Federal Utility Partnership Working Group Meeting
October 20-21, 2010
Rapid City, South Dakota

Hosted by: Montana-Dakota Utilities Co.

INTRODUCTION

The Federal Utility Partnership Working Group (FUPWG) is a joint effort between the Federal Energy Management Program (FEMP) and the utility industry to stimulate the exchange of information among participants and foster energy efficiency projects in Federal facilities nationwide. 136 individuals attended the meeting.

Attendance Representation:
- 20 Utility officials
- 43 Federal agency representatives
- 6 National Laboratory representatives
- 67 Representatives from energy-related organizations

(See Appendix 1 for a full list if participants and organizations at the end of this report.)

MEETING PRESENTATIONS

Meeting presentations can be found at:
http://www1.eere.energy.gov/femp/financing/uescs_fall10_agenda.html

APPENDICES AT THE END OF THIS REPORT

Appendix 1: Meeting Participants List

AGENDA

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Montana-Dakota Utilities Welcome
FEMP Welcome and Washington Update
Electric Vehicle Update
O&M/Commissioning Panel
- Retro-Commissioning Insights and Best Practices
- Retro-Commissioning Best Practices from Utilities
- Certification for Building Commissioning

Working Session Building Commission/Retro Commissioning: How to Incorporate into UESC Contracts
- Pacific Northwest National Laboratory
- Southern California Edison
- Navy & NASA

USDA Agency Update
Navy Technical Evaluation Program

Day 2
Welcome
Project Finance Case Studies
Montana-Dakota Utilities Solar Energy Project Case Study: Ellsworth Air Force Base
BioGas Project Applications for Federal Agencies and Utilities
Energy Encroachment
Critical Mission Support Through Energy Security Development of an Army Energy Security Assessment Model

All presentations from the FUPWG Rapid City meeting are available on the FEMP Web site at:
http://www1.eere.energy.gov/femp/financing/uescs_fall10_agenda.html

DAY 1 – WEDNESDAY, October 20, 2010

WELCOMING REMARKS

Dennis Haider, Executive Vice President, Montana Dakota Utilities Co.
Mark Howard, Ellsworth Air Force Base - Asset Management

Dennis Haider welcomed attendees to the meeting. Mr. Haider announced Montana-Dakota's (MDU) acquisition of Cascade Natural Gas and the Intermountain Gas Company.

Mark Howard presented a video on the Air Force's commitment to achieving their energy efficiency goals. The video was produced for October's Energy Awareness Month, and featured Major General Tim Byers, an Air Force Civil Engineer. The video can be viewed in its entirety on the FEMP Web site: http://www1.eere.energy.gov/femp/financing/uescs_fall10_agenda.html

FEMP WELCOME AND WASHINGTON UPDATE

David McAndrew, Chair of the Federal Utility Partnership Working Group, FEMP, Department of Energy

David McAndrew welcomed the audience on behalf of FEMP and the utilities. Mr. McAndrew announced the recent departures of Richard Kidd, Program Manager from FEMP and Jesse Feinberg, a support contractor from Energetics. Temporarily replacing Richard Kidd is Skye Schell, with FEMP, and permanently replacing Jesse Feinberg is Sarah Mabbitt, with Energetics. Going forward, UESC project data will be sent to Sarah Mabbitt (smabbitt@energetics.com) and Aly Dean (adean@energetics.com).

Mr. McAndrew briefly discussed the new Memorandum of Understanding (MOU) between the Department of Defense (DOD) and Department of Energy (DOE), as well as DOE's recently published Federal Solar Guide. The MOU was signed on July 22, 2010, serving to broaden DOD and DOE collaboration efforts on clean energy technology. The 104 page Federal Solar Guide is a comprehensive guidance document detailing actions for implementing solar technology at Federal sites.

David McAndrew announced a forthcoming RFP for the SPIDERS JCTD pilot project. The SPIDERS JCTD pilot project is a secure, smart micro-grid project scheduled for a three phase delivery. The project is currently seeking a project systems integrator. An RFI was issued in August 2010 and a draft RFP will be issued in December 2010. Following the RFP, the SPIDERS JCTD pilot project will follow a two step collection process to accept six RFPs.

