Rocky Mountain Association of Energy Engineers



Monthly Lunch Meeting January 16, 2014 11:30 am-1 pm

Where: Indian Tree Golf Course 7055 Wadsworth Blvd Arvada

Adam Perry, Senior Energy Services Specialist, Platte River Power Authority will talk about an overview of new technology applied to RTU's and PRPA's benchmarking of the results.

To register on line click on <u>Lunch Registration</u>. If you need a vegetarian entrée please click on <u>vegetarian</u>.

RMAEE Board of Directors

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Presidential Wisdom

What's Happening in our Industry

Energy Department Invests \$13 Million in U.S. Solar Manufacturing – The Energy Department announced over \$13 million for five projects to strengthen domestic solar manufacturing and speed commercialization of efficient, affordable photovoltaic and concentrating solar power technologies. As part of the Department's SunShot Initiative, these awards will help lower the cost of solar electricity, support a growing U.S. solar workforce and increase U.S. competitiveness in the global clean energy market. Matched by over \$14 million in private cost share, this investment will help five companies in California, Colorado, Georgia, Pennsylvania and Oregon develop cost-effective manufacturing processes for photovoltaic and concentrating solar power technologies. Colorado-based Abengoa Solar was one of the recipients. See more at: http://www.energyvortex.com/pages/headlinedetails.cfm?ld=6675

Net-Zero Energy Retail Store Debuts in Illinois - On Sporting two wind turbines, nearly 850 solar panels and a geothermal system burrowed 550 feet into the ground, Walgreens (NYSE: WAG) (Nasdaq: WAG) celebrates the official opening of what is believed to be the nation's first net zero energy retail store, anticipated to produce energy equal to or greater than it consumes. The store also utilizes LED lighting and daylighting, and carbon dioxide refrigerant for HVAC equipment. The store is seeking platinum certification through the U.S. Green Building Council LEED program, Net Zero Certification through the Living Building Challenge, and has received GreenChill platinum certification through the U.S. EPA. Thomas Connolly, Walgreens vice president of facilities development, said, "We are investing in a net-zero energy store so we can bring what we learn to our other stores and share what we learn with other companies." Read more at: http://www.energyvortex.com/pages/headlinedetails.cfm?id=6667

General News and Monthly Meetings Info

Our monthly lunch meetings are typically scheduled for Indian Tree Golf Club (7555 Wadsworth Blvd in Arvada) on the 3rd Thursday of each month from 11:30 AM to 1:00 PM. Hope those who attended, we hope you enjoyed the **December annual holiday party**. **The January 16th meeting** will be a presentation from Adam Perry, Senior Energy Services Specialist, Platte River Power Authority. He will give an overview of new technology being applied to RTU's and PRPA's benchmarking of the results.

Our **annual Certified Energy Manager (CEM) course/exam** will be on Denver May 1, 2, 5, 6, and 7th. The CEM certification is now accredited by the American National Standards Institute (ANSI) based on the International Standard ANSI/ISO/IEC 17024. Please contact Steve Kutska if you have any questions about the CEM class and exam. *If there are other AEE certifications you are interested in obtaining, please communicate that to a Board member.* If there is enough interest in other courses, we are willing to explore expanding this service to regional folks.

We are looking forward to seeing you at the meetings and invite your input to make RMAEE an even stronger and more valuable organization to our community. Sincerely,

Jessica Lorentz RMAEE Chapter President

Upcoming Events

All lunch meetings are the third Thursday of the month at Indian Tree Golf Course unless noted otherwise

January 16, 2014 lunch meeting. Adam Perry, Senior Energy Services Specialist, Platte River Power Authority will talk about an overview of new technology applied to RTU's and PRPA's benchmarking of the results.

Certified Energy Manager Course and Exam Denver May 1, 2, 5, 6 and 7, 2014. Please click <u>Steve Kutska</u> for more information or look at page 5 and 6 in the newletter

Certified Energy Auditor Course and Exam – We are looking for interest in a course in Denver. Please click on <u>Steve Kutska</u> for more information. No course is currently scheduled.

