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Stephanie L. Hamilton

Professional Experience:

Brookhaven National Laboratory

April, 2011 – Present: Smarter Grid R&D Manager

Responsible for designing, developing and implementing Smart Grid R&D programs for NY and the northeast for BNL. These programs require forming and enhancing collaborations of diverse stakeholders that encompass utilities, national laboratories, academia, technology providers, policymakers, and R&D organizations such as US DOE and NYSERDA.

Accomplishments to date:

- Developed and hosted a meeting with a diverse stakeholder group in NY, northeast, Mid-Atlantic and California to review a state-of-the art modeling software that allows utilities to move from traditional engineering study mode to real-time operations. Due to word of mouth publicity, the meeting ballooned into a larger crowd than was initially planned and the feedback was so positive we are planning another session in November, 2012 with DOE kicking it off.
- Collaborated with Orange & Rockland Utility and separately with Central Hudson Gas & Electric for NYSERDA PON 2474 Smart Grid T&D May 22, 2012. Won both proposals for a total of \$3Million.
- Collaborating on two proposals for the Oct 2012 NYSERDA PON 2474 for Smart Grid T&D related to renewable energy and new technologies.
- Prepared BNL Whitepaper on Smart Grid. Its review and management concurrence, established BNL's support of the use of a new technology tool that solves all grid technologies in real time through of the development of physical model that is a one-to-one correspondence with the physical plant and applies Graph Trace Analysis.
- Worked with DOE and other labs to have BNL designated the lead international lab by DOE's International Smart Grid Action Network (ISGAN) program for Distribution Automation (DA). In the process of mapping and modeling BNL's electrical facilities on its campus to test, demonstrate, and help shape new Smarter Grid DA in concert with the BNL grid, with utilities and vendors. As lead international lab, will lead collaboration with domestic and international labs such as DERLab (Germany), NEDO (Japan).

- At LIPA's request, developing a workshop to build education and awareness of the use of probabilistic risk analysis for use in the utility business. DOE HQ's Gil Binderwald, lead scientist and engineer will sponsor and keynote from DOE's perspective.

Energy Consultant:

January 2010 to April, 2011:

Member of Wyoming State Energy Office (WY SEO) team of voluntary advisors to develop the WY SEO strategic energy plan. In addition, to overall strategy development, worked on the sub team that developed the WY SEO strategic plan for Energy Information, Coordination and Collaboration. The final WY SEO Plan was approved by the Governor and submitted to the US Department of Energy (DOE) on May 13, 2010.

Developed a collaboration team to respond to the US DOE Funding Opportunity Announcement Number: DE-FOA-00000313 for Smart Grid Research, Development, and Demonstration. Worked with large, diverse collaborative team; completed and submitted proposal on time.

Providing advisory business development consulting to Electrical Distribution Design, Inc. (EDD) and Electronic Magnetic Power Solutions Company. Arranged a meeting with DOE's Office of Electricity (DOE OE) to have EDD demonstrate its robust and sub-second modeling of a major utility system for decision-making in real time which encompasses transmission through customer premise.

Electric Power Research Institute (EPRI)

February 2009 – January 2010: Collaborations Manager for Smart Grid (SG) Demos & IntelliGrid Programs

Reporting to the program managers for both SG demos and IntelliGrid to increase interest in the programs and build collaboration partnerships with SG players, such as DOE, ORNL, PNNL, SNL, FERC, NERC, NRECA, NIST, APPA, GridWise Alliance, EEI, and NRCan...

DOE-OE EPRI partnership.

Established communication ties and strategies for a partnership with DOE-OE and EPRI. Created relationships with OE, NETL and DOE RDSI project recipients to integrate around EPRI's SG Demo program, and bring greater success to the programs toward achieving the GridWise vision for an intelligent North American grid.

DOE Collaboration support - As a part of the initiator of the DOE-EPRI partnership, prepared presentation regarding the value and opportunities for the EPRI-DOE collaboration to facilitate discussion with DOE's Smart Grid Director Eric Lightner. It was well received by DOE and established the key negotiation points and framework to solidify the collaboration details in a memorandum of understanding.

DOE RDSI Descriptions using EPRI SG demo Six Critical Elements

Designed template to link DOE RDSI project objectives with the EPRI SG demo six critical elements to facilitate integration and lessons sharing between DOE and EPRI.