Mr. McAndrew discussed *Energy Empowers*, a new DOE blog detailing the nation's efforts to support a clean energy economy. The blog highlights activities associated with energy efficiency in the residential, commercial, and industrial sectors, as well as renewable projects; including solar, wind, water, biomass, geothermal, hydrogen, and fuel cells. Those interested in submitting content about Federal projects, should contact Sarah Mabbitt (smabbitt@energetics.com). Non Federal projects should be submitted through the EERE Web site: http://www.eereblogs.energy.gov/energyempowers.

Mr. McAndrew spoke briefly about the 2010 Federal Energy and Water Management Awards which were held in October. The award criteria had been recently revised; Pamela Komer, with the U.S. Department of Homeland Security, U.S. Coast Guard Civil Engineering Unit, was the first contracting officer to be recognized for an award associated with a UESC.

David McAndrew also provided an update on the Green House Gas Reporting Guidance that was issued by the White House Council on Environmental Quality (CEQ) on October 6, 2010. Mandatory guidance will follow for calculating and reporting emissions. Agency responsibilities as defined in the guidance include:

- Preparing inventories for scopes 1, 2, and certain 3 emissions
- Selecting and deploying "bottom-up" tools and processes
- Compiling data throughout agency-wide hierarchy
- Implementing quality assurance procedures

FEMP's responsibilities for the Green House Gas Reporting Guidance include:

- Developing an electronic reporting capability (portal) to receive data
- Updating formulas and emission factors
- Working with agencies and experts to evolve Guidance
- Reviewing submitted data and following up to clarify inconsistencies
- Ensuring compatibility with and accommodate prior reporting requirements

Agencies are required to retain RECs and all renewable and carbon attribute in order to reduce their GHG emissions under scope 1 and 2.

TRIBAL COMMUNITY

Ken Haukaas, Rosebud Sioux Tribal Trust, Rosebud Indian Reservation

Ken Haukass presented an overview of the Rosebud Indian Reservation's wind power project. Several towers have been installed in Rosebud County; the Akicita Cikala turbine is presently not functional. The preliminary NEPA requirements have all been completed. The systems impact and interconnection study was conducted by the Nebraska Public Power District. The findings indicate that electricity prices on the base have increased ~30 percent in the past three years. Visit http://www.rosebudsiouxtribensn.gov/index.php?option=com_content&view=article&id=70&Itemid=77

for more information about the Rosebud Indian Reservation.

ELECTRIC VEHICLES UPDATE

Amanda Sahl, FEMP, Department of Energy

Amanda Sahl provided an update on the Federal fleet inventory. Ms. Sahl explained how USPS and GSA fleets, which are owned and leased by agencies, are heavily impacted by Federal fleet requirements. Petroleum fuel reduction use is the largest unfulfilled requirement; there has been an increase (rather than a decrease) in petroleum use.

Of the 600,000 Federal vehicles currently in use by the Federal government in FY09, 5,000 were plug-in hybrid electric vehicles (PHEV). As a result of external funds, DOE purchased nearly 6,000 additional hybrids in FY09.

Federal agencies cannot use appropriated dollars to install charging stations and/or equipment for employee/personal use. Agencies are allowed to install for fleet and employee use, but not for solely for employees use.

Visit the FEMP Web site for the complete guidance on Federal fleets:
http://www1.eere.energy.gov/femp/pdfs/fleetguidance_13514.pdf

O&M/COMMISSIONING PANEL

Ab Ream, FEMP, Department of Energy

Ab Ream provided the following announcements related to Federal O&M activities:

- Advanced Metering Solutions for Federal Agencies is a one day operations and maintenance forum that will be held in conjunction with World Energy Conference, on December 7, 2010. Information about the forum may be accessed from the FEMP Web site: http://apps1.eere.energy.gov/femp/training/course_detail_live.cfm/CourseDateId=62
- The *Commissioning for Federal Facilities Guidebook* is available online: http://www1.eere.energy.**g**ov/femp/pdfs/commissioning_fed_facilities.pdf
- A new version of *O&M Best Practices Guide* was released in August 2010. The guide includes a new section on water, as well as software tools. A section on UESCs is covered in Chapter 3, under *Contracting Types.* The guide has been posted to the FEMP Web site: http://www1.eere.energy.gov/femp/pdfs/omguide_complete.pdf
- There is an open call for O&M and commissioning project case studies; please send comments and as well as any suggestions for case study ideas to Ab Ream ab.ream@ee.doe.gov.