Stay Connected with the RMAEE! Visit this award winning website at <u>http://www.rmaee.org/</u>

We've added an employment section. If you would like to post an employment notice please send your listing(s) to Dan Sachse at <u>dan.sachse@xcelenergy.com</u>.

Membership – It maybe time to renew!

- RMAEE Membership Fees may be due. The RMAEE annual fee is \$50/person, unless you hold a National AEE membership. For National AEE members the RMAEE annual fee is \$40. Local membership gets you \$10 off the regular lunch meeting price of \$30 through out the year. Fill out the **application (below)** and fax, mail or email to Steve Kutska.
- Annual Corporate Memberships- Improved! An Annual Corporate Membership (ACM) is assigned to the company, thereby allowing any employee of the company to use this "Annual Corporate Membership" to attend RMAEE meetings. Each ACM allows one company employee to attend the meeting. This is different from previous years, when only the assigned employee could use the corporate membership
- Another membership benefit is the password protected member's corner on the RMAEE website, www.rmaee.org. All available presentations are stored here in PDF form for local members to download. If you are a local member and do not know the password send an email to <u>dan.sachse@xcelenergy.com</u> and the sign on and password will be mailed to your email address.

Rocky Mountain Association of Energy Engineers Membership Form

Members may join the local Rocky Mountain Chapter of AEE at any time during the year. Membership will run for one year from the month you join RMAEE.

Please send the completed form or attach a business card and send along with payment for your membership dues. We have 2 ways to pay – check payable to RMAEE or Credit Card (Master Card or Visa cards only).

Mail payment to: Steve Kutska Xcel Energy 1800 Larimer Street Denver, CO 80202 <u>Stephen.p.kutska@xcelenergy.com</u>

For questions about membership call Steve Kutska at 303 571-7254.

RMAEE Local Membership Dues Form

Please complete this box or simply attach a business card and mail along with your payment.

- ^I I am an AEE National Member a check for \$40 is enclosed for Chapter Dues AEE Member
- □ I am NOT an AEE National Member a check for \$50 is enclosed for Chapter Dues
- Annual Corporate Membership 220.00 per year allows the company to send one employee to each meeting. This also includes one free lunch meeting.

Name	
Company	_
Address	
City, State, Zip	
Phone	
Email	
Credit Card Information Master Card	Visa
Card Number	
Expiration Date	<u></u>
Name as it appears on card	

Association of Energy Engineers

Rocky Mountain Chapter

AEE Certified Energy Manager Seminar and Exam May 1 - 2 & 5 - 7, 2014 Sponsored by RMAEE

Location

The class will be held at: Colorado Center for Renewable Energy Economic Development (CREED) 14062 Denver West Parkway Building 52, Suite 300 Golden, CO 80401

When

The 5 day Certified Energy Manager Seminar and Exam dates are May 1 - 2 and 5-7. Sessionsstartat8AMandendat5PM.

Qualifications

All candidates must submit their CEM Applications to the Association of Energy Engineers AEE (Atlanta GA) and obtain approval to attend the CEM Seminar before April 15, 2014. Please send all questions regarding a student's qualifications must be reviewed and approved by AEE in Atlanta GA.

See note 1 below.

For information on the qualifications please go to the National AEE website http://www.aeecenter.org/i4a/pages/index.cfm?pageid=3351

Payment

Financial arrangement must be made by March 28, 2014. Checks will not be cashed and Credit cards (VISA and MC only) will not be run until April 4, 2014. All students will be notified on April 7th of their final acceptance in the seminar.

Cancellation Policy

RMAEE reserves the right to cancel the seminar and return all fees collected if a minimum of 20 students have not signed up and paid their fees by close of business March 28, 2014. RMAEE will notify all attendees by close of business April 4, 2014 if the seminar has been cancelled. There will be a 100% cancellation charge for any attendee cancellation after April 4, 2014. A substitution of an attendee will be allowed until April 28th, if for some reason the original attendee cannot attend. To maximize the value of your investment any substitute attendee should meet the Association of Energy Engineers qualifications for CEM certification.

Sign up information

Please contact Steve Kutska at : stephen.p.kutska@xcelenergy.com if you are interested in signing up. Payment options include check, Visa, and Master Card. Sign up deadline is March 28, 2014. Make Checks payable to **RMAEE**.

