

STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

IN THE MATTER OF THE PETITION OF

SOUTH JERSEY GAS COMPANY

FOR APPROVAL OF INCREASED BASE TARIFF RATES AND CHARGES
FOR GAS SERVICE AND OTHER TARIFF REVISIONS

BPU Docket No.

OAL Docket No.

Direct Testimony

of

Frank T. DiPalma
Jacobs Consultancy, Inc.

1 **Q Please state your name and business address.**

2 A My name is Frank T. DiPalma. I am with Jacobs Consultancy Inc. (“Jacobs
3 Consultancy”). My business address is 206 Madison Avenue, Suite 1200, New
4 York City, New York 10016.

5

6 **Q What position do you hold at Jacobs Consultancy?**

7 A I am a Director in the Utilities Practice.

8

9 **Q What is your background and qualifications for your testimony in this**
10 **proceeding?**

11 A I am an energy industry management consultant with over 30 years of
12 experience assessing and working for electric and gas utilities. In addition to
13 Jacobs Consultancy, my consulting experience includes employment with Stone &
14 Webster Consultants as Associate Director. My direct utility operating experience
15 has been gained from being employed as an officer, manager or engineer for Public
16 Service Electric & Gas Company and Mountaineer Gas Company. My expertise
17 includes: general and operations management, distribution engineering, business
18 development, customer service, process engineering, project management, strategic
19 planning, and regulatory compliance.

20

21 As an energy industry management consultant, I have been frequently called upon
22 to perform reliability and safety assessments of the electric and gas delivery
23 function of utilities. I have successfully reviewed accounting controls and

1 performed statistical analyses and developed sampling techniques for a number of
2 clients including:

- 3 • Pacific Gas & Electric Company (PG&E) as a result of an order of
4 the California Public Utilities Commission (“CPUC”) relative to a
5 Vegetation Management Study. Jacobs Consultancy completed a
6 multi-year independent quality assurance audit to ensure that
7 PG&E’s tree trimming and Vegetation Management (VM) Programs
8 comply with the orders, rules and regulations of the CPUC and with
9 applicable tree-clearance standards. The budget for the Vegetation
10 Management program was \$140 million per year, the largest of any
11 US company.
- 12
13 • The quality assurance and audit focused on PG&E establishing
14 various forward-looking programs and activities including, but not
15 limited to vegetation control performance, customer refusals,
16 vegetation control management and recorded vegetation control
17 costs.
- 18
19 • Jacobs Consultancy performed statistical sampling of vegetation
20 throughout PG&E’s service area, recommending large cost-cutting
21 and efficiency measures based on vegetation classification and in
22 full compliance with regulatory requirements.
- 23
24 • A focused audit of Connecticut Light & Power Company’s
25 (CL&P’s) physical street lighting inventory; and accounting controls
26 and records for the Connecticut Department of Utility Control

1 (DPUC). In attempting to establish the fair market value for these
2 assets, the DPUC was concerned that the street lighting assets reflect
3 a systematic over assignment to the street lighting rate base. This
4 audit involved:

- 5
- 6 • CL&P's street lighting assets consist of over 163,000
7 streetlights in 42 towns with a reported net plant value of
8 \$20.4 million.
- 9 • Actual plant value of streetlights assets, which can be
10 affected by accounting practices, unit cost allocations,
11 incorrect asset records, and incorrect recording of expenses
12 as capital.
- 13 • Employment of a random sampling methodology to ensure
14 appropriate sample size to meet the desired error term and
15 confidence interval.
- 16
- 17 • Audit of Capital Budget Expenditures of Pacific Gas & Electric
18 Company for the CPUC. The CPUC required that a Capital Budget
19 Audit be conducted for Pacific Gas and Electric Company, covering
20 all electric and gas distribution construction expenditures in a given
21 year. The Construction Expenditure Budget consisted of over
22 10,000 projects with aggregate value exceeding \$800 million.
23 Significant challenges included:

24

1 I am a graduate of New Jersey Institute of Technology with a degree in Mechanical
2 Engineering, and Fairleigh Dickinson University with a Masters in Business
3 Administration.

4

5 A copy of my resume, which includes a list of electric and gas utility clients and
6 commission requested assessments, is attached to this testimony as SCHEDULE
7 FTD – 01.

8

9 **Q Please describe the activities of Jacobs Consultancy.**

10 A Jacobs Consultancy is part of Jacobs Engineering, one of the largest
11 professional services organizations with more than 55,000 employees world-wide.
12 As a Director in the Utilities Practice for Jacobs Consultancy, my engagements
13 cover a variety of engineering and operations related assignments in the electric and
14 gas utility industry, including litigation support, merger and acquisition assistance,
15 management audits, budget reviews and policy and procedure reviews.

16

17 **Q What is the purpose of your initial testimony in this proceeding?**

18 A I have been asked by South Jersey Gas Company (“SJG”, “Company” or
19 “South Jersey”) to provide testimony that will:

20 1. Describe Jacobs Consultancy's approach to estimating the cost of
21 replacing approximately 70,000 Rockford Eclipse (RE) valves currently in South
22 Jersey’s distribution system;

23 2. Provide a description of the approach South Jersey will use to
24 accomplished the RE Valve Removal Plan effectively and efficiently by making

1 every effort to incorporate RE valve replacements in combination with planned
2 (program) and unplanned operations and maintenance (non-program) work
3 activities; and

4 3. Provide a description of how actual costs will be accumulated and tracked
5 against the RE valve replacement estimate developed in Step 1 above, to assure that
6 all RE placement costs are tracked, and that only RE replacement costs are tracked.

7

8 My testimony is based on the information available at the time it was prepared. As
9 this case progresses, I plan to amend my testimony should new information become
10 available.

11

12 **Q Who assisted you in this review?**

13 A This independent investigation was performed under my direct supervision
14 and direction with the assistance of Stephanie Sadowsky and Jeffrey Gerber.

15 Copies of their resumes are included in SCHEDULE FTD – 02, and SCHEDULE
16 FTD – 03.

17

18 **Q How will your initial testimony lead to more detailed analysis in this**
19 **proceeding?**

20 A Once the estimating approach described above is completed with the
21 analysis of actual data, I will provide updated testimony with a final schedule and
22 cost estimate for replacing all of the RE valves and confirm how the actual costs
23 will be tracked.

24

1 **Q Can you describe in more detail the approach that Jacobs Consultancy**
2 **utilized, and will utilize in determining the cost of replacing approximately**
3 **70,000 RE valves currently in the South Jersey distribution system ?**

4 A While it is still too preliminary to quantify the total estimated cost, it is
5 important to note that the total estimated cost will include labor, material and
6 support components. The labor component will take into account: labor to replace
7 each RE valve, travel time to the job site, time to schedule the work where required,
8 supervisor time to inspect the removed RE valve, and clerical time to enter the
9 information into the system. The material component will be the cost of the
10 replacement meter valve and any associated materials (i.e. C Clamps) required to
11 complete the exchange. The support cost component will include items such as: the
12 Valve Identification Survey, RE Valve Tagging, Communications Plan, SJG Street
13 and Utility Department Training and Warehousing.

14

15 **Q How will you capture rely actual labor hours data?**

16 A We will rely on South Jersey's IT systems to provide us with utility
17 department hours and the street department hours needed to compile the actual time
18 required to perform the various scenarios of valve replacements as described in this
19 testimony.

20

21 **Q How would costs associated with materials and support costs be**
22 **gathered?**

23 A To date, replacement meter valves, any associated materials and RE Valve
24 Replacement Plan support costs have accumulated in deferred account 186.695 as a
25 line item in the Company's General Ledger, and will continue to be populated with

1 all ongoing support costs (i.e. surveys, communications, tagging). Additionally,
2 SJG has established account 186.696 which will specifically capture direct
3 materials costs and labor costs associated with the RE valve replacements.