RETRO-COMMISSIONING INSIGHTS AND BEST PRACTICES

Carl Lundstrom, Building Commissioning Association

Carl Lundstrom discussed retro-commissioning insights, best practices, and a study by the Lawrence Berkley National Laboratory (LBNL). The LBNL study evaluated several projects identifying commissioning opportunities.

Mr. Lundstrom also provided information about a new committee formed by the Building Commissioning Association. The committee serves to review existing building commissioning guides and programs. It recently developed a best practices document, which has been posted to the Building Commissioning Association Web site: http://www.bcxa.org/resources/pubs/index.htm. Some highlights from this document include:

- Establish building requirements in writing; include specific details such as processes performed and temperature requirements.
- During the investigation phase, include survey trending, diagnostic monitoring, and system testing; include reverse engineering processes at this phase.
- The implementation phase should address recommendations identified during the investigation phase, and include measures for assessing performance.
- A training plan emphasizing optimum levels for building operations should be available to O&M staff.

RETRO-COMMISSIONING BEST PRACTICES FROM UTILITIES

Ryan Stoianowski, Commonwealth Edison

Ryan Stoianowski discussed the The ComEd *Smart Ideas Program*, serving to illustrate some of the commissioning best practices that are used by utilities. The *Smart Ideas Program* provides incentives for energy efficient upgrades within the state of Illinois. The goal of the program is to reduce energy consumption by 1.2 million MWh within 3 years. The program timeline is measured in program years (PY1-3). The program is currently in PY 3, performing well, and building stock. The ComEd *Smart Ideas Program* maintains two types of electric retro-commissioning; commercial building and compressed air. Projects in the *Smart Ideas Program* do not require a signed written agreement until after the planning phase. The future direction of ComEd's program includes two new projects, niche program elements (i.e. data centers, chilled water), collaboration with gas utilities, and studying the viability of smaller buildings. A program for gas utilities will be available in June 2011.

CERTIFICATION FOR BUILDING COMMISSIONING

Phil Welker, Executive Director, PECI

Phil Welker provided a discussion on developing a building commissioning strategy. When building a strategy, it is important to consider:

- Building size
- Project budget
- Current energy performance
- Building control systems
- Occupancy rates

The strategy (based upon building-type, goals, and budget) may include implementing targeted tune-ups, comprehensive EBCx, or monitoring-based /ongoing commissioning (MBCx). A retro-commissioning guide for building owners is available from the California Commissioning Collaborative: www.cacx.org.

WORKING SESSION BUILDING COMMISSION/RETRO COMMISSIONING: HOW TO INCORPORATE INTO UESC CONTRACTS

Julia Kelley, Moderator, Oak Ridge National Laboratory

Doug Dixon, Pacific Northwest National Laboratory

Doug Dixon presented a case study on a UESC project at the Redstone Arsenal in Alabama. The UESC project with TVA, was developed to:

- Decommission four miles of existing steam service and install a natural gas distribution system.
- Audit 44 buildings for feasible energy conservation measures including:
  - Lighting
  - Controls / Energy Management System
  - HVAC upgrades
  - Insulation

The Redstone Arsenal has an above ground steam line, covering 29 miles. Prior to the UESC, the existing system was causing significant energy consumption. The actual projected savings from steam in FY 10, was $1,239,630. The Redstone Arsenal project took 3 years to implement the first task order (TO) for $10 million. The commissioning scope includes:

- Design Phase Commissioning
- Construction Phase Commissioning
- Acceptance Phase Commissioning
- Warranty Period Commissioning

RETRO-COMMISSIONING (RCx)

Phil Consiglio, Southern California Edison

Phil Consiglio discussed both the value and costs associated with UESC retro-commissioning projects. To prevent over-spending on retro-commissioning one should:

- Include RCx in Delivery Orders (initiate the retro-commissioing process early)
- Provide a clear scope of work
- Specify kW per ton on completion
- State the current condition of the equipment
- State the expected performance in the Delivery Orders and require contractors to agree up-front
- Hire a Contractor experienced in commissioning
- Hire a Commissioning Agent

