Krishnan Umamaheswar, LEED®AP, CEM, CDSM, DGCP

EDUCATION

Master of Engineering, Mechanical Engineering — August 2001 – August 2004
Specializing in energy management and efficiency
Texas A&M University
College Station (GPA: **3.5/4.0)**

Bachelor of Engineering, Mechanical Engineering, — June 1997 – May 2001
Motilal Nehru National Institute of Technology (formerly MNREC)
Allahabad (GPA: **4.0/4.0)**

WORK EXPERIENCE

Research Scientist, Houston Advanced Research Center — 2009 – present

Work for the **US Department of Energy's Gulf Coast Clean Energy Application Center** by providing project support services, policy change, education and outreach with regards to combined heat and power, district energy and waste heat recovery in Texas, Louisiana and Oklahoma

Project Manager, Nexant, Inc — 2004 – 2009

- **CenterPoint Energy Large Commercial and Industrial Standard Offer**
  Responsible for reviewing project submittals to ensure projects meet the requirements of the Standard Offer program. Specific tasks include checking savings calculations, writing approval letters for each phase of the projects, conducting field inspections of equipment, and managing the on-line project tracking system. Other activities included are to assist project sponsors with both general and project specific Measurement and Verification (M&V) activities, and making recommendations concerning the most cost-effective M&V approach for particular energy savings measures.

- **TXUED Demand Side Management**
  Manage TXU's demand side management (DSM) programs within the service territory. Commercial program types include a comprehensive energy efficiency bidding program and a new construction design assistance program. Tasks associated with management of these projects have included budget projections and management; assessments of market and technical potential; regulatory support; development and implementation of measurement and verification activities; and analysis of program cost-effectiveness.

- **CenterPoint Energy Recommissioning Program**
  Manage the technical aspects of the CenterPoint Energy Front Range recommissioning program, create standardized formats for report outlines, building and equipment data reporting, review recommissioning reports and functional test procedures.

- **Energy audits**
  Conduct energy audits for various apartment complexes in Texas and Arizona for AIMCO. Conduct energy audits for Marriott group of hotels. Tasks included on-site investigations, utility bill analysis, identification of energy conservation measures and detailed savings calculations leading up to final reports for each apartment campuses.

- **Arkansas Deemed Savings Report**
  Develop Deemed Savings Calculations for the State of Arkansas for several energy efficiency measures. Tasks included research, market potential study, and review of federal and state codes, incremental cost analysis finally leading up to deemed savings values for various measures.

- **LEED projects**
  Key player in LEED facilitation and LEED-NC commissioning for two buildings. Tasks included credit pre-qualification, cost determination, developing commissioning plan, design drawings review, develop templates for pre-functional and functional testing.

- **CPS Energy**
  Conduct a Market Potential Study for Bexar County, to investigate the effect of DSM programs. The study involved identifying measures, calculating savings for each measure, applying appropriate square feet of market segment (and building type) onto the matrix, finally leading upto the technical, economic and achievable potential of demand and energy savings.

- **Salt River Project (SRP)**
  Key player in the design of energy efficiency programs for the Commercial & Industrial sectors. Tasks involved the development of application forms, report templates, program manuals and protocols for program roll-out.

- **Tennessee Valley Authority (TVA)**
  Designed the energy efficiency audit program for the Tennessee Valley Authority**.** Tasks involved the development of application forms, report templates, program manuals, protocols and spreadsheet templates for program roll-out.

Research Assistant Energy Systems Laboratory, Texas A&M University August 2001 – August 2004

- Thorough knowledge of Air-Handling Units and their working
- Valuable **on site training** with various tools, gauges, sensors and loggers used to deal with HVAC related problems
- Frequent on site **trips with experienced engineers to troubleshoot** various hot and cold calls in buildings through Texas A&M campus.
- An Understanding of the detailed **step-by-step method of commissioning** developed by Energy Systems Laboratory to improve HVAC equipment efficiency and reduce building utility costs.
- Building a huge database for **SECO** with regards to metering and billing of various building utilities
- Detailed metering and billing for each utility in every building in Texas A&M's vast campus
- Creating consumption profiles, **data verification**, energy monitoring**, forecasting of electricity**, chilled water and heating hot water usage
- Calculating **Energy utilization Index and Energy Cost index** for buildings and developing a baseline for similar buildings.

ACADEMIC PROJECTS

A Study of the renewable sources of Energy in Texas Aug'02 - Dec'02
The project involved a study of the various renewables sources available in Texas, their potential and the impact it will have in the future. It points to specific areas and resources, which need to be developed and investigated. This project was completed as part of a graduate course requirement.

A study of loads of a building and energy assessment Aug'01 - Dec'01
The project involved a detailed study of the Building Loads of Halbouty Geosciences, Texas A&M University. Air Balance, software developed by ESL, Texas was used to simulate building performance.

Changes in the system set points, developing a night time schedule and use of an economizer were some of the recommendations given of which some were implemented thereby improving both building comfort and efficiency.

Design of Energy Supply System July'00 – May'01

The project involved design of a permanent energy system for a dormitory using renewable sources of energy, namely solar energy and biomass. Firstly, a thorough study was performed to evaluate the total annual energy requirement for the dormitory and subsequently the number of solar cells and their dimensions calculated. This system was integrated with a biomass gasifier unit, which produced the required energy during times of "lean" sunshine. This project was completed as part of undergraduate course requirement

Design and Fabrication of Bell Crank Lever Apr'00 – July'00

The project involved design of a bell crank lever for helicopter pads using the software package IDEAS. The fabrication of the above was accomplished using Numerical Controlled Machines and the finished product was inspected using the software package CMM. The main objective of the project was to reduce the draft angle of the lever in order to minimize the overall weight of the lever thereby effecting cost reduction. This project was completed as part of final year internship at Hindustan Aeronautics Limited, Bangalore, India.

Relevant Course Work

Energy Management in Commercial Buildings
Principles of Building Load Analysis
Principles of Heating, Ventilating and Air-conditioning
Intermediate Heat Transfer
Survey of Management
Applied Solar Energy
Applications of Energy Management
Advanced Thermodynamics
Survey of Marketing

COMPUTER SKILLS

Operating Systems: Windows NT, Windows XP, MSDOS
Software Packages: Air Model, IDEAS, AUTOCAD 2000, eQuest, MS OFFICE, DOE-2, TRANE TRACE
Programming Languages: C, Pascal, Visual Basic

Honors and Achievements

- Secured a rank of 172 out of 50,000 students who appeared for National Level Science Talent Examination in India.
- Organizer and Chess Captain of Inter-University Chess Competition held at REC Allahabad in Jan 2000.
- Secured tenth place in Sub-Junior State Level Chess Championship held at Karnataka, India.
- Secured certificate of merit and scholarship from Central Board of Secondary Education, India for outstanding performance in the Standard X exams conducted by the board.
- Recipient of the Hindustan Aeronautics Limited Scholarship, India awarded for outstanding performance in undergraduate studies.
- Certified Energy Manger
- LEED Accredited Professional
- Certified Demand Side Manager