4

5 **Q Will the labor cost component for replacing each RE valve be the same**
6 **for each valve removed from the South Jersey's distribution system?**

7 A It is still too preliminary to quantify the results of the labor time estimates
8 we intend to do during our analysis. It is important to note, however, that the labor
9 component of the cost of replacing each RE valve is dependent on whether other
10 operations, which SJG normally performs, can be combined with the RE valve
11 replacement. The objective is not to duplicate certain steps in replacing the valves
12 that are already required to perform other system maintenance activities. For
13 example, SJG estimates the amount of time required to perform valve replacement
14 in conjunction with other work is 15 to 30 minutes. However, when the valve
15 exchange is performed by itself the approximate time is estimated to be at least 60
16 minutes. This time difference results when the RE valve replacement is being done
17 in conjunction with other planned maintenance activities since there is a duplication
18 of purpose in activities necessary to complete the valve change out. Consequently,
19 when the RE valve replacement is done as an individual work activity, additional
20 time is required.

21 The labor time required will also vary depending upon other conditions.
22 For example, unobstructed access to a shut off valve at the curb may lead to a
23 shorter time frame.

1 **Q How will Jacobs Consultancy determine the estimated labor costs of**
2 **RE valve replacements to be completed on work done in combination with**
3 **other SJG work and work done as an individual work activity ?**

4 A Jacobs Consultancy will perform a time and motion study for work required
5 to be completed when the valve exchange is done in combination with other SJG
6 work and when it is done as an individual work activity. The refined labor time
7 estimates associated with the replacement of the RE valves will be combined with
8 the appropriate labor rates to determine the estimated labor cost of the
9 replacements. This study will be completed during the pendency of the test year.

10

11 **Q What other factors would affect the labor cost required to perform a**
12 **valve replacement?**

13 A There are a number of additional factors which will be considered when
14 determining the labor cost to perform the RE valve replacements:

15 • Curb stop is clear and operational - if the curb stop cannot be
16 located SJG's Street Department must locate and clear access to the
17 curb stop. This will require the Utility Department, the department
18 that would normally complete the RE valve replacement, to prepare
19 a Street Department work order and for a Street crew to travel to the
20 job site and perform the work necessary to ensure the curb stop is
21 clear and operational.

22 • No curb stop exists - if the curb stop was not installed at the
23 time of the original service line installation, the Utility Department
24 would once again prepare a Street Department work order for a

1 Street crew to disconnect or squeeze off the service and proceed
2 with the RE valve replacement.

3 • Travel to the job site - travel time to the job site will not be
4 incurred when the RE valve replacement is performed in
5 conjunction with other work. However, since only a portion of the
6 RE valve replacement work can be done in this manner, travel time
7 will be incurred when RE valve replacement is done as an individual
8 work activity. As the replacement of RE valves progresses, the
9 grouping of RE valve work will be managed by SJG to minimize
10 travel time. However, it is anticipated that over the course of the RE
11 valve replacement program travel times in the latter years will be
12 greater as the locations where the RE valves exist become more
13 scattered. Due to the variable nature of travel time as described, we
14 may rely upon SJG's loaded labor rates, which include a factor for
15 average travel time.

16 • Schedule the work - there are two types of scheduling
17 activities. The first involves the Street Department order concerning
18 the curb stop, which must be scheduled by a distribution supervisor.
19 This type of scheduling is included in SJG's loaded rate. The
20 second type, not included in SJG's loaded rate, involves attempting
21 to reach hard-to-reach customers where access to the premise is
22 essential before the RE valve can be exchanged. Hard-to-reach
23 customers are limited to those located along the barrier islands as
24 these are often seasonal homes, commercial and industrial
25 establishments. The scheduling activity for hard-to-reach customers

1 typically would involve SJG Customer Call Center activity as well
2 as the mailing of registered letters.

3 • Inspection of the removed RE valve - RE valves, which
4 show signs of failure upon removal, will be inspected by a
5 distribution operations supervisor to determine the condition status
6 of the valve; providing important feedback regarding the ongoing
7 condition of the remaining RE valves in service.

8 • Entering information into the IT system - information
9 regarding the removal of an RE valve needs to be updated on the
10 Meter Survey Information Screen of each customer's record.

11 For each of these labor related work activities Jacobs Consultancy will estimate the
12 frequency of occurrence, observe the required time and employ the appropriate
13 labor rate to arrive at an overall labor cost estimate.

14

15 **Q How will the appropriate labor rates to determine the estimated cost of**
16 **labor be developed?**

17 A Jacobs Consultancy would use South Jersey's appliance utility service rates
18 included in the Tariff for non-competitive services for Utility Department work and
19 South Jersey's distribution construction service rate for Street Department work.

20 These rates include costs associated with hourly wage, benefits, supervision and
21 dispatch, motor vehicle, travel time, administration, and overhead for each
22 respective workgroup.

23

24 **Q Describe how Jacobs Consultancy will estimate the frequency of**
25 **occurrence of the various RE Valve replacement scenarios?**

1 A In conjunction with the Company's RE Valve Replacement Plan, Jacobs
2 Consultancy has outlined the following approach to assure that the various RE
3 valve replacement scenarios are properly estimated.

4 For work done in combination with other SJG planned (program) or
5 unplanned customer generated (non-program) work:

- 6 • Identification and review of SJG's ongoing construction,
7 operation and maintenance programs, which when coordinated with RE
8 valve locations, provide opportunities for cost-efficient valve
9 replacement. The cost savings are generated by factors such as
10 eliminating the need for access arrangements and travel costs to the site;
11 and combining actions which would be repeated during the RE valve
12 replacement, such as gas supply shutoff and turn on and piping removal.
- 13 • Determination of how many RE valves may be replaced by each
14 type of work, based on the RE valve installation history, opportunities
15 provided by each work operation and its frequency, and sampling of
16 data of previous similar work to determine the number of RE valves
17 which would be encountered.
- 18 • Applying the planned (program) work schedules to determine
19 how many RE valves would be removed during the course of planned
20 work over a 15-year time frame; and similarly for unplanned (non-
21 program) work determining the historical frequency for encountering
22 RE valves.
- 23 • The opportunities for the replacement of the RE valves in conjunction
24 with planned and unplanned maintenance work are expected to decrease

1 over time as the pool of existing RE valves at customer premises
2 diminishes.

3 For work done as an individual work activity as part of the RE Valve

4 Replacement Plan:

- 5 • SJG has developed a Plan for replacing the RE valves not
6 expected to be replaced by planned or customer originated unplanned
7 work during the course of the 15-year timeframe. As described later in
8 this testimony, RE valve replacement work has already commenced in
9 some areas and will continue and be part of the RE Valve Replacement
10 Program, which starts in August 2011.

11

12 **Q How was the 15-year time frame chosen?**

13 A The 15-year time frame is in conjunction with the Plan submitted by South
14 Jersey to the BPU Bureau of Pipeline Safety, entitled “Summary of Actions to Date
15 and Path Forward”, dated May 20, 2009. It was submitted on a confidential basis,
16 and will be provided to the parties to this proceeding when appropriate safeguards
17 are in place.

18

19 **Q Describe the South Jersey planned (program) or unplanned (non-
20 program) customer generated work which can be done in combination with
21 the RE valve replacements?**

22 A Planned work is work that is part of an existing SJG program which could
23 be done in combination with RE valve replacements. Programs include:

- 24 • Main and Service Replacement Programs

1 - South Jersey has a compliance driven accelerated main and service
2 replacement program. Currently, work is identified and scheduled on a
3 three-year basis. There are approximately 175 locations where the RE
4 valves are located on bare steel service lines associated with the bare
5 steel mains that are scheduled to be replaced over the next three years.
6 The remainder of the RE valves to be replaced in conjunction with this
7 program will be quantified annually by SJG for the upcoming three year
8 increment.

9
10 - 20% Service Replacement Program - South Jersey tracks its
11 replacement of service lines within distinct sections, such as blocks, to
12 be aware of trouble-prone areas exhibiting corrosion and leakage. If and
13 when 20% of the service lines in an area have been replaced over a three
14 year timeframe, then South Jersey will replace all of the remaining
15 service lines in that area. It is estimated that approximately 175 RE
16 valves will be replaced in conjunction with this planned work over the
17 next three years, although this estimation contains a large number of
18 variables affecting the likelihood of RE valves being present.

19
20 • Meter Age Change Program - Once a meter with less than 500 cubic
21 feet per hour (CFH) capacity is 9 years in service, it is grouped by the
22 year it was installed, and then sampled in the 10th year as part of a 200
23 meter change sample, done annually. If the sample shows that of the
24 200 meters sampled, less than 80% are within the accuracy limits of 2%
25 error slow or fast and more than 10% of the meters are measuring gas

1 flow more than 2% fast, then there is a forced change out of the
2 remaining meters in that family. Most of the meters after 20 or 25 years
3 of service are in a plan where they must be replaced. Of the 70,000 RE
4 valve locations there are 2,400 that have been designated for removal
5 over the next four years. It is estimated that these would be
6 supplemented by additional 600 to 800 meters removed every year, then
7 diminish each year as I describe later in my testimony.