A list of RCx resources may be found on the following Web sites:

- California Commission Guide (Existing Buildings): http://www.documents.dgs.ca.gov/green/commissionguideexisting.pdf

- FEMP: http://www1.eere.energy.gov/femp/program/om_commissioning.html

NAVY & NASA UPDATE

Chris Gillis, PG&E

Chris Gillis presented an overview of retro-commissioning and UESCs. Ideal candidates for retro-commissioning include: large commercial facilities (>100,000 square feet), industrial facilities, manufacturing facilities, and high-tech/biotech facilities (data centers, labs, clean rooms). Retro-commissioning measures are determined by a case by case basis. Retro-commissioning activities include:

- Tuning VAV controls to eliminate simultaneous heating and cooling
- Tuning and repairing economizers
- Reprogramming building controls
- Calibrating sensors
- Adding sensors and control points
- Resetting chilled and hot water set points
- Pneumatic to DDC Conversion

USDA AGENCY UPDATE

Sandy Morgan, U.S. Department of Agriculture

Sandy Morgan discussed the Agricultural Research Service's (ARS) Energy Water and Sustainability Program. This program includes 3,200 buildings in 106 locations with an annual energy cost of $45 million. The USDA has ten UESCs in various stages. All of these projects employ the goals of renewable energy, metering, and recommissioning. Mr. Morgan also discussed a recent ESPC performed in Texas (as the state does not currently permit the use of UESCs). This project received a free E4 audit from Ameresco, which identified 89 ECMS across a variety of locations.

Mr. Morgan spoke about USDA ARS's recent activities, which have included developing policies, and providing outreach to various service locations. USDA ARS recent outreach activities include writing policies, developing bulletins and targeted messaging, creating an energy awareness SharePoint site, developing PowerPoint presentations, participating in monthly conference calls and recognition opportunities. USDA ARS has also worked to improve its reporting capabilities and has performed surveys per EPAct 2005; serving to pinpoint gaps in system efficiency.

Recent sustainability measures from USDA include:

- 1 LEED NC certified project (bio lab in Ames)
- Issuing a policy which stated that every location is required to use green cleaning products, recycle, and cannot purchase HCFC equipment.

NAVY TECH EVALUATION PROGRAM

Paul Kistler, NAVY

Paul Kistler presented on the Navy Technical Evaluation (Techval) progam. Techval's current project focuses on work station specific lighting. This system utilizes open cubicles with individual fixtures on occupancy sensors (lamps are T5 5K). The system does not have vampire loads because the ballasts stay warm. The system also allows for personal preferences in lighting. This work station lighting does not replace task lighting. The project's estimated payback is 17 years, although recent projects indicate total savings of 70 percent in lighting energy use. The biggest challenges are faced in older facilities (with an average foot candle of 12 feet). The lights turn off at 6:00 pm however, when working past 6:00 pm, the lights must be turned back on and the system resets until 8:00 pm (and continues to reset each time you turn lights back on throughout the night).

The initial project findings indicate that younger workers prefer this lighting, however older workers (over 50) do not particularly like this lighting system. The predominate issues encountered in the Navy include: the mounting height (per fire code) on a 9' ceiling, uniform lighting in passageways, shadows in work area, hot spots and glares, and Navy IT security measures.

Visit: www.lightingsolutions.energy.gov for more information.

DAY 2 – THURSDAY, October 21, 2010

PROJECT FINANCE CASE STUDIES

Scott Foster, Hannon Armstrong

Scott Foster spoke of the common finance issues regarding renewable projects; such as an equity floor within the $20-25 million range. Additional volume in renewable projects can reduce the current floor. Utilizing the Treasury cash grant, investment and production tax credits, renewable energy credits and state rebates are essential to a project's viability.

In most UESCs/ESPCs, the asset title is initiated during project acceptance. In order to capture tax benefits, the title must be associated with a tax-paying entity. The Federal customer will have the option to purchase the asset for fair market value after five years. Alternatively, at the end of the contract, the asset may be purchased, the service agreement may be extended, or the asset may be returned. Prior to entering into an agreement (to ensure the governments' protection), it's important to establish whether or not the entity is eligible for a bond (assignment of claim alt 1). In the event that the non investment grade company defaults on another government contract, the government reserves the right to take payment. Alt 1 prevents the government from taking that money. Current finance 'hot buttons' include: permitting issues, and assumptions on long term tax credits and politics.