Seminar Fee: Attendee per person: \$1,850.00 Non-Profit Organizations Per person: \$1,700

Send payments to Xcel Energy Attn: Steve Kutska 1800 Larimer St.

Denver Colorado 80202

Notes:

1. The application and test fee required by AEE with your application submittal is included in the Seminar prices above. **Please do not pay that fee when you submit your application to AEE.** Please send a note with your application submittal to AEE saying that you are attending the May, 2014 CEM Seminar in Denver which is sponsored by RMAEE.

2. Lunches and refreshments at breaks are included in the seminar fee.

Colorado Energy Events

If you know of other upcoming events that should be listed in this calendar, please contact Dan Sachse at <u>dan.sachse@xcelenergy.com</u>

Organization	Event	Location	Date	Contact
RMAEE	Monthly Lunch Meeting	Indian Tree Golf Course Arvada, CO	January 16, 2014 11:30 am – 1 pm	http://www.rmaee.org/

<u>Colorado Governor's Energy Office:</u> <u>http://www.colorado.gov/energy/</u>

ASHRAE http://www.ashrae.org/

Rocky Mountain Electric League http://www.rmel.org/

IEEE http://www.ieee.org/portal/site

Colorado Renewable Energy Society – <u>http://www.cres-energy.org/events</u>

Solar Energy International http://www.solarenegy.org/workshops

Senior Engineer – PCD Engineering Services

General Characteristics:

The Senior Engineer will manage/coordinate projects with other team members. Applicant must have practical experience and demonstrated competence in the following areas:

• A strong background in the design and operation of mechanical heating, ventilation, and airconditioning (HVAC) systems and knowledge of the specialized HVAC requirements of highly technical facilities; understanding of building electrical systems.

- Evaluating state-of-the-art building energy-efficiency technologies and managing sustainable design and sustainable design assistance projects;
- Using hourly simulation software programs and industry-accepted engineering methods for evaluating energy performance;
- Providing quality assurance review of analysis methods, simulation results, and project deliverables;
- A team player willing to contribute to and build sustainable design methods, knowledge, and capabilities;
- Working within the architectural design process and understanding design team members' roles, perspectives, and analysis needs;
- A holistic understanding of whole building and mechanical systems and a strong commitment to state-of-the-art design innovations.

Direction Received:

The Senior Engineer should be fully capable of managing all aspects of whole-building energy analysis associated with completing sustainable design projects for both new and existing buildings. Additionally, be capable of designing start-to-finish mechanical and/or electrical design projects, and completing construction field observation and construction administration activities. The position requires strong management and client interaction skills to develop and carry out a tailored evaluation approach well- suited to the project and design team objectives. S/he must be able to coordinate work responsibilities and manage other staff and our outside consultants to complete tasks.

Typical Duties and Responsibilities:

Employee will manage/coordinate projects with other team members. Typical duties may include (but are not limited to) the following:

- Provide technical services and management for sustainable design assistance projects;
- Manage detailed energy modeling, mechanical and electrical design, evaluation of complicated building systems, and life-cycle-cost analysis;
- Provide clear and well-written memorandums, and reports to various clients (building owners, architects, engineers) regarding project specific energy performance and modeling results;
- Conduct quality assurance reviews to ensure engineering quality and accurate technical content of project-related documents;
- Meet / contact clients as appropriate to discuss energy analysis methods, results and recommendations;
- Prepare analyses, calculations and reports to support energy-related & LEED components;
- Prepare mechanical and/or electrical engineering construction documents and construction-

phase administration support on design projects;

- Assist in writing proposals and identifying and attracting potential clients and new projects;
- Assist to monitor the business operations of the team as they relate to the overall economic health and viability of the PCD team;
- Travel to in-state and out-of-state projects as required. Minimal travel required.