8
9 Unplanned (non-program) customer generated work, which is not part of an
10 existing SJG program, can be done in combination with the RE valve replacements
11 whenever a Utility Department worker encounters an RE valve at a work location
12 that can be changed without Street Department support. These situations include:

- 13 • Meter turn on or turn offs – This grouping includes meters turned on or off
14 for any reason such as customer moving or nonpayment. South Jersey
15 estimates initially that 3,900 RE valves annually might be at locations
16 where turn on or turn offs are conducted, based on a past history.
- 17 • Leak investigation involving service renewals or service leak repair – South
18 Jersey conducts a lock and test of meters on leak investigations and
19 consequently needs to inspect and operate the meter shut off valve. SJG
20 estimates initially that 1,000 RE valves annually might be at locations
21 where leak investigations are carried out based on a history of where these
22 have been conducted.
- 23 • Meter changes - when meter changes occur for any reason outside of the
24 Meter Age Change Program requirement such as a leaking meter, noisy
25 meter or high bill complaint.

1 A table illustrating South Jersey planned (program) or unplanned (non-
2 program) customer generated work which can be done in combination with the RE
3 valve replacements is included in SCHEDULE FTD – 4.

4 Valve replacements made in conjunction with the above mentioned events
5 will mitigate the actual costs of the replacements.

6

7 **Q When would planned (program) or unplanned (non-program)**
8 **customer generated work begin?**

9 A The planned (program) or unplanned (non-program) customer generated
10 work, as described above, is in accordance with existing and ongoing construction,
11 operation and maintenance activities, and is already underway.

12

13 **Q When would work done as an individual work activity as part of the**
14 **RE Valve Replacement Plan begin and when would it be completed?**

15 A Certain work done as individual activity work as part of the RE Valve
16 Replacement Plan is already underway. RE valves located in the business district
17 have been prioritized for replacement because they include buildings like schools,
18 hospitals, churches, and other places of large gatherings. This grouping includes
19 approximately 3,300 RE valves. South Jersey has already started to replace these
20 valves. All RE valves located at schools were replaced by September 1, 2009. The
21 remaining locations in the business districts will have their RE valves replaced by
22 December 31, 2012. Since this work represents valve replacement on an individual
23 basis and not completed in conjunction with other SJG work, it will provide
24 additional data for the time required to perform RE valve replacements work.

1 At the behest of the BPU Bureau of Pipeline Safety, South Jersey will
2 conduct an accelerated Atmospheric Corrosion Survey of RE valves. Normally
3 conducted over a three-year period the Survey is being completed in two years to
4 identify the presence of atmospheric corrosion at RE valves. RE valves exhibiting
5 evidence of significant atmospheric corrosion will be prioritized for replacement.
6 The accelerated Atmospheric Corrosion Survey for RE valves is scheduled to be
7 completed by April 30, 2011.

8 Following the conclusion of the Survey, a final plan for prioritizing and
9 replacing all RE valves will be developed and provided to the BPU no later than
10 July 31, 2011. The remainder of the RE Valve Replacement Plan work, including
11 the replacement of all RE valves not associated with other work, would begin on or
12 near August, 2011. Replacement of all identified RE valves is anticipated to be
13 completed on or near August 1, 2026.

14 SCHEDULE FTD –4 also illustrates the quantity of RE valve replacements
15 anticipated when is work done as an individual work activity as part of the RE
16 Valve Replacement Plan.

17

18 **Q Explain why SCHEDULE FTD-4 anticipates a number of valves being**
19 **replaced prior to the start of the RE Valve Replacement Program?**

20 A South Jersey proposes to replace all of the RE valves by the end of the 15
21 year work schedule, which commences on or near August 2011. Prior to then, it is
22 anticipated approximately 8,700 RE valves will have been replaced as a result of
23 current and anticipated construction, maintenance, operations, customer originated,
24 business district, and atmospheric corrosion survey activities.

25

1 **Q Why does SCHEDULE FTD-4 show decreasing levels of RE valve**
2 **replacement in future years in all areas of planned and unplanned work?**

3

4 A This decreasing rate over time reflects my earlier comment that as the pool
5 of existing RE valves diminishes due to replacements completed, the opportunities
6 for the replacement of the remaining RE valves still at customer premises are
7 expected to decrease over time.

8

9 **Q. What do you expect will result from your approach?**

10 A We will develop a set of procedures which will accurately track the costs of
11 all RE valve replacements. We understand that the Company will seek to recover
12 these costs through a Reliability Tracker. Our procedures will ensure that these
13 costs are appropriately accounted for and recovered.

14

15 **Q Does this conclude your initial testimony?**

16 A Yes, it does.

17

18

Name: FRANK T. DiPALMA

Title: Director

Education: Fairleigh Dickinson University, MBA Management/Finance
New Jersey Institute of Technology, BS Mechanical Engineering
University of Michigan, Executive Development Program

Professional

Affiliations: American Gas Association
—Customer Service and Utilization Committee (Past Vice Chairman)
Southern Gas Association
University of West Virginia, Institute of Technology (Adjunct Professor)
Institute of Electrical and Electronics Engineers (Past Member)
Society of Gas Operators

Career Synopsis:

An operations oriented consultant and executive with a strong background in energy utilities, skilled at developing and executing sound operational strategies to achieve full profit potential and customer satisfaction; experienced in engineering and operations management, process improvement, project management, construction, business development, marketing, customer service, strategic alliances, labor relations, strategic planning, and regulatory compliance.

Selected Consulting Assignments:

***Review of Mandated Gas Safety Activities - Puget Sound Energy (2008-Present)
Washington Utilities and Transportation Commission***

Serving as Jacob's project manager for the gas safety audit of Puget Sound Energy (PSE). The focused review, divided into 2 phases covers an in-depth assessment of various aspects PSE's gas operations. Phase 1 activities included:

- Programs, structures and incentives that are in-place to maintain a "culture of safety and compliance" for PSE and its contractors.
- Appropriateness and effectiveness of training provided to or required of its employees and contractor personnel for compliance with standards and procedures.
- Contracts with Service Providers are structured to ensure that gas facilities are installed, repaired or replaced properly, safely and cost-effectively.
- Methods employed to track and document work for compliance.
- Effectiveness of practices related to 49 CFR 192.613 (continued surveillance).
- Adequacy of resources provided to the gas safety compliance program effectively monitor mandated safety activities and programs for compliance.

Over 100 employees were interviewed and 200 documents were reviewed. Our assessment resulted in 61 unique recommendations for improvement. PSE is currently developing an implementation plan for the Washington Utilities and Transportation Commission and Jacobs review. In Phase 2 following an implementation period, Jacobs will return to evaluate the effectiveness and completeness of the implementation of its recommendations.

Energy Reliability Consulting in Connection with the Electricité de France Purchase of Constellation Energy Group's Nuclear Holdings (2009) Maryland Public Service Commission

Analyzed the potential impacts on Baltimore Gas and Electric (BGE) in connection with Electricité de France's purchase of half of Constellation Energy Group's Nuclear Holdings. My role was to assist the Commission's Staff in determining if the transaction was in the public interest by assessing how it could affect the reliability, adequacy and safety of electric and gas service in the State of Maryland. Serving as the MDPSC's expert electric and gas witness, I testified in the following areas:

- Overall electric reliability performance
- Effectiveness of the vegetation management program and other maintenance and inspection programs
- Adequacy of funding for capital asset replacement and operations & maintenance needs
- Need for contemplated cast-iron replacement program
- Need to re-examine service replacement policy
- Assessment of customer satisfaction surveys

Specific support activities include: analysis of pre-filed materials, participate in discovery, provide expert analysis, provide expert testimony, develop cross examination, assist in brief preparation, and support settlement discussions.