Scott Foster presented the following case studies:

Commercial ScaleBiomass Gasification for a National Laboratory

- *Identified Problem*: ORNL was operating with a WWII era vintage power system and funding constraints; hindering technology development and commercialization.
- *Solution*: Through an ESPC, Hannon Armstrong provided the required $100 million to allow Johnson Controls to install a state-of-the-art biomass gasification project, along with other energy upgrades.

Design, Construction, and Financing of Chiller Plant at Howard University Hospital

- *Identified Problem*: Howard University Hospital facilities operated with an inefficient chiller plant. The undersized air conditioning system did not provide adequate cooling to maintain the hospital facilities.
- *Solution*: Honeywell Building Solutions and Hannon Armstrong teamed with the hospital to offer a comprehensive solution that covered the design, construction and financing of a new chiller plant. Under the resulting public-private partnership, Hannon Armstrong acquired the title to the existing chiller plant, with Honeywell as the operator. The hospital entered into a long-term purchasing contract with Hannon Armstrong to obtain chilled water. Honeywell has designed an expanded chiller plant, and begun construction on the new facility which will also be owned by Hannon Armstrong. Once the new chiller plant is complete, Honeywell will oversee operations on behalf of Hannon Armstrong. Substantial portions of the old chiller plant will be refurbished and maintained, serving as a "backup" source for any future cooling needs.

Biomass Cogeneration Commercial Scale Biomass Cogeneration for a U.S. Department of Energy Facility

- *Identified Problem:* SRS's facilities operated with a 1950s era coal-fired steam plant and funding constraints, despite the availability of better energy efficient technology and abundant renewable resources.
- *Solution:* Through an ESPC, Hannon Armstrong provided $125 million to enable its client to install a biomass cogeneration facility capable of producing 240,000 pph of steam and 20 MWs of electricity, along with other energy upgrades.

Fiber Optic System for U.S. Army Kwajalein Atoll (USAKA)

- *Identified Problem*: USAKA communications are satellite-based, which is costly and allows limited bandwidth. As a result, SMDC has to maintain a number of expensive DOD contractors at USAKA that could otherwise perform their functions remotely from SMDC's Huntsville headquarters.
- *Solution:* Hannon Armstrong owns and financed the $63 million 2,900 km fiber optic system connecting to Guam that can connect to Huntsville.

Fiber Optic System for NASA/NOAA and USAF in the Arctic Circle

- *Identified Problem:* NASA/NOAA and the U.S. Air Force did not have the funding for a fiber optic line that ensures fast and reliable data transmission.
- *Solution:* Hannon Armstrong provided the $40 million required to build the fiber optic system, taking payment out of avoided satellite transmission fees.

Utility Scale Geothermal Power Plant in Salton Sea Area

- *Identified Problem:* The Project Finance market had not seen a triple-flash geothermal transaction in 20 years; the project did not have an EPC wrap.

- *Solution:* Hannon Armstrong advised Energy Source on how to create a synthetic EPC structure and reacquainted the lenders on the merits of base-load geothermal power plants.

MONTANA-DAKOTA UTILITIES SOLAR ENERGY PROJECT CASE STUDY: ELLSWORTH AIR FORCE BASE

Dell Peterson, Energy Manager, Ellsworth Air Force Base
Dale Skillman, Director of the Office of Technology Transfer for the South Dakota School of Mines & Technology

Dell Peterson and Dale Skillman discussed the South Dakota School of Mines and Technology (SDSM&T) and the MDU solar project case study as Ellsworth AFB. SDSM&T is an engineering, mechanics and technical school. The school recently won a government award to fund a research project on nutrieans. The project will install and maintain an underground lab to perform experiments 4850 ft below the surface, and spearhead research on nutriean matter.

Mr. Skillman spoke about using solar thermal PVs, which include two types of collectors: transpired collectors and flat plate collectors. Metering buildings is one of the most important tenets of implementing a solar thermal PV; serving to establish which building/system/process use the most thermal energy in a facility. This data helps identify which demands may be met through direct use of solar thermal, while load dictates what kind of solar system is installed. Photo voltaic and thermal (PVT), hybrid solar, is a widely used technology in Europe. Cooling the PV array increases the PV efficiency. To ensure PV project success, five steps must be followed: characterize loads through metering, use solar thermal technology wherever possible, select applications with the most potential, design utilizing predictive dynamic models, and monitor performance through metering.

