AGENDA

Utility Exchange Program for Pakistan’s Distribution Companies

Distribution System Engineering, Design, & Operations

September 15 – 22, 2012

New Haven, CT & Cincinnati, OH

Conducted by:
UNITED STATES ENERGY ASSOCIATION (USEA)
&
INTERNATIONAL RESOURCES GROUP (IRG)

Under the:
USAID POWER DISTRIBUTION PROGRAM

Funded by:
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)
Utility Exchange Program for Pakistan’s Distribution Companies
Distribution System Engineering, Planning & Design

PROGRAM OVERVIEW & OBJECTIVES

The U.S. Agency for International Development’s (USAID) Power Distribution Program is a three-year, USAID-financed project designed to facilitate improvements in electric power distribution utilities across Pakistan. The project began in September 2010. The Power Distribution Program works in partnership with the Ministry of Water and Power, Government of Pakistan and nine (9) power distribution companies (DISCOs) located across the four provinces of Pakistan.

The Utility Exchange Program (UEP) of the Power Distribution Program (PDP) aims to share practical information, real-world case studies, and best practices in different electric utility functional areas with Pakistan’s electricity distribution companies. Through a series of exchange programs to U.S. and third-country utilities, UEP will enhance understanding of advanced utility best practices, change management programs, and work cultures that are commercially proven and have the potential of being implemented in Pakistan’s electricity distribution companies.

The primary objective of this executive exchange is for engineers to:

- Gain exposure to best practices in the distribution utility **engineering and design** process, including:
  - Overhead & Underground Distribution Design Process & Criteria
  - Equipment Design and Construction Standards & Specifications
  - Construction Grades/Safety Issues
- Understand best practices in the distribution system **planning and operations** process, including:
  - Planning Process & Criteria
  - Load Forecasting
  - Long-Term Planning
  - Contingency Planning

PARTICIPANTS

1. Mr. Sohail Khan, SDO (PDP Seconded Staff), Peshawar Electric Supply Company (PESCO)
2. Mr. Tajamul Hussain, Assistant Manager P&E, Hyderabad Electric Supply Company (HESCO)
3. Mr. Khalid Khan, Deputy Manager Procurement PMU, Islamabad Electric Supply Company (IESCO)
4. Mr. Zafar Hussain, Additional Manager Planning, Multan Electric Power Company (MEPCO)
5. Mr. Muhammad Asghar Khan, Deputy Manager Planning, Multan Electric Power Company (MEPCO)
6. Mr. Tahir Mahmood, Deputy Manager Planning, Lahore Electric Supply Company (LESCO)
7. Mr. Syed Abdullah, Deputy Manager Planning, Quetta Electric Supply Company (QESCO)
8. Mr. Ali Madad, Assistant Manager Project Management Unit, Quetta Electric Supply Company (QESCO)
9. Mr. Muhammad Saleem, Deputy Manager Planning, Faisalabad Electric Supply Company (FESCO)
10. Mr. Noor Ahmed Soomro, Assistant Manager, Sukkur Electric Power Company (SEPCO)
USEA COORDINATOR
Mr. Andrew Palmateer
Program Coordinator
United States Energy Association
1300 Pennsylvania Avenue, NW
Suite 550
Washington, DC 20004-3022 USA
Telephone: +1-202-312-1230
Telephone (direct): +1-202-312-1286
Mobile: +1-315-244-1384
Email: apalmateer@usea.org
www.usea.org

DRESS CODE
The dress code for the program will be business casual. Site visits may involve moderate amounts of walking, and comfortable shoes are essential. Any safety equipment necessary (hard hats, eye and ear protection, etc.) will be provided by the utilities.

WEATHER
New Haven and Cincinnati both lie between humid subtropical zones and humid continental zones. In September, average temperatures range from 60˚ F (15˚ C) and 75˚ F (23˚ C).

LODGING
New Haven, Connecticut (September 15-19)
Courtyard New Haven at Yale
30 Whalley Ave
New Haven, CT 06511 USA

Cincinnati, Ohio (September 19-22)
Cincinnati Marriott at RiverCenter
10 West RiverCenter Boulevard
Covington, Kentucky 41011

EMERGENCY
In case of emergency, police, fire, and ambulance can all be reached by dialing 911 from any phone, or contact the USEA coordinator.
Utility Exchange Program for Pakistan’s Distribution Companies
Distribution System Engineering, Planning & Design

**SCHEDULE**

**DAY 1 - FRIDAY, SEPTEMBER 14, 2012: ARRIVAL IN U.S.**

Delegates arrive into JFK

Lodging:
Courtyard New Haven at Yale
30 Whalley Ave
New Haven, Connecticut 06511 USA

**DAY 2 - SATURDAY, SEPTEMBER 15, 2012: ORIENTATION**

Morning
Executive Time

Afternoon
**Orientation**
USEA’s Andrew Palmateer will meet the delegates in the hotel for program orientation, including agenda review, U.S. power sector overview, per diem distribution, and to address any outstanding issues.