Workforce Study Analysis of Illinois Electric Utilities (2008) Illinois Commerce Commission

The Illinois Commerce Commission retained Jacobs Consultancy to conduct a workforce study analysis of the five major electric utilities located in Illinois. The utilities involved included:

- Commonwealth Edison (ComEd)
- MidAmerican Energy Company (MEC)
- Central Illinois Light Company (AmerenCILCO)
- Illinois Power Company (AmerenIP)
- Central Illinois Public Service Company (AmerenCIPS)

Served as project manager for the comprehensive nine month long study; 120 interviews were conducted and over 600 documents were reviewed. The intent of the analysis was to determine the adequacy of in-house staffing in each job classification or job title critical to maintaining quality reliability and restoring service in each utility's service territory. The investigation also included: an assessment of asset management practices, use of technology, operational practices, system maintenance and condition, call center, safety and training. To assess workforce adequacy in each of these areas, we examined ratios of staffing levels, use of contractors, overtime, work order backlog, system reliability performance, and customer satisfaction. We then balanced our analysis with each individual's utilities outsourcing philosophy. In addition to developing final reports for each utility, five public hearings were attended.

Conduct a Technical Evaluation of New Connecticut Peaking Generation Units (2008) Connecticut Department of Public Utility Commission

Coordinated a technical evaluation and review of 11 proposals to build 500 MW of new peaking generation units in the state of Connecticut. Our work supported a confidential prime contractor who was responsible for the overall evaluation of the proposed projects; and ultimately the Connecticut Department of Public Utility Control who was responsible for the final decision. Specific items reviewed included: land site costs, insurance, capital costs, operating costs, starting capacities, type of fuel, proximity and availability of electric and gas connections, inclusion of Nox controls, heat rate, permit schedule, and other critical path items.

Management Review of the Gas Pipeline Project Management and Delivery Process (2007-2008)
Confidential Client

Performed a four-month long management evaluation of the company's project management and project delivery process, from conception to through closeout. Drill down reviews were conducted of selected projects and activities. Identified issues that could be addressed immediately, as well as other critical issues requiring more in-depth consulting support. Findings were presented to senior management as well as the company's board of directors. Key recommendations were made in the following areas: strategy, project development process, project estimates, project execution, culture, and supporting IT systems. In addition to the management evaluation, consulting support was provided for establishing the business development and quality processes as well as instituting enhanced approaches to project control and forecasting.

Management Audit of Yankee Gas Services (2007-2008)
Connecticut Department of Public Utility Commission

Served as Jacob's project manager for the management audit of Yankee Gas Services Company. The diagnostic review covered all functions of Yankee including: a review of the Company's organization structure, strategic and corporate planning, gas supply, system design and planning, system operation and maintenance, asset management, accounting and tax, budget management and control, wage and salary policies, employee benefits, labor relations, process management, all aspects of customer services including meter reading, external relations and all support services provided by its parent company Northeast Utilities. Special areas of focus during the audit were affiliate transactions and Yankee's commitment to load growth.

Organization Assessment and Work Force Analysis (2006-2007)
City of Atlanta, Department of Water Management

Served as Jacob's project manager, conducting an Organization Assessment and Work Force Analysis of City of Atlanta DWM, Safety and Security Division. The Division is responsible for securing approximately 57 water management related facilities and 1400 DWM employees. The analysis covered: strategic direction, DWM expectations, ongoing operations, workforce management practices, determination of areas of strength, as well as areas of potential improvement. Work consists of reviewing DWM and Division documents and conducting structured interviews with Division executives and designated stakeholders. Benchmarking was utilized to help expand horizons and to identify gaps. In addition, a workload analysis was conducted to quantify the effort associated with key services and functions.

Independent Technical Due Diligence Review of Electric and Natural Gas Assets (2006)
Confidential Client

A global energy company based in the Middle East, employed Jacobs Consultancy to review power generation, electric distribution and gas transmission assets. These 35 assets were located in 12 countries on four continents and were valued at more than \$3.7 billion. As a potential purchaser of these assets, our client was interested in:

- Assessing the physical condition of the assets
- Reviewing conformance to environmental regulations
- Analyzing the adequacy of historical and estimated future capital and operations and maintenance budgets
- Assessing planned improvements and asset growth potential and constraints

Our approach was conducted in two phases: first, performing a diagnostic technical evaluation and second, a concentrated technical review of six power generation assets. My role was to serve as the overall project manager coordinating efforts of over 25 staff from our Manchester, Glasgow, Amsterdam, Houston and Raleigh offices.

Develop a Distribution Integrity Management Program (2006-2007)
Delmarva Power

Having developed an integrity management plan for DOT transmission pipeline and recognizing that some form of distribution integrity management was on the regulator's horizon, Delmarva Power elected to develop a distribution integrity management program in advance of the Rules enactment. As project manager, my initial role was to determine how each transmission integrity management element might apply to distribution pipe. Then a program was written reflecting Delmarva's operating practices, the seven elements identified in the PHMSA, Phase 1 Report and the program management plans from ASME Code for Managing Integrity of Gas Pipelines. Delmarva Power's Distribution Integrity Management Program was presented at the 2007 AGA Operating Conference.

Energy Reliability Consulting in Connection with the Exelon-PSEG Proposed Merger (2005-2006)
New Jersey Board of Public Utilities

Jacobs Consultancy completed 14 month engagement analyzing the problem areas, deficiencies, and merits of the proposed acquisition of PSEG by Exelon, with specific emphasis on how the proposed merger may affect New Jersey ratepayers. My role was to serve as overall project manager assisting the Board's analysis of how the merger may or may not affect the reliability of electric and gas service and pipeline safety in the State of New Jersey. In addition I served as the NJBPU's expert electric witness testifying as to the systems reliability and safety both now and in a post-merger environment in the following areas:

- Capability of the electric system to provide reliable distribution service
- Capital improvement planning process
- Reliability improvement programs
- Orderly restoration of electric service
- Distribution organization structures
- Adequacy to capital and operation and maintenance budgets
- Crisis management and critical facilities security programs

Specific support activities include: analysis of pre-filed materials, participate in discovery, provide expert analysis, provide expert testimony, develop cross examination, assist in brief preparation, developed merger conditions and support settlement discussions.

Vegetation Management Program Audit of Pacific Gas & Electric (2003-2006)
California Public Utilities Commission

Jacobs Consultancy recently completed a multi-year independent quality assurance audit to ensure that PG&E's tree trimming and Vegetation Management Programs comply with the orders, rules and regulations of the California Public Utilities Commission and with applicable tree-clearance standards. My role is project coordinator of the financial aspects of the project. The budget for the VM program is \$140 million per year, which is the largest of any US company. Specifically, the quality assurance and audit is concerned with PG&E establishing various forward-looking programs and activities that promote vegetation management practices, public safety, and ensure compliance with statutory and regulatory requirements, including, but not limited to vegetation control performance, customer refusals, vegetation control management and recorded vegetation control costs.

Develop and Audit Transmission Integrity Management Programs (2004-2009)
Various Utility Clients

Worked as project manager for several utility clients developing their gas Transmission Pipeline Integrity Management Program. Established the initial program framework, which was then expanded into a comprehensive program. Task assignments included: conducting a gap analysis, developing approaches to specific integrity management elements, collaborative teambuilding, and extensive knowledge transfer to client utilities. In addition several other utility clients requested audits of in-house developed Transmission Integrity Management Programs. Major areas of weakness encountered in existing programs included: program was not reflective of current operating practices, management aspects of program were not fully developed or minimized, poor documentation and minimal quality assurance practices.

Focused Audit of Street Lighting Assets (2004)
Department of Public Utility Control

Served as Jacob's project manager for a focused audit of Connecticut Light & Power Company's physical street lighting inventory; and accounting controls and records for the Connecticut Department of Utility Control. In attempting to establish the fair market value for these assets, the DPUC was concerned that the street lighting assets reflect a systematic over assignment to the street lighting rate base. This audit involved:

- CL&P's street lighting assets consist of over 163,000 streetlights in 142 towns with a reported net plant value of \$20.4 million.
- Actual plant value of streetlights assets, which can be affected by accounting practices, unit cost allocations, incorrect asset records, and incorrect recording of expenses as capital.
- Employed a random sampling methodology to ensure appropriate sample size to meet the desired error term and confidence interval.

Management Audit of Connecticut Light and Power (2003)
Connecticut Department of Public Utility Commission

Served as Jacob's project manager and lead electric analyst conducting a complete diagnostic review the major functions of Connecticut Light and Power (CL&P). The scope of the audit included: organization and management, financial systems and controls, marketing, engineering and operations, information technology, customer-service operations, and relationships with affiliate companies.

