsible for production costing and the economic analysis necessary to complete the Orlando Utilities Commission's 2006 10-Year Site Plan, which was submitted to the Florida Public Service Commission (FPSC).

Related to the 10-Year Site Plan were the Florida Reliability Coordinating Council (FRCC) filings, which were submitted to the FRCC via electronic database and forwarded to the Energy Information Administration (EIA) by the FRCC. The EIA-860 collects data related to the specific utility's existing and planned generating units. The Annual Conservation Report was prepared and submitted to the FPSC in order to summarize the utility's conservation and demand-side management efforts.

RFP Issuance and Evaluation, City of Columbia, Water & Light Department, Columbia, Mo.
2005
Serving as Study Manager, Mr. Kushner coordinated with the City of Columbia, Water & Light Department (the City) to draft, issue and evaluate a capacity solicitation (RFP) to secure forecast capacity requirements in the most cost-effective and reliable manner. This involved evaluation of numerous conventional capacity options under consideration by the City, as well as options proposed by respondents to the RFP. Mr. Kushner provided continuous communication with City staff as well as presentations to the City's planning committee.

Treasure Coast Energy Center Need for Power Application, Florida Municipal Power Agency, Orlando, Fla.
2005
In the capacity of Project Analysis Engineer, Mr. Kushner provided production costing, economic analysis and various other support to facilitate completion and filing of the Florida Municipal Power Agency's (FMPA) Need for Power Application (NFP). He also provided testimony related to the project to the Florida Public Service Commission (FPSC).

The NFP provided a determination of the most cost-effective capacity addition to satisfy forecasted capacity requirements. The analysis

performed for FMPA considered self-build and purchase-power alternatives. The NFP Application was approved by the FPSC in July 2005, representing a critical step in the permitting and licensing process in the state of Florida.

Stock Island Combustion Turbine Evaluation, Florida Municipal Power Agency, Orlando, Fla.
2004
Serving in the role of Project Analysis Engineer, Mr. Kushner performed production costing and economic analysis to determine the most cost-effective capacity additions to be located at the Stock Island site. The analysis considered two different generating units from specific manufacturers who responded to FMPA's request for bids.

Generation Expansion Study, Oman
2004
As Project Analysis Engineer, Mr. Kushner performed production costing and economic analysis to determine the most cost-effective capacity additions to satisfy forecast capacity requirements in the country of Oman. The analysis considered seven different generating technologies.

Integrated Resource Plan, Golden Valley Electric Association, Fairbanks, Alaska
2004
As Project Analysis Engineer, Mr. Kushner provided economic analysis in support of the Golden Valley Electric Association's (GVEA) Integrated Resource Plan (IRP). The IRP provided GVEA with recommendations of capacity additions that would satisfy forecasted capacity requirements in the most cost-effective manner.

10-Year Site Plan and FRCC Forms, Florida Municipal Power Agency, Orlando, Fla.
2005
Serving as Engineering Manager, Mr. Kushner provided assistance and support to the Florida Municipal Power Agency (FMPA) related to its 2005 10-Year Site Plan and subsequent submission to the Florida Public Service Commission (FPSC). Related to the 10-Year Site Plan were the Florida Reliability Coordinating Council (FRCC) filings, which were submitted to the FRCC via electronic database and forwarded to the Energy Information Administration (EIA) by the FRCC.

Due Diligence and Economic Analysis, Dairyland Power Cooperative, La Crosse, Wis.
2003
Serving as the Project Analysis Engineer, Mr. Kushner performed a due diligence review of the power supply planning efforts undertaken by Dairyland Power Cooperative (DPC). His work included development of

numerous capacity expansion plans and associated system production costing.

The analysis was done in compliance with the requirements of the Rural Utilities Services (RUS) to potentially obtain low-cost RUS project financing. This project also included a presentation of the study's findings to the DPC Board of Directors. Following the issuance of a request for proposals (RFP) for capacity supplies, Black & Veatch was released to perform additional production costing and evaluations of the bids and self-build options were completed. The results were then presented to DPC project personnel as well as RUS staff.

Numeric Conservation Goals Filing, JEA, Jacksonville, Fla.
2004
Serving in the role of Project Analysis Engineer, Mr. Kushner provided analysis related to and preparation of the JEA 2004 Petition for Approval of Numeric Conservation Goals, as required by the Florida Public Service Commission (FPSC).

The submittal included analysis of numerous demand-side management (DSM) measures to be considered by JEA in order to determine their cost-effectiveness. The process was required to be completed by JEA every five years, culminating in the eventual determination by the FPSC of the conservation goals JEA must satisfy each year.

Numeric Conservation Goals Filing, Orlando Utilities Commission, Orlando, Fla.
2004
As Project Analysis Engineer, Mr. Kushner was responsible for analysis related to and preparation of the Orlando Utilities Commission's (OUC) 2004 Petition for Approval of Numeric Conservation Goals, as required by the Florida Public Service Commission (FPSC).