Mr. Peterson spoke about the solar energy project at Ellsworth Air Force Base (AFB). This project included $7.2 million worth of new energy improvements. More than 65 percent of the Ellsworth AFB has advanced metering for electricity, water, and gas.

BIOGAS PROJECT APPLICATION FOR FEDERAL AGENCIES AND UTILITIES

Wolfgang Driftmeier, President, Alternate Energy Systems Inc.

Wolfgang Driftmeier discussed the maximization of BioGas, a natural gas substitute. BioGas is produced through the biological breakdown of organic matter, and can be produced through processing corn, landfill material, household and industrial waste. BioGas has about half of the heating value of natural gas due to different heating values. Natural and biogas are not interchangeable, but an interchange can be made by adjusting equipment to low BTU.

The most significat limitations of BioGas are the inconsistent production levels. BioGas is most often used for electric generators which require constant consumption. The only way to store BioGas is within the distribution system where consumption is adjusted by staging multiple generators. It is impossible to exactly match BioGas production with consumption. The energy used in BioGas is CH4. An experimental process to bring BioGas to the public is to dilute the natural gas with air to reduce heating value, later adding it back to the BioGas in times of peak load. With this process, BioGas becomes a viable source for renewable energy. BioGas can be a viable solution for Federal sites, especially for those facilities near arable land that produces feedstock. Federal Energy Managers are

often opposed to using BioGas because it is seen as too cumbersome to manage the production levels.

Mr. Driftmeier presented a case study in which a German farmer supplies BioMethane produced from his cows to a city grid. For approximately twelve days a year, the BioMethane produced exceeds the town's consumption, so the BioMethane is blended with propane, injected back into transmission line and used throughout the town.

Mr. Driftmeier concluded that BioGas is highly reliable (and affordable), the technology is now available to provide backup/standby/augmentation for BioGas; making it a viable solution. The availability of easy-to-use NGA blenders reduces fossil fuel use by government installations and public utilities.

ENERGY ENCROACHMENT

Mike Aimone, Battelle

Mike Aimone discussed energy encroachment and land use compatibility. The scope of land use compatibility includes:

- The affects of utility-scale renewable energy development near DOD installations, ranges and Military Operational Areas/Special Use airspace on mission operations and readiness
- Land Use Planning as a "states-right" issue –tied to "Police Powers"
- DOI's Public Lands "withdrawn" for "military purposes"
- DOD's desire to seek "land use compatibility" via reasonable land use controls

Compatibility is the foundation of military readiness; serving to balance between community needs/interests and the needs/interests of the military. The goal of compatibility planning is to promote an environment where both entities can balance impacts. Outreach and partnership building is essential to ensure compatible energy development. If the local processes are not understood, then the issues cannot be addressed effectively.

Each state has its encroachment laws; The Office of Economic Adjustment within DOD conducts joint land use studies to see how military land use interplays with the community and how it affects military installations (and vice versa).

The technical gaps that exist in Federal planning to support renewable energy development include:

- "Whole of Government" transparency and visibility on reviews
- Timeliness of decision making
- Assessment/prioritization of air, land, sea and space assets required for current and future mission
- The lack of a defined engagement strategy for private lands
- Lack of consistent "Whole of Government" outreach at local/regional/national levels
- The lack of a streamlined Federal level interagency governance siting process for renewable energy projects that is compatible with all state/county and local efforts
- Existing agency siting standards need to be published, so they are widely accessible

Possible solutions include:

- Expand model state, county and local zoning rules to incorporate Utility Scale Renewable Energy issues
- Codify a repeatable, streamlined Federal-level interagency governance sitingprocess for renewable energy projects; make compatible with state, county and local efforts
- Create and make public a set of (simple to complex) planning and analysis tools; ensure transparency, yet protect developers equity
- Publish/fund a R&D Roadmap –efforts must be greater than just DOD
- Continue to use JLUS to better understand, and resolve the nexus between military readiness & Renewable Energy development
- Expand DOD-wide something like the AF's 18 Jun 2010 Interim Guidance –Managing Development Impacts on Air Force Operations
- Update Federal policy, including DOD Instructions, FAA Circulars, DOI, DOE, and DOC Rules, etc.,
- Conduct appropriate outreach/education to all parties involved