- Determined the broad base practices and policies in place and evaluated their appropriateness and consistent implementation throughout the organization.
- Reviewed the present practices and procedures in place and made 64 recommendations for modification or change to improve overall efficiency and effectiveness.
- Assessment of CL&P, whose revenues exceed \$2.5 billion per year, included conducting 65 interviews, reviewing 200 documents and benchmarking to comparable companies.

Audit of Capital Budget Expenditures of Pacific Gas & Electric Company (2002)
California Public Utilities Commission

The State of California required that a Capital Budget Audit be conducted for Pacific Gas and Electric Company. The audit was to cover all electric and gas distribution construction expenditures in the year

1999. The Construction Expenditure Budget consisted of over 10,000 projects with aggregate value exceeding \$800 million. While with Stone & Webster Consultants, was lead consultant for the review of electric projects. Significant challenges included: arriving at an approach that would be statistically valid and highlighting how the expenditures contributed to the reliability, integrity and growth of the distribution systems. The project planning process, engineering specifications, and construction work quality were examined and facilities inspected against company policies and procedures, and industry practices. This project was initiated and completed in 2002.

Independent Assessment of Operations and Processes (2001) **Imperial Irrigation District of California**

The Imperial Irrigation District of California is a consumer-owned utility, which provides electricity and irrigation water to the Imperial Valley, located in the lower southeast portion of California. While with Stone and Webster, I lead the review of the Districts' electric distribution operations and processes; analysis of electric reliability trends and outage causes; budget review; staffing levels to meet the IID mission; staffing qualifications to perform the duties assigned to them by the district; and utilization of the district physical resources.

Provide Litigation Support (2001) **International Utility**

Third party litigation support was provided for a major international gas utility. Assignments included: follow-up and implementation of safety audits, analysis of plastic joint pipe failures and a review of Cast iron and Ductile Iron asset replacement approaches and surveillance techniques. Genesis for litigation support was client's overall experience with various types of asset materials, several gas explosion incidents and regulatory concerns.

Industry Assignments:

Operations

- Responsible for the installation, operations and maintenance of the gas distribution system. Duties included:

Formation and administration of the strategic operating plan, including a responsive multifunctional organizational structure, efficient manpower planning, regulatory compliance programs, optimal supply and distribution methods, formation and implementation of distribution technology initiatives, and annual capital and expense budgets. Provided innovative and proactive solutions to operational and customer service challenges, managed over 400 employees and 16 locations including engineering, operations, customer service, call center, meter repair facility and training and development. Maintained effective external communications with legislative, regulatory, and industry leaders. Led the formation of a coalition of energy companies to influence statewide Department of Highway construction practices resulting in improved planning, design, scheduling, and reimbursement. Managed an operating budget for labor, materials, and services. Directed negotiations of five labor contracts establishing a five-year agreement, while achieving significant cost reductions. Increased pipe installations with no increase in employees, reduced inventory through supply chain management techniques and reduced meter reading costs due to employee innovation, improved processes and use of new technologies.

Engineering

- Managed the planning, budgeting, design, measurement and engineering support services. Duties included:

Coordinated the preparation, presentation and expenditures of the annual capital and O&M budgets. Oversaw the development of an innovative and highly functional automated mapping and facilities management system, which included Stoner distribution system analysis. Managed the regulatory compliance program including corrosion control. Sponsored teams for process re-engineering and use of new technologies. Developed and negotiated equipment servicing, performance contracting and new product development agreements. Oversaw the development and implementation of construction standards, asset management methodologies, engineering procedures and emergency manuals.

Quality Management/Process Improvement

- Designed implemented and promoted quality activities. Duties included:

Developed and implemented a culture change effort involving over 2,500 employees which advanced their empowerment, coaching and leadership skills. Facilitated employee teams in achieving enhanced levels of customer satisfaction, continuous improvement, employee involvement, and data based decision processes. Established a process orientation by coordinating a corporate wide assessment which define processes, established performance measures, analyze benchmark comparisons, and identify gaps which highlighted a significant cost reduction opportunities. Managed an internal Baldrige assessment, which supported strong customer commitment and continuous improvement. Led a team charged with reviewing stranded electric utility assets and recommending a corporate strategy.

Technical Support and Regional Performance

- Developed a technology and performance focus to improve performance, reduce costs and improve customer service. Duties included:

Initiated and developed a comprehensive information system strategy that established cost/benefits methodology and priorities for mission critical information needs. Developed a joint venture to market a bar code activated electric and gas meter system. Employed technology to improve performance, reduce costs and strengthen customer service relationships. Managed the Public Utility Commission mandated audit. Coordinated the development of a work management system for the Electric and Gas Technical Maintenance Group, which resulted in supporting data based decisions and a reduction in staffing.

Marketing and Business Development

- Coordinated marketing, business development and customer service activities. Duties included:

Coordinated the development of the marketing strategic plan with the operating departments. Recommended corporate marketing resource allocations to insure new business profitability and the creation of revenue. Increased customer satisfaction through improved customer focus in appliance part delivery systems. Developed marketing strategies that repositioned a major customer segment resulting in increased revenues. Supervised the development of a financial model that analyzed the profitability of new business resulting in a reduction in new business expenditures. Managed the business development initiatives process, including idea generation, marketplace evaluation and company positioning. Established customer service policies and procedures and coordinated appliance repair activities. Responsible for the planning, development and implementation of the automated customer dispatch system. Supervised the creation of an industrial customer model to

support sales engineers in the gas conversion market. Established a corporate strategy for dealing with the National Coalition Against Unfair Utility Practices.

Publications and Presentations:

Building a Distribution Pipeline Integrity Management Program, presented to the American Gas Association Operating Conference, 2007.

Got DIMP? (Distribution Pipeline Integrity Management), presented to the Society of Gas Operators, 2005.

Utility Tree and Vegetation Management (UVM): An Introduction and Description of Successful Programs, presented at the National Association of Regulatory Utility Commissioners Summer Meeting, 2004.

Vegetation Management-Improved Approach, presented at the Western Energy Institute Annual Conference, 2004.

Pipeline Integrity Management Challenges, presented to the Society of Gas Operators, 2003.

Pipeline Integrity Management – Enhanced Safety, presented to National Safety Council Annual Conference, 2002.

Innovative Coil Pipe Trailer, paper presented by others at the American Gas Association Operating Conference, 2000.

The Professional Engineers License, presented to West Virginia University, Institute of Technology, 1999.

Results Achieved Using Coil Pipe, presented at the Southern Gas Association Annual Conference, 1999.

Quality Management Experiences, presented to West Virginia University, Institute of Technology, 1998.

Automated Mapping & Facilities Management Applications, presented at the Geospatial Information & Technology Association Conference, 1997.

Reengineering - Increase Customer Satisfaction and Cut Costs, presented at the Management Forum Series Conference, sponsored by Scott, Madden & Associates, 1995.

TQM and Work Management, presented at the North East Gas Council Quarterly Meeting, 1995.

Designated Expert Witness:

- Electricité de France purchase of Constellation Energy Group's Nuclear Holdings (Maryland Public Service Commission)
- Exelon/PSE&G Merger (New Jersey Public Utilities Commission)
- Ductile iron pipe failure (Larkhall, Scotland)

Employment History:

Jacobs Consultancy Inc. (2002 – Present)

Director

Group Manager

Stone & Webster Consultants (2000 – 2002)
Associate Director

Mountaineer Gas Company (1996 – 2000)
Vice President of Operations and Engineering

Public Service Electric & Gas Company (1968 – 1996)
Manager of Quality Management
Manager of Technical Support
Manager of Regional Performance
Manager of Marketing and Business Development
Manager of Manpower & Cost Control
District Manager
Field Engineer

Stephanie Sadowsky

Project Manager / Senior Consultant

Jacobs**Years of Experience: 9****Years with Jacobs: 8****Education**

Master of Arts, Economics, 2001, University of Delaware

Bachelor Arts, International Studies, 1999, University of Wyoming

Organizations

American Economic Association (AEA)

Publications

“Design and Implementation of an Asset Management Tool: The IRS Post of Duty Guidelines System,” Co-author of white paper distributed at the Government / Industry Forum; October 31, 2006. Sponsored by Federal Facilities Council.