The submittal included analysis of numerous demand-side management (DSM) measures to be considered by OUC in order to determine their cost-effectiveness. The process was required to be completed by OUC every five years, culminating in the eventual determination by the FPSC of the conservation goals OUC must satisfy each year.

Site Selection Study, Florida Municipal Power Agency, Orlando, Fla.
2003
As Project Analysis Engineer, Mr. Kushner coordinated and prepared a site selection study related to the potential construction of a new combined-cycle unit to be installed by the Florida Municipal Power Agency.

10-Year Site Plan, Florida Municipal Power Agency, Orlando, Fla.
2004

Serving as Engineering Manager, Mr. Kushner provided assistance and support to the Florida Municipal Power Agency (FMPA) related to its 2004 10-Year Site Plan and subsequent submission to the Florida Public Service Commission (FPSC).

Due Diligence, City Utilities, Springfield, Mo.
2003
As Project Analysis Engineer, Mr. Kushner provided due diligence and economic analysis to determine the most cost-effective capacity additions to satisfy forecasted system requirements for City Utilities – Springfield. Two options were considered, which consisted of constructing a second unit at an existing site and an independent developer's proposed construction of a unit at a new site.

Participation Agreement, Kissimmee Utility Authority, Orlando, Fla.
2002
In the role of Engineering Manager, Mr. Kushner led the development of a Participation Agreement between client (KUA) and another Florida utility governing ownership, construction and operation of a new generating unit at a KUA site. Mr. Kushner was active in meetings, coordinated with clients and incorporated various requirements to sufficiently complete the Agreement.

Capacity Planning Study, Western Farmers Electric Cooperative, Anadarko, Okla.
2002
Serving as the Project Analysis Engineer, Mr. Kushner handled the production costing and economic analysis to determine WFEC's most cost-effective expansion options to meet forecast capacity requirements. The capacity planning study was performed in support of the RFP issuance described above.

Feasibility Study, Kissimmee Utility Authority, Kissimmee, Fla.
2002
In the role of Engineering Manager, Mr. Kushner assisted in the coordination and preparation of a preliminary study to evaluate the feasibility of constructing a new generating unit at an existing Kissimmee Utility Authority site.

Capacity Planning Study, Braintree Electric Light Department, Braintree, Mass.
2002
Serving as the Project Analysis Engineer, Mr. Kushner provided the production costing and economic analysis to determine Braintree Electric Light Department's most cost-effective expansion options to meet forecast capacity requirements.

Integrated Resource Plan, City of Tallahassee, Tallahassee, Fla.
2001
As Project Analysis Engineer, Mr. Kushner assisted in the completion of the City of Tallahassee's Integrated Resource Plan (IRP), including evaluation of the City's demand-side management program alternatives.

Capacity Planning Study, Basin Electric Power Cooperative, Bismarck, N.D.
2001
Serving in the role of Project Analysis Engineer, Mr. Kushner managed the production costing and economic analysis necessary to provide Basin Electric Power Cooperative with recommendations as to which capacity additions would be most cost-effective to satisfy system requirements.

10-Year Site Plan, Lakeland Electric, Lakeland, Fla.
2001
As Project Analysis Engineer, Mr. Kushner assisted in the completion of Lakeland Electric's 2001 10-Year Site Plan, including consideration of Lakeland's capacity addition options.

Stanton Energy Center A Need for Power Application, Various Clients, Florida
2000
As Project Analysis Engineer, Mr. Kushner provided the production costing and economic analysis required in support of the determination of the most cost-effective expansion options to meet the individual needs of the Orlando Utilities Commission, Kissimmee Utility Authority and Florida Municipal Power Agency. His work also included preparation of a corresponding application to be presented to the Florida Public Service Commission, as well as written testimony in support of the commission.

CO_2 Emissions Allowance Price (per EIA's Analysis of S.2191)			
	Nominal $/Ton		
Calendar Year	S.1766 Update	S.2191 Core	S.2191 Limited Alternatives/No International
2010	N/A	N/A	N/A
2011	N/A	N/A	N/A
2012	7.72	17.76	53.26
2013	8.50	19.55	50.95
2014	9.35	21.52	55.09
2015	10.30	23.69	60.65
2016	11.33	26.08	66.77
2017	12.48	28.71	73.50
2018	13.74	31.60	80.91
2019	15.12	34.79	89.07
2020	16.65	38.30	98.06
2021	18.32	42.16	107.94
2022	20.17	46.41	118.83
2023	22.21	51.09	130.81
2024	24.45	56.24	144.01
2025	26.91	61.92	158.53
2026	29.63	68.16	174.52
2027	32.61	75.03	192.12