Skills & Background Required:

A candidate for this position must have the following skills / background:

- Excellent communication skills oral, written, and presentation and facility with necessary supporting software (Microsoft: Word, Excel, PowerPoint);
- Expertise in complex building mechanical systems and state-of-the-art energy efficiency technologies/ applications;
- Project management experience; including people and time management skills;
- Working knowledge of and experience with the architectural design process and all phases of design and construction from pre-design to construction administration;
- Working knowledge of the USGBC's LEED certification rating systems (NC, EB, CI, etc.);
- Working knowledge of building and energy codes and standards;
- Undergraduate-level engineering degree & PE registration;

Skills and Background Recommended (Preferred):

A preferred candidate for this position may also have the following skills / background:

- 7+ years experience in a building related field, preferably experience in mechanical engineering, HVAC design and building energy analysis.
- Experience in commissioning for both new and existing buildings.
- Experience in designing/evaluating state-of-the-art sustainable design technologies for commercial and industrial new construction and remodel/retrofit.
- Understanding of building automation systems.
- Recent energy modeling experience with DOE-2 and/or Energy Plus or other detailed hourly simulation;
- LEED AP status;
- Commissioning Certification;
- Experience with "Integrated Systems" planning and design.

PCD Engineering is a leading firm headquartered in beautiful Boulder County on the base of the Rocky Mountains. With offices in Longmont, CO, Cheyenne, WY and Roanoke, VA, PCD Engineering designs and implements collaborative engineering solutions that produce high performance buildings.

This position is for our Longmont, CO or Cheyenne, WY office. We have found what we offer in contrast to the medium to large company culture is unsurpassed. We function more as a team than as a hierarchy of management. Our customer-focused, award-winning solutions are meaningful to us and we take great pride in our work.

If you are interested, we'd love to hear from you. Please email resume and salary history to jobs@pcdengineering.com. No phone calls please.

Senior Energy Engineer

Reports To: Director of Energy Solutions

Primary Purpose:

The Senior Energy Engineer is responsible for managing project teams to conduct facility site visits, energy engineering, energy audits, and energy consulting services to identify energy conservation measures (ECMs) and energy management plans for all types of clients. Responsible for managing Energy Solutions projects, that will range in size and complexity, to achieve project deadlines and financial expectations. This includes the coordination and management of both internal and external resources to deliver project expectations.

Principal Duties and Accountabilities:

- Identify and evaluate energy efficiency and energy conservation measures (ECMs) through energy audits and data review (mechanical, architectural, electrical). Includes all energy sources and systems within a building.
- Identify applicable improvement measures aimed at reducing clients energy consumption and cost (electricity, gas, water, sewer, fuel, other). Includes technology, 0&M, and behavioral (people/energy culture) type solutions and recommendations.
- Possess expertise and serve as a resource to other engineers on topics including HVAC configuration and performance, energy modeling, data logging, controls and energy management control systems, lighting and daylighting design, sustainable design and LEED certification, measurement and verification (M&V), energy auditing and retro-commissioning.
- Significant tasks include scheduling, document preparation, inspections and testing, report generation, problem resolution, quality assurance, and development of sales opportunities.
- Meet with both technical and non-technical clients. Lead discussions regarding energy management planning, energy efficiency, or sustainable design solutions in whole building and individual building system (mechanical, electrical, controls) context.
- Utilize one or more energy modeling tools or applications to develop various solution scenarios for review and utilization in report and/or submittals for client consideration.
- Be involved and/or assist others in the project development of Energy Conservation projects.
- Direct and manage project fulfillment from beginning to end including a combination of self-managed projects as well as directing field project management
- Plan, schedule, and track project timelines and milestones using appropriate tools.
- Develop and deliver progress reports, proposals, requirements documentation, and presentations.
- Proactively manage changes in project scope, identify potential conflicts, and develop contingency plans.

Education, work experience and/or training:

Education:

- Bachelor's of Science Degree in Mechanical, Architectural Engineering or similar discipline required.
- Professional Engineer license for Mechanical required.

Experience:

- Minimum of 7 years of progressive energy engineering experience performing energy consulting, energy engineering, energy audits, and energy project development is required.
- Experience in Construction Administration and documentation procedures required.
- Experience with energy projects, facility engineering, HVAC, assessment / planning, peer review, design and/or consulting services required.
- Experience with HVAC and automated controls and/or construction/renovation projects is strongly preferred.
- Experience in commissioning and existing building commissioning in all types of facilities, markets, and industries (using ASHRAE Guideline 0 and Guideline 1 methodology).
- Demonstrated experience with HVAC Control, Building Automation Systems, Energy Management systems and software is required.