Awards / Honors

Performance Excellence Award, 2007, Jacobs

Experience

Stephanie Sadowsky serves as a project manager and senior consultant for private and public sector projects. She specializes in blending the strategic side of consulting with data-driven analysis. Her work includes facilitation of work sessions and preparation of sampling methodologies and flowchart work processes to determine areas for improvement. Stephanie has extensive experience in strategic business planning, financial analysis, organizational assessment, facilitation, statistical analysis, GIS analysis and portfolio asset optimization. Her expertise provides a solid, strategic approach to every project.

Stephanie’s work on federal government and municipal projects includes providing project management of the Post of Duty Guidelines System for the Internal Revenue Service (IRS). Cutting edge technology was applied to the IRS’ portfolio, positively affecting their organization, which led to a change in policy.

Jacobs Projects:**Strategic Business Planning**

- **Client Confidential, Capital Planning / Business Planning;** Task Lead / Senior Consultant. Analyzed current business activities to develop a strategic capacity planning function. This capability is the link between business drivers for company and global construction function. On-site team developed a total cost of operation database and NPV decision model to aid to strategic decisions. June 2009 – Sept. 2009
 - **Internal Revenue Service (IRS), National Workplace Standards Strategic Planning;** Senior Consultant. Reviewed all changes to standards suggested by business units and
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consolidated into themes. These macro-level issues were analyzed for financial and space impact. Overall portfolio impact was presented to management with suggestions for optimal budget use. Team presented recommendations to each business unit to obtain consensus. Aug. 2008 – Sept. 2008.

- **IRS, Agency-Wide Shared Services (AWSS) Business Plan;** Project Manager / Senior Consultant. Developed a business plan that unifies diverse and distinct product lines of the AWSS organization under a mission statement, vision statement, strategic goals, and measurable objectives, with alignment and value provided to IRS Strategic Plan. Executive flyer created for distribution to employees as part of communication of Business Plan. Apr. 2007 – Oct. 2007.
 - **IRS, Furniture Refreshment Strategy;** Project Manager / Senior Consultant. Managed project that went through assessment, formulation, and implementation phases. Developed strategic plan that ensured a high level of customer service and maximization of resources. Implementation plan and recommendations were executed to prioritize funding decisions. Sep. 2004 – Dec. 2006.
 - **Federal Aviation Administration (FAA), Human Factors Study;** Senior Consultant. Human Factors study will determine space needed to adequately accommodate a Tower Simulation System (TSS) at a new FAA facility. A master schedule was developed to outline timeframe and options for training employees at hub and satellite locations. Dec. 2008 – Jan. 2009.
 - **IRS, Real Estate and Facility Management (REFM) Logistics Contract Communication Plan;** Project Manager / Senior Consultant. Created a plan that articulated how to communicate stakeholder impact of REFM Logistics Services branch competitive outsourcing. Plan outlined what items needed to be communicated, to whom and all supporting documentation to transmit key messages. Apr. 2007 – Jun. 2007.
 - **Louisiana National Guard, Strategic Business Planning;** Consultant. Key team member providing business planning for the Transformation Campaign of the Louisiana National Guard. Developed Strategic Map and Logic sheets to highlight task allocation and prioritization. Team members delivered a master schedule showing critical path of all lines of operations. Feb. 2006 - Apr. 2006.
 - **IRS REFM Business Process Improvement Communication Plan;** Project Manager / Senior Consultant. Through interviews and data collection, team extracted key messages to communicate to IRS employees about personnel reduction and how REFM will mitigate impact to customer service with new processes. Jun. 2007 – Oct. 2007.
 - **Florida Department of Transportation (FDOT), Rest Area Long-Range Plan;** Senior Consultant. Team reviewed previous assessment studies to determine gaps in rest area system. Benchmarking and best practices were reviewed. Business strategies for 25-year timeframe were developed based on urbanization around Florida's interstates and current federal regulations. Jan. 2008 – Mar. 2009.
 - **FDOT, Sterling Criteria Business Plan Development;** Facilitator. Lead facilitator on team assisting operation centers to develop a Tier 4 Business Plan to align to statewide plan and district plans. Plans follow Florida's adaptation of the Baldrige National Quality Program, known as the Sterling Criteria. Mar. 2006 – Jun. 2006.
 - **Administrative Office of the US Courts (AOUSC), E-Case Impact Investigation;** Consultant. Assessed impact on U.S. courthouses standard footprints and business processes due to changing technological requirements. Modeled current and proposed space conditions. Jan. 2005 - Mar. 2005.
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- **IRS, Shared Workspace;** Consultant. Co-authored business case for implementation of shared workspace by the IRS. Business case to be used for negotiations with National Treasury Employees Union (NTEU) and possible third-party arbitration. July 2005 – Sep. 2005.

Organizational Assessment

- **Architect of the Capitol, Business Process Analysis;** Team Lead. Reviewing present organizational structure and its current project delivery procedures to identify and recommend specific areas of business process improvement for the Planning and Project Management division. Interviews of key stakeholders resulted in a summary of findings and recommendations for improvement. Future phases will include focus groups to present new process flow and project delivery manual. Project goal is to streamline project delivery process prior to the implementation of a new comprehensive project tracking and management system. Oct. 2009 – Present.
- **City of Denver, Workload Planning;** Senior Consultant. Analyzed current and forecasted workload for a department transitioning over to a new city organization. Suggested best practices and industry standards. Developed resources needed, skills required, and new organizational structure to successfully manage project workload and align with new organization. Sept. 2009.
- **Spectra Energy Transmission (SET), Cost-Forecasting Initiative Improvement;** Senior Consultant. Worked closely with SET personnel to improve cost-forecasting process used for major capital expansion projects. Initiative will improve SET's ability to meet deliverables, take advantage of specific technical strengths and experience and ensure that processes are consistent with industry best practices. Team interviewed SET personnel and created future-state process maps. June 2008 – Sept. 2008.
- **Connecticut Public Utilities Commission (CUPC), Yankee Gas Management Audit;** Senior Consultant. Interviewed key personnel for a diagnostic review of company functions with a focus on business strategies to opine reasonableness of management operations. Compiled findings and recommendations to ensure adequate, reliable, safe and cost-effective service. Jun. 2007 – Oct. 2007.
- **City of Atlanta Department of Water Management, Organizational Assessment and Workload Study.** Senior Consultant. Interviewed key management to understand how new security modifications would impact organizational structure, workload, and staffing levels of department. Identified and interviewed appropriate benchmarking partners. An implementation plan and proposed organizational structure was presented to management for review. Nov. 2006 – May 2007.
- **Department of the Army, Organizational Assessment;** Consultant. Implemented budget tracking process for client with \$200 million annual budget. Provided initial training and support for users. Created interconnected process maps from information gathering interviews. Analyzed current processes and made recommendations for improvement. Implemented recommendations through new position descriptions, evaluation standards and SOPs. Oct. 2002 – June 2003.

Portfolio Asset Optimization

- **IRS, Post of Duty Guidelines System;** Project Manager. Coordinated activities of a long-term and GSA best practice recognized GIS project. Two full time personnel on project
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producing specialized analysis and maps. Traveled with client to market project within the Internal Revenue Service Business units. Aug. 2005 – July 2009. Senior Consultant. Conducted quantitative and qualitative analysis to support client's real estate management decisions. Employed GIS software for majority of analysis including an optimization location tool and facility assessment model. Nov. 2001 – Aug. 2005.

- **General Services Administration (GSA), U.S. Marshall Service, Feasibility Study, Dirksen Courthouse;** Senior Consultant. Leading multiple work sessions to prioritize criteria and options for relocating the US Marshall Service in the Dirksen Courthouse. Coordinating results for approval by Executive Board. Oct. 2008 – Dec. 2008.