CRITICAL MISSION SUPPORT THROUGH ENERGY SECURITY DEVELOPMENT OF AN ARMY ENERGY SECURITY ASSESSMENT MODEL

Chuck Tremel, Concurrent Technologies Corporation

Chuck Tremel provided an overview of the Army Energy Security Assessment (ESA) methodology in relation to critical mission support through energy security. ESA seeks to develop and enhance the draft ESA methodology demonstrated under the Army Power and Energy Initiative (APEI), leverage existing processes (e.g., Anti-terrorism/Force Protection), validate the methodology at an Army installation, and demonstrate at four additional installations for implementation toward improving their energy security. The program drivers include increasing energy security by satisfying EPACT05, Defense Science Board Recommendations, Executive Order 13514 (supersedes EO13423), Energy Independence and Security Act of 2007, and NDAA of 2009 and 2010. Concurrent Technologies Corporation is developing a standardized approach to provide a consistent methodology in identifying mission related tenets. This approach includes establishing an Army-level collaborative working group, defining working group expectations, and continuing to provide support to enhance and define the methodology.

ESA methodology is comprised of three steps:

- Critical energy demands: mission decomposition to prioritize, indentify critical facility functions, identify critical energy systems (analysis of utility systems)
- Risk/vulnerability analysis: determine reality-based initiating events and threat scenarios (war-gaming), and have a prioritized energy vulnerability list
- Installation Solutions: create a high reliability generation and distribution system, provide redundancy, spare parts inventory, look at emergency refueling plan.

APPENDIX 1 - Meeting Participants List
Federal Utility Partnership Working Group Meeting
October 20-21, 2010

Utility		
Gene	Beck	Florida Power & Light
Joe	Bosco	Mississippi Power
Maryanne	Campbell	Philadelphia Gas Works
Phillip	Consiglio	Southern California Edison
Jim	Dishon	MDU
Randy	Dix	Georgia Power Company
David	Dykes	Southern Company/Georgia Power
Roger	Farzaneh	PG&E
Peter	Giannotti	Southern California Edison
Christopher	Gillis	PG&E
Jim	Gray	MDU
Dennis	Haider	Montana-Dakota Utilities Co.
Scotty	Hutto	Gulf Power Company
Marc	Jacobs	MDU
Keith	Kautzman	WBI Holdings, Inc
Stan	Knobbe	Southern California Gas Co.
Philip	LeGrand	Southern California Edison
Jay	Skabo	Montana-Dakota Utilities Co.
Oanh	Tran	Washington Gas Light Company
Dean	Yobs	FPL Energy Services

Federal Agency		
Pete	Aitcheson	NASA
Cathy	Atkins	Army OREGA-W
Jeanine	Avant	US Navy
Stephan	Baker	NAVFAC Southwest
Vern	Borgen	USDA-ARS
Steven	Burnum	US Department of Energy
Nancy	Coleal	Dept of Defense, Air Force
Doug	Culbreth	DOE-FEMP
Gordon	Drawer	FEMP
Elaine	Eder	U.S. Coast Guard
Dorothy	Fowler	NAVFAC Southwest
Greg	Graham	U.S. Department of Agriculture
Jamar	Jackson	USEPA
Adrianos	James	USDA ARS CGAHR

John	Johnson	USDA – ARS
Charles (Don)	Juhasz	Defense Logistics Agency
Delma	Keene	US Navy Kings Bay GA
Suresh	Kikkeri	US Army Corps of Engineers
Paul	Kistler	NAVFAC ESC
James	Kliewer	Ellsworth Air Force
Linda	Koman	U.S. General Services Administration
Pamela	Komer	U.S. Coast Guard
Duane	Krein	ARS-USDA-NGPRL
Art	Kwerneland	Xcel Energy
Allen	Lotz	U.S. Coast Guard
David	McAndrew	FEMP
Sandy	Morgan	USDA/ARS
Curtis	Nichols	Bonneville Power Administration
Bryan	Perry	NCARL
Dell	Petersen	Ellsworth AFB
Ab	Ream	US Department of Energy/FEMP
Edward	Rockenstire	U.S. Coast Guard
Andrew	Rubio	NAVFAC SE JACKSONVILLE
Joseph	Sabel	VA
Amanda	Sahl	DOE – FEMP
Margaret	Simmons	US Army Corps of Engineer- Huntsville Support Center
Randall	Smidt	US Army
Phyllis	Stange	Department of Veterans Affairs
Eric	Steinbeisser	USDA/ARS/NPARL
Lisa	Teeslink	Tetra Tech
Joe	Warrick	ARS-USDA
Thomas	White	ACC/A7OE
Delton	Woodford	Indian Health Services