Training / Certifications:

- Certified Energy Manager (CEM) or Commissioning certification is strongly preferred.
- LEED certification is a plus.

Knowledge, skills, and abilities typically needed for competent performance:

- Must possess strong leadership competencies and willingness to collaborate and work cross functionally to maximize business results and positive customer experiences.
- Must possess strong interpersonal skills and strong business acumen including ability to develop energy projects and to provide a wide range of solutions to clients.
- Possesses deep technical expertise in commissioning, retro-commissioning, and energy auditing within existing buildings.
- Ability to effectively interact at all levels of an organization and effectively build value with high profile customers.
- Familiarity with energy analysis methodologies and tools.
- Ability to perform directly as well as provide technical and functional guidance to the team in the application of the retro-commissioning process, testing equipment and use, and web based software.
- Proficiency with project management software, such as MS Project, Deltek Vision, or similar.
- Must possess strong verbal and written communication skills. Proficient speaking and writing skills for report writing and presentations to clients.
- Must be highly proficient with a PC including the Microsoft Applications and Energy Simulation model applications. Direct experience with Energy Models is a plus.
- Knowledgeable with ASHRAE Guideline 0 and Guideline 1 methodology.

Physical and/or travel demands:

- Able to conduct on-site surveys in variety of building types accessing rooftop units, mechanical rooms, and basement equipment, or equipment located on building grounds outdoors.
- Off-site work requires company-provided OSHA safety training.
- Minimal travel is required for this position as most projects are located within the region.

To Apply: Interested parties should apply on-line at our website:

http://usengineering.com/careers/open-positions

Energy Engineer

Reports To: Director of Energy Solutions

Primary Purpose:

The Energy Engineer supports the Energy Solutions team in analyzing energy efficiency in new building construction and in executing energy audits, HVAC system assessments and retrocommissioning for existing buildings. Position will include a combination of analytical work and field testing. Engineer will also support the engineering services team in performing preliminary HVAC systems analysis and design and providing technical support for operations activities. Tasks will be performed under supervision of Energy Solutions and Engineering managers.

Principal Duties and Accountabilities:

- Perform energy engineering of mechanical systems for new building construction, including energy modeling and economic analysis of competing mechanical systems.
- Perform field activities within existing buildings including onsite HVAC system assessments, energy audits, and retro-commissioning tasks.
- Conduct project site surveys to verify existing conditions of architectural, mechanical, plumbing, and/or electrical systems.
- Perform data input, utility rate analysis, and evaluation of energy conservation measures.
- Perform preliminary design reviews of mechanical or electrical systems supporting HVAC, central plant and building automation systems.
- Perform design tasks and calculations under the direction of Project Managers, such as: duct layout, piping layout, heating and cooling load calculations, plumbing system layout, and equipment selection.
- Generate preliminary mechanical system design narratives.
- Assist with preparing test procedures for mechanical system operation.
- Create written progress reports that thoroughly describe findings and recommendations.

Education, work experience and/or training typically possessed by qualified candidate: **Education**:

- Bachelor's of Science Degree in Mechanical, Architectural Engineering or similar discipline required.
- Successful completion of the Fundamentals of Engineering (FE) exam is strongly recommended.

Experience:

- 1-3 years work experience in energy modeling, energy auditing, and design.
- Experience with building energy modeling software such as eQuest, Energy Plus, or other DOE approved software is required.

Knowledge, skills, and abilities typically needed for competent performance:

- Proficient in computer skills utilizing current Windows operating systems and software.
- Experience with spreadsheets, data entry, formulas, and data manipulation.

- Experience with HVAC systems including cooling, heating, and air distribution systems.
- Experience with basic HVAC design including basic psychrometrics and heat transfer concepts.
- Proficient speaking and writing skills for report writing and presentation to clients.
- Strong analytical skills.
- Keen attention to detail.
- Able to manage time effectively and meet deadlines.
- Ability to be flexible, adapting to changing or competing priorities.
- Ability to work in a variety of team environments, from office professionals to field personnel.

