Jeremy Shook, PE, PMP

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SUMMARY

Engineering and management professional with 25 years of diverse experience in the design, construction, startup, operation and maintenance of utility power and district energy plants. Strategic, systems-level thinker who excels at creating innovative, simple and effective solutions to address technical, operational and organizational challenges. Possesses excellent interpersonal skills and a strong focus on providing clients with superior service.

KEY SKILLS

- Strategic Planning
- Business Development
- Project Management
- Engineering Management
- I&C Engineering
- Mechanical Engineering
- Plant Operations
- Plant Maintenance
- Operator Training

PROFESSIONAL EXPERIENCE

BURNS & MCDONNELL | CHARLOTTE, NC **2016-PRESENT**

National OnSite Energy & Power (OSEP) Global Practice I&C Lead (2019-Present)

- Responsible for strategic planning, business development, staffing and project execution for instrumentation and controls (I&C) engineering for clients with district energy plants in the higher education, medical, government and manufacturing markets.
- Recruited by the OSEP National Director to start the OSEP I&C team in 2019. Grew staff from 1 to 3 in less than a year, maintaining billability of 94%. Supported 16 projects across 4 offices.
- Developed strategic plan and marketing material for the OSEP I&C business.
- Developed and executed plan to self-perform control system programming for BAE System Natural Gas Fired Steam plant EPC project, saving the project $170,000 compared to using a third party systems integrator.

Charlotte Office Energy Global Practice I&C Lead (2016-2019)

- Founding member of the Burns & McDonnell Charlotte office. Responsible for strategic planning, business development, staffing, and project execution for electric utility clients in the Southeast.
- Pursued and won 4 I&C projects totaling $500,000 with Duke Energy and Dominion Energy. Managed projects to achieve a total gross profit margin of 51%.
- Lead I&C Engineer for 7 projects, including a new 15 MW combined heat and power plant for Duke Energy and a chilled water plant control system upgrade study for Emory University.
- Led recruitment efforts for the Energy Global Practice in the Charlotte office. Increased staff from 1 to 5 utilizing personal connections with top talent in the Charlotte area.

FLUOR | CHARLOTTE, NC **2011-2012,2013-2016**

I&C Functional Manager (2015-2016)

- Responsible for hiring, staff development and technical oversight for the I&C discipline for the Fluor Power office in Charlotte, NC. Managed staff of 11 Engineers and 1 Designer.

Project Engineering Manager – Brunswick County Power Station Project (2015)

- Led team of 25 multi-discipline engineers during the construction phase for the Brunswick County Power Station Project, a $1B, 1400 MW 3x1 combined cycle power plant EPC project for Dominion Energy.
- Assumed role as Project Engineering Manager as the construction schedule was slipping due to lower than expected productivity. Re-organized and focused home office engineering team to quickly respond and resolve site issues and communicate status to senior management. Recognized by senior management for significant improvement in engineering effectiveness and communications.

Lead I&C Engineer - Brunswick County Power Station Project (2014-2016)

- Responsible for technical scope, 3 year schedule and $2.5M budget. Managed client interface. Managed 4 Engineers and 1 Designer. Led DCS Factory Acceptance Test (FAT). Led resolution of construction and commissioning issues in the home office and onsite.
- Took over the role of Lead I&C Engineer after the previous Lead I&C Engineer left the company with the I&C discipline 10% behind schedule and struggling. Took immediate action to verify scope, re-baseline the schedule and budget, increase staff, strengthen client relations and resolve outstanding technical issues. Completed all remaining project milestones on time including the execution of the DCS FAT with significant client involvement.
- Developed and implemented new database tool for the development of instrument lists and specifications.

I&C Engineer – Brunswick Country Power Station Project (2013-2014)

- Developed I&C specifications, lists and drawings.

I&C Engineer – North Anna 3 Nuclear Plant Project (2011-2012)

- Developed scope, schedule, and budget estimates. Led dedicated team to develop project engineering procedures.

PARSONS | CHARLOTTE, NC **2012-2013**

Senior Supervising I&C Engineer (2012-2013)

- Technical lead for I&C engineering for projects in the water/wastewater, chemical process and commercial HVAC sectors. Performed site walkdowns. Developed I&C specifications, lists and drawings.
- Developed an innovative method of using system mode diagrams and tables to specify functional requirements for an HVAC control system due to a limited engineering budget. The vendor was able to configure the system with no significant issues.

AREVA | CHARLOTTE, NC **2005-2011**

I&C Project Engineer – U.S. EPR Design Certification Project (2005-2011)

- Responsible for the conceptual design and licensing of the I&C design for the U.S. EPR, a new 1600 MW nuclear power plant design. Developed design basis documents and drawings. Developed the I&C section of the U.S. EPR Final Safety Analysis Report (FSAR) for review by the Nuclear Regulatory Commission (NRC). Interacted with NRC staff as necessary to support their review.
- Drove the completion of the NRC review and approval of the I&C design for the U.S. EPR with significant challenges by the NRC due to uncertainty in regulatory guidance regarding the use of digital I&C technology.
- Coordinated with German and French colleagues to modify and simplify the baseline EPR I&C design to achieve acceptance by the NRC while maintaining global consistency with other EPR projects in Finland, France and China.