CIGRE paper

Successfully developed a team with EPRI, DOE OE and ORNL to develop a paper for presentation at CIGRE's conference in August 2010 in Paris, France. Led the team and finalized the paper submission and obtained approval from CIGRE.

ORNL

Initiated contacts and relationship with ORNL research personnel investigating load responsiveness and dynamic reactive power management to enable technology transfer from national laboratories to EPRI's industry clients, and improve demand response modeling & simulation software tools and eventually SG control schemes.

GridWise Architecture Council (GWAC)-NIST Grid InterOp Forum

- As an original GWAC member since 2004, personally promoted the long-term vision of interoperability and planted the seeds for grid interoperation and standardization and parts of the GWAC vision. GWAC has been primarily IT-centric. In 2009, pushed to help establish and build on the need to see the value that IT brings to the power system and how the two must leverage each other to bring about the GWAC North American Smart Grid vision.
- In 2009 as a member of both planning and program committees for the GWAC-NIST Grid-InterOp Forum, devoted both personal and professional time to create the "on the ground" experience" panels including EPRI Smart Grid demo program and the DOE RDSI projects. This was a completely new subject area for the third Grid-InterOp Forum conference and was attended by 500+.

Showcase and Promote EPRI, Its Management, and EPRI Clients

Created slides for EPRI VP for international presentations regarding U.S. "Smart Grid Cities" and "US Investment Program in Smart Grid." EPRI's VP commented that the presentations were "exactly what I wanted." Got EPRI management assigned to Grid-InterOp session chairs as well as EPRI SG Demo host utilities were "showcased" via their SG presentations. Worked with DOE to have their RSDI projects "showcased" too.

International SG Projects

Led a project that identified and gleaned "lessons learned" from three international SG demo programs and communicated summaries of each SG program in two-page format, including template design.

4th International Integration of Renewable and DER conference - Sought funding for 4th International Conference on Integration of Renewable and Distributed Generation Resources from Sandia, DOE, EPRI, Natural Resources Canada (NRCan), and PNM. Worked with support staff to secure a venue, and develop a website.

NIST Interoperability Standards Roadmapping Project

Contributed to the proposal and subsequently worked as Project Administrator on the four-month NIST Phase I “Electric Industry Standards Roadmap” project. Received performance-rating score of 4 out of 5 which was the score for all EPRI team members on the project. Completed the project on time, on-budget, and according to scope.

Prepared EPRI Strategic Intelligence reports for the following conferences and events:

- EPRI SG Advisory Meeting – Oct 2009
- Grid InterOp Forum 2009
- GridWise Alliance
- Wheatland, WY Smart Grid presentation
- Jackson Hole, WY Sustainable Energy Community Smart Grid Presentation

Use Cases for the Smart Grid (SG) tracking system

Developed the first scenario for the SG tracking data base. The scenario drove the plan for the database and ultimately the SG program to center around the EPRI SG Demo program six critical elements. Prior to this effort, the SG demo program had not aligned with EPRI’s core concepts. After adopting this core conceptual program emphasis, it was applied to the DOE-EPRI collaboration to align the programs together for comparison and contrast and increased review rigor of both programs.

Edison International

Southern California Edison (SCE)

September 1999 – January 2010, Manager of Distributed Energy Resources

(DER) reporting directly to the Director for Engineering Advancement in T&D. In charge of planning and implementing DER programs for SCE customers and power grid support; oversee staff of five with budget of \$700K; direct and participate in DER R&D, including prime movers, energy storage, and integration with demand response programs for grid support and customer benefit; work directly with DOE, CEC, etc.

- Appointed to devise and oversee SCE’s distribution planning process for application of Distributed Energy Resources as T&D deferral and for reliability improvements; created an innovative program to unite SCE’s efforts to improve SCE’s chances of accomplishing this goal with customer-owned DER (third party funded).
- Continued to manage SCE’s technology development for DER technologies.
- During 2001-8 secured for SCE \$5,000,000 of private and public funding for DER R&D; collaborated and partnered with other third parties in \$19M of DER R&D projects including DOE, CEC, Sandia, ORNL, NETL, and other labs.
- Worked as subcontractor to Boeing on a proposal for DOE’s Solar America Imitative (SAI). SCE’s role in the proposal was to be Boeing’s “utility technical advisor” and would provide utility expertise regarding interconnection to the grid, inverter requirements to enhance the inverter to provide enhanced grid support and prepare a marketing study to reveal the potential for utility-scale concentrated solar Boeing products in the 1-10 MW size. Boeing won the DOE SAI award for the proposal developed with SCE.