Physical and/or travel demands:

- Able to conduct on-site surveys in variety of building types accessing rooftop units, mechanical rooms, and basement equipment, or equipment located on building grounds outdoors.
- Minimal travel may be required, although the majority of projects will be located in the region.

To Apply: Interested parties should apply on-line at our website:

http://usengineering.com/careers/open-positions

Preconstruction Manager

Reports To: Regional Manager of Preconstruction Services

Primary Purpose:

The Preconstruction Manager will manage project designs and budgets through preconstruction phase, for projects ranging up to or beyond \$50 million in mechanical value. This role will serve as an integral part of the project development group. Manages project designs and budgets, from inception through the preconstruction phase, and continues to act as a resource throughout the project.

Principal Duties:

Design / Engineering:

- Conceptually finish the design on incomplete decision documents, ensuring competitive and complete proposals.
- Review of design documents for evaluation of project, cost impact, and schedule impact.
- Generate and/or review engineering calculations by the design engineer.
- Generate value engineering and design options for projects, including consultation with Owners, General Contractors, Architects, and Engineers.
- Perform life cycle cost analysis of systems and options to generate desirable outcomes for potential clients.
- Generate schematic drawings of systems for consultation.
- Manage the design progress on design-assist and design-build projects in terms of scope control, schedule impact and coordination.
- Lead the electrical and general coordination on design-assist and design-build projects.
- Serve as a resource for Project Managers and Field personnel on design issues.
- Provide solutions to engineering applications both internally and externally.

Estimating:

- Generate budget estimates along with scope definition from incomplete design information
- Assist in the development and maintenance of a preliminary estimating method, format and process, that meets our preliminary estimating goals.
- Update preliminary estimates until final design is complete. Identify and track scope changes as part of estimate updates.
- Generate and maintain database of estimating information from past projects, as coordinated with estimating staff.

Critical Path Schedule Items:

- Partner with Project Manager to review general contractor's project schedule to identify potential issues.
- Develop preliminary mechanical project schedules, soliciting input from the Project Manager and Superintendent as necessary, to identify major work tasks, preconstruction efforts, equipment delivery, phasing issues and design milestones.
- Assist the Project Manager for updates to the project schedule until preconstruction ends.

Marketing:

- Develop and foster effective relationships with clients who possess decision making authority.
- Take support role in marketing of design-assist and design-build projects as coordinated with regional leadership.
- Participate in the development of marketing materials that will aid in business development.

Miscellaneous:

- Assist regional leaders with the review of contracts on design-assist and design-build projects to ensure acceptable language and contractual obligations.
- Provide training on design-related topics to the Project Managers, as appropriate.
- Serve as mentor, role model and trainer to other regional staff.
- Conduct regulatory and code investigations for compliance.
- Aid in project pursuits through the preparation of proposals, from RFP through interview preparation and participation.
- Attend weekly Project Managers meetings and weekly Estimating/Preconstruction staff meetings.
- Serves as a resource to Project Manager on the management of scope and budget items.
- Coordinates with Project Manager to perform constructability reviews.
- Maintains direct involvement in the project from inception to closeout.
- Partners with Project Manager during project closeout to ensure the proper efficiency and performance of the mechanical systems.

Education and Work Experience:

Education:

- Engineering degree in mechanical, architectural engineering or relevant degree is required.
- Professional Engineer registration strongly preferred.

Experience:

• Previous experience in preconstruction services; or minimum of 8 years experience in design of HVAC and plumbing systems.

Knowledge, Skills, and Abilities:

- Strong knowledge of HVAC and plumbing engineering
- Engineering design expertise
- Ability to manage to a budget, which requires basic financial acumen
- Proficient in MS Excel
- Time management / organizational skills
- Strategic thinking and ability to utilize foresight and planning.
- Strong negotiation and conflict resolution skills
- Ability to develop and foster effective professional relationships in order to gain credibility
- Ability to use analytical, methodical approach
- Effective communication skills ability to articulate message, to be persuasive, and explain position to various target audiences who may possess varying levels of technical knowledge.
- Display a keen sense of urgency to deliver results.

Physical and/or Travel Demands: Occasional travel (regionally) may be required; typically does not involve overnight stays.

To Apply: Interested parties should apply on-line at our website:

http://usengineering.com/careers/open-positions