Statistical / Financial Analysis

- **GSA, Theodore Levin US Courthouse Master Plan;** Senior Consultant. Updated financial model projecting revenue and potential rental rates based on eight scenarios for renovation or replacement of the Levin Courthouse. Nov. 2008 – Feb. 2009, Jan. 2010.
 - **Department of the Navy, Naval Weapons Station (NWS) Seal Beach Project Validation Assessment (PVA);** Senior Consultant. Suggested alternative pricing strategy for increased revenue for a project outlined for NWS Seal Beach to expand an RV storage lot. From information obtained at on-site charrette, produced a financial review including Return on Investment (ROI), Internal Rate of Return (IRR) and payback analysis. May 2008 – Aug. 2008.
 - **Department of the Navy, Naval Air Station (NAS) Pensacola Project Validation Assessment (PVA);** Senior Consultant. Reviewing and vetting projects outlined for NAS Pensacola to construct a new Youth Center and expand an RV park. Market analysis contains principal competitors, customer base identification and future demand projections. Financial analysis compares status quo to base proposed scenario and team suggested alternative scenario. June 2008 – Aug. 2008.
 - **New Jersey Department of Transportation (NJDOT), New Jersey Department of Project Management and Construction (NJDPMC);** Senior Consultant. Performing analysis of workplace survey results by job description and building location. Providing statistical review and presentation support. Oct. 2008
 - **IRS, New Carrollton Conference Room Survey;** Statistician. Using results from an online survey, analyzed results from business units, job descriptions and buildings to highlight differences in responses and satisfaction levels. Project could result in adoption of specialty software for conference room scheduling. April 2008 – May 2008.
 - **Dow Chemical Company, Office Standards;** Statistician. Analyzed workplace survey results to identify correlation between variables of interest. Used factor analysis to combine variables into more efficient predictors of workplace satisfaction. Jul. 2004 – May 2005.
 - **Connecticut Public Utilities Commission (CUPC), Connecticut Light & Power Streetlighting Investigation;** Statistician. Developed sampling methodology that would bridge data gap created from multiple formats. Performed initial sampling work and justified methodology to CPUC. Feb. 2003 – Dec 2003.
 - **California Public Utilities Commission, Pacific Gas & Electric Vegetation Management Audit;** Statistician. Developed sampling methodology. Worked with macro data set (almost 1 million records), selected sample locations, and validated to a zip code level. Sept. 2003 – Sept. 2004.
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- **US Marine Corps (USMC), Heritage Center Financial Model;** Consultant. Track donations and contractor expenses in a cash flow model. Model projects monthly budgets and incorporates interest rates, contingency use, retention, and contract modifications. Sept. 2003 – June 2006.

Facilitation

- **BP Naperville Charette;** Facilitator. Work session goals were to define roles and responsibilities between multiple contractors on-site. Pending implementation of Control of Work approach needed to be discussed and influence daily work activities reviewed. Team facilitated two-day session to identify challenges, miscommunications, and action items. Summary presentation and detailed report were deliverables. Client requested follow-on work session for process mapping of Control of Work. April 2009.
- **Advance Strategic Alliances Work Session;** Facilitator. Co-facilitated work sessions to define a new method to define strategic alliances within Jacobs. This advance planning method helps identify goals of alliance and maps out path for accomplishing them. Feb. 2007, June 2007.
- **IRS, Centralized Portfolio Management Work Session;** Facilitator. Facilitated three-day session to bridge gap between headquarters and field personnel in Portfolio Management as it changed to a centralized process. Work Session output was a task matrix outlining all changing roles and tasks, a flow chart depicting new process, and an executive summary write-up. Jan. 2007.
- **IRS, Financial Impacts of Delegated Leasing;** Project Manager / Facilitator. Facilitated multiple work sessions between several business units of the IRS to confirm delegated leasing process incorporates all stakeholders. Focused final meeting on IT issues to ensure invoicing system would be able to be modified properly to accept new process. Aug. 2006 – Sep. 2006.
- **IRS, REFM Strategic Plan;** Facilitator. Co-facilitated two work sessions for an IRS division tasked with creating a Strategic Plan. Session One focused on mission and vision development and work session results were well-received when disseminated to the IRS. Session Two developed goal statements and actionable objectives. Oct. 2006 – Dec. 2006.
- **IRS, Real Property Acquisition Program;** Facilitator. Facilitated weeklong session for 15 key IRS personnel to review and revise leasing process. Developed process maps for existing work flow and updated new processes at conclusion of work session. June 2005.

Database Development

- **Department of State (DOS), Sustainable Data Collection, Storage and Reporting;** Senior Consultant. Team created technology that allows DOS to collect and review sustainability data on each of the embassy and consular posts to assist it compliance with EO13423. Analyzed survey results to assist client prioritization of locations for funding allocation. Follow-on task has allowed for inclusion on non-responsive posts, an updated survey version and enhanced summary reports. May 2007 – Nov. 2008.
 - **FDOT, Roadway Access Permit Database;** Senior Consultant. Interviewed client to determine how a database could be designed to fit their objectives. Database will help reduce clerical burden, aid in answering public queries, and view upcoming permit reviews.
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Helped coordinate client expectations to programmers and monitor deliverable progress and deadlines. Jun. 2006 – Dec 2006.

- **IRS, Real Estate Project Funding Database;** Project Manager. Managed technical project, which required constant coordination between federal agency and consultants. Project modified and maintained database, which tracked all real estate projects for IRS. Consultants on project served as database controller who uploaded, funded and communicated project status to IRS delegates. Specialized reports and queries customized to customer needs. Nov. 2006 – Nov. 2007.

Work Prior to Jacobs:

- **Computer Aid, Inc.;** Washington, DC; Technical Writer. Supported international organization's product development team for all documentation needs: user guide, training workbook, and presentation. Enhanced features and improved design of on-line help files. June 2003 – November 2003.
 - **TransAlta Energy Marketing;** Annapolis, MD; Analyst. Created maps displaying spatial relationships between power plants, pipelines, and other key elements for identification of profitable opportunities. Developed and applied OLS regression model to forecast regional power prices. Suggested trading opportunities daily. Improved and maintained natural gas model that forecasted national and regional demand and storage levels. January 2001-September 2001
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Name: JEFFREY L. GERBER

Title: Senior Consultant

Education: MS, Natural Resources, Ohio State University (1978)
BGS, General Studies, With Distinction, University of Michigan (1974)

**Professional
Affiliations:**

American Gas Association
International Right-of-Way Association (Past Member)
Association of Energy Professionals (Seminar Chair)
New York Independent System Operator Management Committee (Past Member)

Career Synopsis:

An experienced project manager and consultant in energy and transportation, with over 25 years of experience in infrastructure planning, environmental analysis, policy and economics. Management consulting experience has been concentrated on gas system operational improvement, alternatives analyses, environmental impact, workflow analyses, process improvement, and the energy/transportation interface.

Selected Consulting Responsibilities:

- Currently participating in the review of mandated gas safety activities conducted for Puget Sound Energy and the Washington Utilities and Transportation Commission. This review includes observing and analyzing the gas utility's continuing surveillance and system safety procedures; service provider training appropriateness and effectiveness; and evaluating methods to document work for compliance and auditability. Utility and contractor QA/QC programs, operator qualifications, and internal audits and reporting have been reviewed. Surveillance practices and changes in operating processes, policies, and procedures have been assessed. Current practices will be compared to proposed distribution integrity management elements.
- Participated in the gas system baseline assessment for the City of Mesa, Arizona. Analyzed Federal and state code provisions and compiled a comprehensive listing of requirements and deadlines applicable to the client.
- Wrote testimony in support of Peoples Gas Light and Coke Co.'s proposed infrastructure improvement program, including analyses of the utility's system safety and material/age composition against industry benchmarks. Coordinated testimony and quantitative cost and benefit measurements within consulting team and utility to ensure compliance with regulatory commission orders.
- Investigated the feasibility of a confidential gas distribution client regarding functioning as an entity independent of its current operator and administrator. Investigated issues regarding gas supply, customer growth, needed infrastructure improvements and start-up costs in regard to outsourced and internally-provided services, equipment, and facilities. Participated in the identification of operation and maintenance needs and cost projections.
- Participated in analyses conducted on behalf of confidential gas transmission client's cost forecasting improvement initiative. Authored talking points and interview questions to understand in detail the existing project cost management process, and participated in a series of workshops and discussions with developers of project cost forecasts, providers of input data, and users/internal clients of the

forecasts. A needs assessment to document project cost estimating process strengths, weaknesses, and improvement opportunities will be prepared, as well as an improved process document including process definitions, references, roles and responsibilities, procedures and system interfaces. Authored internet client survey in order to test effectiveness of the process pre- and post-implementation.