- Developed unique third-party funded DER power industry technical advisor program to universities, such as West Virginia University for creating power grid “smart agent” software and with manufacturers developing DER balance of plant devices, such as inverters. SCE acts as the technical advisor.
- Provided strategic consulting for Cambridge Energy Research Associates and others, such as Japanese Ministry of Industry & Trade.
- Worked directly with microturbine generator (MTG) vendors and potential customers to install and test MTGs.
- Purchased, installed, and tested 18 different MTGs from Capstone, Bowman, Honeywell, Elliott and Ingersoll-Rand with over 85,000 hours of operation.
- Created unique collaboration with Hydro Quebec for MTG testing.
- Made numerous customer & industry presentations advancing MTG use.
- Authored and published two books on distributed generation & MTGs.
- Selected to serve on several national committees related to DER.

Edison Technology Solutions, Irwindale, California

January, 1998 – September 1999, Manager of Distributed Generation

In charge of commercialization of electric technologies through business development.

- Developed business plans and appointed manager for business unit.
- Resurrected defunct MTG testing program. Established on-going solid business rapport with MTG vendors; created distributed generation business.
- Developed Distributed Energy Deployment Lab at UC Irvine.

Cinergy Corp., Cincinnati, Ohio/The Ascendix Group, Phoenix, Arizona

February 1997 – January 1998. Power Marketing Manager, Southwestern Region

Reported to CEO for retail marketing and aggregation of energy customers.

- Developed Energy Provider RFQ and RFP for Abbott Laboratories.
- Developed eight-measure criteria with “guidepost” assessment identifiers.
- Assessed RFQ responses from 15 largest U.S. energy companies.
- RFQ assessment and recommendations praised; accepted without change.
- Developed RFP, assessed, recommended top three, and prepared final report to Abbott. Abbott implemented all recommendations without change and subsequently, as desired by Abbott, a 250 MW CCGT (Desert Basin) was built and initially operated by Reliant Energy on its manufacturing site.

Reported to the Manager of WSCC region. Developed customer base in the Southwest to gain business relationships that resulted in revenues for Cinergy and its customers.

- Developed customer base throughout the SW by meeting with customers; understanding their business needs; and developing targeted, “customer-tailored” presentations and proposals.
- Short-listed against Enron for a strategic alliance partnership with large Colorado cooperative.
- Worked with G&T and its distribution co-ops to take advantage of its competitive generation position, customer loyalty, and retail opportunities.

**Public Service of New Mexico (PNM), Albuquerque, New Mexico
August 1996 to February 1997. Manager, Business Development**

Reported to the Senior Vice President of Marketing and Business Development. Responsible for developing merchant plant opportunities and building bulk power and power-related business opportunities with new and existing market players.

- Prepared strategic business plan for Senior Vice President's business unit.
- Organized business development section, trained staff, and set & met goals.
- Continued development of new merchant plant project totaling 100 MW.
- Dismissed two potential merchant plant projects totaling 288 MW.
- Provided local NM co-op with technical assistance for under grounding 15 miles of distribution line to build new business and business relationship.

**Grant County Public Utility District (PUD), Ephrata, Washington
March 1995 to August 1996. Director of Power Management**

In charge of all power purchases, sales, marketing and dispatching for own hydrogeneration of 1900 MW plus buying and selling purchase power off the grid. Annual budget of \$44M; staff of 27 professionals. Reported directly to General Manager and worked closely with Commission.

- Cut 1997 BPA annual power purchases from \$20M to \$12M.
- Developed and implemented marketing plan resulting in new revenue growth of \$160K in first year to \$300K (est.) in second year with no increase in staff.
- Successfully switched largest customer (13 MW) to gas saving \$20M.
- Increased performance standards of the division and improved results.
- Created power management professional team from a dysfunctional group.

**Southern California Gas Company, Los Angeles, California
January 1992 to March 1995. Manager of Gas Supply/Regulatory Affairs Adm.**

Reported directly to two Vice Presidents: VP Gas Supply and VP Regulatory Affairs. Managed staff of 25 professionals. Planned and managed both budgets - \$15M. Managed expanded complex LAN micro-based information system for staff of 150.

