

DANIEL WELCH, PE CEM QPHS

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PROFESSIONAL EXPERIENCE

WELCH ENERGY SERVICES, PLLC – Apex, NC

Established 2007

Mr. Welch serves as President of Welch Energy Services providing energy management solutions for business and industry. Clients have included Cushman and Wakefield, Lone Star Business Solutions, TIAA-CREF, Siemens Building Technologies, and the University of North Carolina. In 2011, named Energy Engineer of the Year by the North Carolina Chapter of the Association of Energy Engineers.

ADVANCED ENERGY - Raleigh, NC

October 1994 to 2012

Managing Director of Industrial and Commercial Services

Process Engineering Consultant

Mr. Welch worked with manufacturers and with large commercial building owners to identify energy saving and production improvement opportunities. Mr. Welch served as the Managing Director of Advanced Energy's Industrial and Commercial Solutions Team from 2001 until 2008 when he chose to become a part-time employee while he developed Welch Energy Services as a standalone business.

In manufacturing – Mr. Welch served as the primary consultant and advisor for modifying process heating operations. Modifications include improvements in energy efficiency, product quality, production speed, process robustness and other factors critical to the client's success. Infrastructure systems (chilled water, refrigeration, compressed air, steam, lighting, etc...) are also evaluated.

In commercial buildings – Mr. Welch conducted assessments of HVAC, building envelope, lighting, plug loads, food service equipment, data centers, and building controls. Projects included high level (walk through) assessments or more detailed, investment-grade assessments including metering and building modeling.

Clients included companies such as Corning (fiber optic furnaces), General Electric (curing wind turbine blades), and TIAA-CREF (large commercial campus.) One recent project with a small municipality identified overall energy cost savings of 25% (primarily in pumping) with less than a 2 year payback. Savings were verified by the municipality post-installation.

A&C ENERCOM – New England Region*1990 to 1994***Director of Commercial & Industrial Operations****New England Region Senior Engineer**

Managed A&C Enercom's Large Commercial and Industrial services in New England. Responsible for P&L and personnel management. Provided technical assistance and process improvement services to the industrial customers of electric utilities to assist them in staying competitive and "on the grid".

Provided electronic sub-metering, rate analysis, building modeling and other technical services as necessary to assist manufacturers and commercial building owners with energy cost reduction. Recommended operational and/or equipment changes to improve facility operations.

Monitored savings achieved in utility sponsored pay-for-performance (ESCO) projects. Monitoring included feasibility study review, monitoring plan development, and site verification audits.

INSTITUTE OF TEXTILE TECHNOLOGY - Charlottesville, Virginia**Project Manager - Energy and Environmental Group***August 1983 to February 1990*

Responsible for strategic planning of energy research at the Institute. Interacted with a Steering Committee of Industry executives to develop cooperative research projects. Designed and implemented energy conservation research projects and presented results in semi-annual seminars in both formal and informal (workshop) presentations. Conducted on-site testing of various energy saving technologies at textile manufacturing facilities and office buildings.

Conducted energy conservation audits at textile manufacturing and office facilities. Projected costs and savings for each recommendation and assisted with implementation of audit recommendations. Reviewed construction and process improvement plans for engineering and/or energy efficiency improvements. Served as a consultant in this regard to over 30 textile manufacturing companies.

UNION OIL OF CALIFORNIA, RESEARCH CENTER - Brea, California**Research Technician***August 1980 to April 1983*

Developed equipment and methods to simulate and model the movement of fluids through sandstone under varying conditions of high temperature and pressure. Conducted research on methods to increase oil extraction from this material. Successfully field tested promising techniques in off-shore oil fields. Worked with oil field crews to install large pumping systems for pilot projects.

PROFESSIONAL CERTIFICATION AND ORGANIZATIONS

Professional Engineer, Mechanical Engineering
Commonwealth of Virginia,
State of North Carolina

Certified Energy Manager (CEM)
Association of Energy Engineers

Member, American Society of Heating, Refrigeration and Air Conditioning
Engineers (ASHRAE)

Qualified Process Heating Specialist (QPHS)
US Department of Energy

EDUCATION

Bachelor of Science – 1980
Humboldt State University - Arcata, CA

Major - Natural Resource Management
Minor - Philosophy

Awards - National Merit Scholarship Award Winner;
Bank of America Achievement Award in Laboratory Science

Masters of Engineering - 2001
North Carolina State University – Raleigh, NC
Emphasis in Chemical Engineering and Industrial Engineering
(The PE license – earned years previous to this work - is in Mechanical Engineering.)

References available upon request