- Developed a report for a UK gas distribution company to assess UK and international opportunities for research and development, particularly in the areas of construction, operations, and maintenance. The report focused on R&D projects which might be eligible for the Innovation Funding Initiative established by the Office of Gas and Electricity Markets. Also compiled a report regarding available equipment capabilities and purchase and lease pricing options for vacuum excavation and related coring units for consideration of pilot program testing and future technological development.
- Led a multidisciplinary team in identification and analysis of alternatives Trans Texas Corridor I-35 (TTC-35) project. Authored the alternatives, energy and utilities, and related cumulative impact sections of the Federal Environmental Impact Statement. Facilitated a multidisciplinary working group from several companies to determine successful criteria and recommend alternatives and preferred alternatives for the Tier I EIS. Presented project process and findings at more than 50 public meetings in study areas encompassing approximately 110 counties.
- Managed evaluation of market rule proposals and comments from wholesale market participants and Electric Reliability Council of Texas (ERCOT) operations staff and management. Coordinated operational and policy responses through staff interviews and written comments. Worked with IT staff to estimate systems requirements for alternative solutions. Represented ERCOT at meetings of the Texas Nodal Team and Public Utilities Commission regarding wholesale market reinvention process and advised ERCOT management on restructuring issues.
- Managed a team preparing an environmental assessment for a 129-mile upgrade of US 77 to Interstate Highway standards in South Texas, including 3 branch offices and 4 subcontractors. Successfully planned to avoid or mitigate impacts to historic ranches including portions of the King Ranch National Historic Landmark, threatened and endangered species, and concerns regarding affected communities.

Industry Assignments:

- Led a group of industry and government leaders in definition of parameters, and selection and guidance of technical consultant on highly visible study of effects of new gas-fired power plants on future pipeline capacity and fuel diversity requirements. Managed production of final report for the NY State Energy Research and Development Authority (NYSERDA), and presented findings to New York Independent System Operator (NYISO), Northeast Council of Governors, NY State Reliability Council, NY Department of State, and NY Energy Planning Board.
- Represented NYSERDA as voting member of NYISO Management and Business Issues Committees, and as workgroup participant of Transmission Planning and Governance Working Groups. Facilitated coalitions regarding installed capacity payments, market bidding rules, reliability, and demand response. Advised NYSERDA president and governor's office on NYISO policy decisions and progress in meeting new power plant construction goals.
- Created and led interdisciplinary team for (NYSERDA) to review more than 20 applications for new power plants. Wrote decision recommendations for the NYSERDA president for his role on the NY State Siting Board regarding potential environmental impact, energy supply issues and transmission system impacts.
- Advised Federal Energy Regulatory Commission (FERC) Office of Electric Power Regulation staff on transmission pricing and reliability, natural gas convergence and independent system operator

issues. Applied restructured industry policies in analyses of electric utilities' rate filings, service agreements, complaints, power marketing applications and transmission tariffs. Led analyses of New York Power Pool and ISO filings. Tracked and analyzed development of federal reliability legislation.

- Participated in select committee performing gap analysis on behalf of the FERC Office of General Counsel. Conducted interviews of FERC internal clients and recommended organizational changes which were implemented.
- Led interdisciplinary staff and consultant teams in review of interstate natural gas transmission projects for the FERC Office of Pipeline Regulation. Authored and/or assured quality of NEPA documents related to the project. Conducted route selection studies and environmental compliance inspections during and after construction. Represented FERC at public and agency meetings. Facilitated innovative solutions for direct and cumulative impacts resulting in business and engineering merger of two competing projects (Maritimes and Northeast Phase I, and Granite State). Trained and mentored internal staff on NEPA project management.

Publications and Presentations:

US Highway 77 Upgrade Project, presenter of scoping analysis at agencies and public meetings, 2008.

Energy and Utilities Indirect and Cumulative Impacts Chapter, Trans-Texas Corridor I-35 Segment Tier One FEIS, 2006.

Trans-Texas Corridor Public Hearing presenter of Recommended Alternatives, 25 public hearings, 2006.

Alternatives Chapter and Technical Report for Trans-Texas Corridor I-35 Segment Tier One DEIS, Texas Department of Transportation, 2005.

Trans Texas Corridor Public Meetings presenter of Scoping, Preliminary, and Preferred alternatives, 45 public meetings, 2004-2005.

Transmission Congestion and SMD, presenter and seminar coordinator for international teleconference, Association of Energy Professionals, 2003.

New Power Plants and Natural Gas Supply, presenter at Northeast Council of Governors Infrastructure Conference, 2002.

Future Needs for NY Independent System Operator, presenter at Federal Energy Regulatory Commission (FERC) technical conference, 2001.

FERC and Deregulation of Wholesale Electric Power Markets, presenter at New York State Energy Expo, 2000.

FERC's Initiatives to Accommodate Evolution of the Electric Power Industry, presenter at IBC Energy Industry Essentials Conference, 1999.

More than 30 NEPA documents on interstate natural gas projects, including environmental impact statements and environmental assessments, FERC 1990- 1997.

What FERC Expects in Environmental Route Design, presenter at Texas Transportation Institute Pipeline Right-of-Way Conference, 1996.

Graduate level course instructor in environmental analysis, Geography Department, George Mason University, 1989 to 1990.

Employment History:

Jacobs Consultancy Inc.

2008 - Present

Senior Consultant

Trans Texas Corridor Environmental Consulting Team Jacobs Carter Burgess <i>Senior Environmental Manager</i> Blanton & Associates <i>Senior Project Manager</i> HNTB, Inc. <i>Environmental Segment Manager</i>	2004 - 2008
AppsConnect, Inc. <i>ERCOT Senior Market Rules Analyst</i>	2003 - 2004
NY State Energy Research and Development Authority <i>Senior Project Manager</i> <i>Project Manager</i>	1999 – 2003
Federal Energy Regulatory Commission <i>Regulatory Policy Analyst</i> <i>Public Utility Specialist</i> <i>Environmental Protection Specialist</i>	1990 – 1999
Earth Science Teacher	1985 – 1990
U.S. Department of the Army <i>Environmental Specialist</i>	1984 - 1985
U.S. Department of the Interior, Bureau of Land Management <i>Planning Coordinator</i> <i>Natural Resource Specialist</i>	1979 - 1983

SCHEDULE FTD – 04 Preliminary Schedule

Year	Planned and Unplanned Work					Work Done as an Individual Work Activity			Yearly Total
	20% Threshold Service Replacement	Bare Steel Replacement	Meter Exchange	Turn On/Off	Leak Investigation	Business District	Identified by Corrosion Survey	Other Program	
Pre-08/011	60	60	1400	3900	1000	1400	880		8,700
08/011 - 07/012	60	60	1000	3500	900	1400	800	61,300- (sum of all completed planned work to date)/15	
08/012 - 07/013	55	55	600-800	3100	800	500	700	61,300- (sum of all completed planned work to date)/14	
08/013 - 07/014	50	50	540 - 720	2700	700			61,300- (sum of all completed planned work to date)/13	
08/014 - 07/015	45	45	480 - 640	2300	600			61,300- (sum of all completed planned work to date)/12	
08/015 - 07/016	40	40	420 - 560	1900	500			61,300- (sum of all completed planned work to date)/11	
08/016 - 07/017	35	35	360 - 480	1500	400			61,300- (sum of all completed planned work to date)/10	
08/017 - 07/018	30	30	300- 400	1100	300			61,300- (sum of all completed planned work to date)/9	
08/018 - 07/019	25	25	240 - 320	700	200			61,300- (sum of all completed planned work to date)/8	
08/019 - 07/020	20	20	180 - 240	300	120			61,300- (sum of all completed planned work to date)/7	
08/020 - 07/021	15	15	120 - 160	240	80			61,300- (sum of all completed planned work to date)/6	
08/021 - 07/022	10	10	60- 80	120	40			61,300- (sum of all completed planned work to date)/5	
08/022 - 07/023	10	10	50-70	100	30			61,300- (sum of all completed planned work to date)/4	
08/023 - 07/024	10	10	40- 60	80	20			61,300- (sum of all completed planned work to date)/3	
08/024 - 07/025	5	5	30- 50	60	20			61,300- (sum of all completed planned work to date)/2	
08/025 - 07/026	5	5	0 -40	40	10			61,300- (sum of all completed planned work to date)/1	
Total									Sum=70,000