- Selected for four-person re-engineering team that reduced the department from 93.5 to 66 FTEs and saved Company \$2M annually.
- Proposed and managed a consolidation of two departments to save \$1.1M over five years. Implemented proposal and saved more than proposed.
- Handled both departments' Rate Case filings – obtained all funding requested.

July 1988 to January 1992. Manager of Gas Supply Administration

Reported directly to Vice President, Gas Supply. Managed staff of 20 professionals. Responsible for gas supply negotiations, contract administration and invoice reconciliation and payment authorization of annual gas purchases of \$1.2B. Managed complex LAN micro-based information system for staff of 100. Managed operating budget of \$0.8M.

- Negotiated gas deals totaling \$120M per year. Several made under market.
- Formed new section to resolve accounting and invoice discrepancies. Received spotless audits for all four years and praise from auditors.
- Oversaw implementation of accounting and billing for capacity brokering.

November 1984 to July 1988. Supervisor of Planning and Technology Support.

Implemented a Company-wide integrated, computer-based planning system and oversaw recommended company technology standards. Supervised six professionals.

August 1979 to November 1984. Energy Analyst and Forecasting Engineer.

Planned gas supply and handled inventory operations of 112 BCF of gas for seasonal injection/withdrawn and to handle peak day needs. Revised prior planning methods to optimize sales to UEGs. Managed first two CPUC Reasonableness Reviews of gas supply operations - second review approved without requiring a formal regulatory hearing.

Southern California Edison, Rosemead, California

December 1976 to August 1979. Fuel Supply Engineer, Analyst, and Associate.

Prepared fuel supply planning analysis for oil, gas, and coal generation sources and develop a pro forma coal contract for a proposed coal plant.

Education & Training:

MS, Management Finance, West Coast University

BS, Mechanical Engineering, California State University, Los Angeles

BS, Applied Psychology, Georgia Tech

Hamilton Patents:

1. Methods of Operating an Electrical Power Utility Using Real Time Data (application no. 60/761810)
2. Methods of Operating an Electrical Power Utility Using Real Time Data (application no. 60/807129)
3. Method of Communicating between a Utility and Its Customer Locations (application no. 11/626810)
4. Small In-Home Utility Services Display Device (application no.TBD)

Hamilton's Publications & Presentations:

1. Distributed Generation: A Non-technical Guide, 07/01, PennWell Publishing, with A. Chambers and B. Schnoor – placed on its “best seller” list by PennWell
2. Conditions for Autonomous Power Capability in New Versus Old Economy Firms, 08/01, *SSGRR 2001*, L'Aquila, Italy with F. Kaefer, Ph. D. and G. Nezelek, Ph. D.
3. SCE's Microturbine Testing Program: Update & New Equipment, 12/01, *CERA Energy Forum*, Santa Fe, NM
4. SCE's Distributed Generation Program, 01/02, *DOE Microturbine Workshop*, College Park, MD
5. Research Program for Maturing Emerging Distributed Energy Technologies to Provide Infrastructure for E-Related Applications, 01/02, *SSGRR 2002W*, L'Aquila, Italy
6. SCE's MTG Program, DOE MTG/Gas Turbine Peer Review, 03/02, Fairfax, VA
7. Microturbine User Applications, 06/02, *ASME Turbo 2002*, Amsterdam, The Netherlands
8. The Emergence and Evolution of Microturbine Generators, 10/02, *WorldPower*
9. SCE's Distributed Generation Program, *AQMD's Small Business Conf.*, 11/02