National Laboratory		
Doug	Dixon	Pacific NW National Lab
Julia	Kelley	Oak Ridge National Laboratory
Bill	Sandusky	Pacific Northwest National Laboratory
Chandra	Shah	NREL
Mike	Warwick	Pacific NW Nat'l Lab
Robert	Westby	National Renewable Energy Laboratory

Energy Related		
Matt	Adamson	ConEdison Solutions
Micheal	Aimone	Battelle
Steve	Allenby	Allenby Associates, LLC
Wayne	Bader	2rw Consultants, Inc.

David	Base	Chevron ES
Steve	Boyle	Pepco Energy Services
Norm	Campbell	NORESCO
Jason	Cartozian	ConEdison Solutions
Steven	Chaffin	Erica Laine Enterprises
Susan	Courtney	Energetics Incorporated
McNeil	Dave	Hannah Solar Government Services
Aly	Dean	Energetics
Kevin	DeGroat	Antares Group, Inc.
John	Dierkes	Schneider Electric
Wolfgang	Driftmeier	Alternate Energy Systems, Inc.
Richard	Eppley	Guggenheim Securities, LLC
Mark	Falasca	CCI Group, LLC - Energy Services
Dave	Fazioli	Wesco Distribution
Liz	Fischer	PECI
Peter	Flynn	Bostonia Partners
Scott	Foster	Hannon Armstrong
Charlie	Gloeckner	Federal Business Group
Bruce	Gross	Dominion Federal Corporation
Mike	Haltiner	South Dakota Dept. of Military & Vets Affairs
Rick	Heath	HANNON ARMSTRONG
JP	Hoffman	Siemens
Mark	Imel	HDR, Inc.
Jay	Johnson	Chevron Energy Solutions Company
Tim	Kehrli	Lutron Electronics
Steve	Kiesner	Edison Electric Institute
Andrea	Kincaid	DLA Energy
Mark	Krog	Siemens
George	Kruse	General Atomics
Jon	Lewis	Honeywell Building Solutions
Carl	Lundstrom	Eaton E M C Engineers
Cheryl	Lydon	NSTec
Jesse	Maestas	URS
Michael	Mason	Siemens
Dave	McCarthy	Bittercreek
Jack	Menninger	Constellation Energy Projects & Services Group
Josh	Mersfelder	HANNON ARMSTRONG
Chuck	Miller	Bitter Creek Energy Services
Terrance	Murrell	PNC Equipment Finance
Leslie	Nicholls	Energetics
Kurt	Nickels	PNC Equipment Finance, LLC
Ken	Ormsbee	Chevron Corp.
Gerry	Place	Johnson Controls
Jacqueline	Powell	GDIT

David	Roberts	Cypress Envirosystems
Lisa	Scholl	Encelium Technologies
Natasha	Shah	Siemens Industry, Inc.
Dale	Skillman	South Dakota School of Mines
Jim	Snook	Sain Engineering Associates
Robert	Somers	2rw Consultants Inc.
James	Spaulding	Eaton
William	Stermer	Energy Systems Group
Ryan	Stoianowski	ComEd
Jeff	Stott	2rw Consultants, Inc.
Tim	Teeslink	Genpro Energy Solutions
Edward	Thibodo	Silver Wolf Consulting
Chuck	Tremel	Concurrent Technologies Corp.
kevin	vaughn	Schneider Electric
Phil	Welker	PECI
Chris	Wheeler	H2O Applied Technologies
Billy	Wise	Eaton-EMC
Scott	Wolf	DOE
Steve	Zip	Energy Systems Group