- Presented the U.S. EPR I&C design to the Department of Energy and to the NRC Advisory Committee for Reactor Safeguards (ACRS). Publicly recognized by the ACRS Sub-Committee Chairman for giving an outstanding presentation.

I&C Engineering Discipline Lead – Calvert Cliffs 3 Project (2009-2010)

- Responsible for technical scope, 5 year schedule and $25M budget for the Calvert Cliff 3 detailed design project, implementing the U.S. EPR at the Calvert Cliffs site. Managed 25 engineers, including remote management of 5 engineers.
- Selected by senior Areva management to take over as Lead I&C Engineer for the Calvert Cliffs 3 project due to customer dissatisfaction regarding the execution of I&C activities. Quickly worked to develop a new engineering plan, re-organize the I&C team, and gain customer trust. Recognized by both senior Areva and Unistar management for having a significant positive impact on the project within the first six months after assuming the role.
- Developed and implemented an innovative system engineering based process for the design of the U.S. EPR DCS to address project execution issues observed on other nuclear I&C projects due to significant regulatory requirements and the number of sub-systems and interfaces.

GE ENERGY | SCHENECTADY, NY **2003-2005**

Lead Controls Engineer (2003-2005)

- Designed and field tested advanced control algorithms for GE gas and steam turbines to optimize turbine performance.
- Demonstrated a 25% reduction in startup time for a single shaft combined cycle power plant using a model predictive control algorithm.

UNITED STATES NAVY **1995-2001**

Shift Engineer, NPTU Ballston Spa (1999, 2000-2001)

- Responsible for the operation and maintenance of a land based Naval nuclear power plant utilized for operator training. Led and managed 100 personnel.
- Prior to an outage that consisted of significant modifications to the electrical distribution system, ensured that procedures were developed and provided training for the operations staff on how the modification would affect plant operation and safety. Provided diligent oversight of plant operations during the shutdown. The plant completed the shutdown safely and on schedule.

Production Training Officer, NPTU Ballston Spa (2000)

- Responsible for the operator training program for 300 students at a land based Naval nuclear power plant. Directly led and managed 12 staff.
- Led the effort to redesign the student training surveillance program after it was found to be overly complicated and ineffective. Coordinated with all stakeholders to ensure all requirements were met while significantly simplifying and focusing the program.

Division Officer, USS Tucson (SSN-770) (1996-1999)

- Responsible for the operation and maintenance of a nuclear powered submarine. Served as Reactor Controls Assistant, Electrical Officer, Main Propulsion Assistant, and Communications Officer. Managed 40 personnel.
- Developed new procedure to backflush main condensers to minimize fouling during operations in the Persian Gulf based on reports of other ships having this problem. This resulted in the ship being able to maintain full propulsion capability and fulfill all operational commitments during a 6 month deployment.

EDUCATION

- Rensselaer Polytechnic Institute, Master of Science, Mechanical Engineering, 2002, GPA 4.00/4.00
- Villanova University, Bachelor of Mechanical Engineering, 1995, GPA 3.35/4.00

LICENSES & CERTIFICATIONS

- Professional Engineer - North Carolina, South Carolina, Virginia, Minnesota
- Project Management Professional
- Six Sigma Green Belt
- Certified Automation Professional
- Navy Master Training Specialist

PUBLICATIONS / PAPERS / PRESENTATIONS

- Jeremy Shook & Laura Nies, "An Integrated Approach for Control Room and Human Machine Interface Design", IDEA 2020 Campus Energy Conference, Denver, CO.

- Jeremy Shook, "An Integrated Approach to Central Energy Plant Control Systems", IDEA 2018 Campus Energy Conference, Baltimore, MD.
- Jeremy Shook, Mark Burzynski, "An Evaluation of ISA 84 for Use in the Design and Licensing of Nuclear Power Plants", 54th ISA POWID Symposium 2011 (reprinted in Sept/Oct issue of ISA Intech Magazine).
- Shook, J., Paris, P., Pfluegbeil J., "Development of an I&C Architecture for New Nuclear Power Plants", 6th American Nuclear Society International Topical Meeting on Nuclear Plant Instrumentation, Control, and Human-Machine Interface Technologies, 2009.
- Shook, J.T., Walczyk, D.F., "Structural Modeling of Profiled Edge Laminate (PEL) Tools Using the Finite Element Method", Journal of Manufacturing Science and Engineering, Vol. 126, pp. 64-73.

PATENTS

- United States Patent Application 20070055392 "Method and System for Model Predictive Control of a Power Plant", March 8th, 2007.
- United States Patent 6161854 "Two Wheeled Drive Bicycle", December 19th, 2000.

HONORS AND AWARDS

- AREVA CORE Awards (3)
- AREVA Plants Quality Award
- GE Power Awards (3)
- Navy Commendation Medal
- Navy Achievement Medals (3)

VOLUNTEER ACTIVITIES

- Board Member at Pine Lake Preparatory Charter School
    - Member of Strategic Planning Committee
        - Participated in the development of a new 5 year strategic plan.
        - Re-defined school mission and student outcomes to provide clearer direction for day to day activities at the school.
    - Chairman of the Academic Excellence Committee.
        - Led the development of new KPI's for student outcomes.
        - Led the evaluation of school performance against KPI's.
        - Led the assessment of school curriculum against new strategic plan.