10. Handbook of Microturbines, published July 2003 by PennWell Publishing; was placed on its “best seller” list by PennWell at PowerGen in 2003
11. Distributed Energy Resources Development & Deployment at SCE, *EPRI’s DER Advisory Group meeting*, February 2004, Scottsdale, AZ
12. Customer Connections to SCE’s Power Grid, *DTE Energy’s DG Conference for Electric Utility Engineers*, May 2004, Detroit, MI
13. Utility Perspective on DER, PowerMex T&D conference, 09/04, Mexico City, Mexico
14. In 2005-6, with staff support prepared eight papers. Five papers were chosen for conference “keynote” presentations. Successfully lined-up SCE executives to make the presentations including one in Rome, Italy.
15. In 2006, at CEC’s request, presented in Plenary Session for its fuel cell 20-year R&D program
16. Jointly authored a paper for the International Institute for Research and Education in Power System Dynamics, titled “Interoperability and SCE’s DER Program,” Charleston, SC 08/07
17. Jointly authored a paper for the Grid-InterOp Forum titled “Integrated, Agent-Based, Real-time Control Systems for Transmission and Distribution Networks,” 10/07, Albuquerque, NM
18. Jointly authored a paper for Carnegie Mellon University’s Fourth Electricity and Efficiency Conference, titled “Energy Storage for Wind Integration, a Conceptual Roadmap for California,” 04/08, Pittsburgh, PA
19. Presented at IEEE T&D PES meeting, “Rethinking T&D Architecture in Light of Interoperability and DER,” 04/08
20. “Batteries are Key to Wind Integration,” *T&D World*, 12/08
21. Presented on Smart Grid panel at Wheatland, WY Jubilee Days, 07/09
22. Presented on Smart Grid panel at Jackson Hole, WY Energy Sustainability Summit, 10/09
23. August 2010 at CIGRE in Paris: “Smart Grid Demos Provide Guidance on Integrating DER and RES into the Distribution System with Consideration of Transmission Impacts, Market Signals, and Technologies” – joint authorship with EPRI, DOE, and ORNL
24. Prepared a winning abstract. Then worked with ORNL on the presentation for DOE and ORNL for presentation on the “Use of Load Responsiveness via Integration with DOE’s RDSI projects.” The presentation was made at the NOW Conference, Lake Buena Vista, FL, 02/2010. A revised version was presented at IEEE’s “Rethinking T&D Architecture Panel” at the bi-annual IEEE T&D conference in New Orleans, LA, 04/2010

Honors:

- ❖ In 2004, selected for DOE’s national 13-member GridWise™ Architecture Council (GWAC).
- ❖ Re-elected to GWAC in 2006: re-elected in 2008; promoted to Emeritus status in 2010.
- ❖ Selected by GWAC to promote GWAC effort at the IEEE-PES T&D conference.
- ❖ In 2005, was selected to serve on DOE’s T&D Peer Review panel to evaluate the merits of third-party R&D projects being funded by DOE.
- ❖ In 2006 selected to five-member CEC Executive Committee to develop 20-year R&D roadmap for fuel cells and other distributed generation technologies.
- ❖ In 2004 and again in 2006, selected again by Sandia National Laboratory to help organize PowerMex 2004 and PowerMex 2006 conferences in Mexico City on energy and water. PowerMex is the largest energy and water conference held in Mexico.
- ❖ In 2006, selected by Oakridge National Laboratory to participate in *The National Panel on Estimating the Electricity Reliability and Security Benefits of the U.S. Department of Energy’s Distributed Systems Integration R&D Program*.
- ❖ In 2008, selected by the California Alliance of Distributed Energy Resources consortium for an award of *Appreciation* for my efforts to maintain interest for the past 10 years in DER by the CA IOUs.

- ❖ In 2008, selected to West Virginia University's Advanced Power and Energy Research Center Advisory Board.
- ❖ In 2008, invited by the State of Hawaii and the DOE to participate in their "Hawaii Clean Energy Initiative." Participated in all working sessions while at SCE.
- ❖ In 2008, reselected to the GridWise Architecture Council since be selected as an original member in 2004.
- ❖ In 2009, developed two panels for Grid-InterOp 2009 "on the ground experience" from EPRI and DOE – both well attended and well received – "first of a kind" for GridInterOp.
- ❖ Jointly developed proposal to NIST; proposal selected, received written and monetary awards; awarded official individual high rating of 4 out of 5 from NIST for completion of the "NIST Roadmap" project. Received recognition from EPRI for personal performance.
- ❖ In 2009, led and co-authored the development of a CIGRE paper that passed the US and International committees to be accepted for presentation in Paris in 2010. Collaborators on the paper included EPRI, DOE OE and ORNL. First-time CIGRE paper submittal succeeded to full-paper acceptance.
- ❖ In 2010, invited to be a panel member for University of Wyoming's "Women in Science" conference
- ❖ In 2010, invited by Wyoming State Energy Office (WY SEO) to participate on its team to update the WY SEO's strategic plan. Finalized plan submitted to DOE on May 13, 2010. Received positive recognition from the Wyoming Governor's Energy Advisor.