**DAY 3 - SUNDAY, SEPTEMBER 16, 2012: EXECUTIVE TIME**

Executive Time

**DAY 4 - MONDAY, SEPTEMBER 17, 2012: UNITED ILLUMINATING COMPANY**

**United Illuminating / UIL Holdings Participants**
James Torgerson, President and CEO, UIL
Anthony Valillo, Executive Vice President, UIL. President & Chief Operating Officer, UIL
John Prete, Senior Vice President, Electric Transmission & Distribution
Joseph Thomas, Vice President, Electric System Operations & Client Fulfillment
Richard Cutuli, General Manager, Client Fulfillment
Charles Eves, Senior Director, Engineering & Strategic Planning
Guy Cattaruzza, Senior Director, Standard Field & Revenue Meter Systems
James A. Cole, PE, PMP, Director, Transmission and Distribution Operations and Maintenance
Eduardo DelMonte, Transmission Operations Lead Engineer
Joseph Flach, Manager Electric System Operations
Robert Manning, Manager, System Integrity
Michael Zaffina, Manager, Infrastructure Planning
Walter Booker, Manager, Safety & Technical Training
Utility Exchange Program for Pakistan’s Distribution Companies
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Robert Pellegrini, Manager Protection & Control
Bryan LaPerle, Manager (SCADA)
Mohammad Pasha, Principal Engineer
Jay Wahlberg, Lead Safety Specialist

Christian Bilcheck, Director, Asset Planning Transmission
Vincent Brescia, Manager, Overhead Power Delivery

<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00</td>
<td>Jim Torgerson</td>
<td>Introductions, Program Overview, Safety Reminders</td>
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<tr>
<td>09:10</td>
<td>John Prete</td>
<td>Overview of United Illuminating Company</td>
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<tr>
<td></td>
<td>Joe Thomas</td>
<td>• History</td>
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<td></td>
<td></td>
<td>• Assets</td>
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<tr>
<td>09:30</td>
<td>Walt Booker</td>
<td>• Service Territory</td>
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<tr>
<td>09:45</td>
<td></td>
<td>• Customer Base</td>
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<tr>
<td></td>
<td></td>
<td>• Corporate Structure</td>
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<tr>
<td></td>
<td></td>
<td>• Safety</td>
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<td></td>
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<td>(Safety Rule Book, Industry Standards NESC/OSHA)</td>
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SYSTEM PLANNING PROCESSES & PRINCIPLES

09:00  Jim Torgerson  Introductions, Program Overview, Safety Reminders

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<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Topic</th>
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<tbody>
<tr>
<td>10:15</td>
<td>Chuck Eves</td>
<td>• Organization and responsibilities of planning unit</td>
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<td></td>
<td></td>
<td>• Staffing, qualifications, and training programs</td>
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<tr>
<td>10:45</td>
<td>Coffee &amp;</td>
<td>Tea Break</td>
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<tr>
<td>11:00</td>
<td>Bob Manning</td>
<td>• Long-term system planning and power requirements</td>
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ENGINEERING AND DESIGN PROCESS

Engineering and Design Process Overview

<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Topic</th>
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<tbody>
<tr>
<td>11:30</td>
<td>Paul Kranowski</td>
<td>• Overhead &amp; Underground Distribution Design Process &amp; Criteria</td>
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<tr>
<td>11:50</td>
<td>Robin Lyons</td>
<td>• Infrastructure Planning</td>
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<tr>
<td>12:10</td>
<td>Mike Zaffina</td>
<td>• Equipment Design and Construction Standards &amp;</td>
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Utility Exchange Program for Pakistan’s Distribution Companies  
*Distribution System Engineering, Planning & Design*

## Specifications

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>12:30</td>
<td>Lunch</td>
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<tr>
<td>13:30</td>
<td><strong>System Planning Tools</strong></td>
<td>Peter Sampiere</td>
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<td>13:30</td>
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<td>13:30</td>
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<tr>
<td>14:00</td>
<td><strong>Protection &amp; Control</strong></td>
<td>Bob Peligrini</td>
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<td>14:30</td>
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<td>Bryan LaPerle</td>
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<tr>
<td>15:00</td>
<td><strong>Metering &amp; Telecommunications</strong></td>
<td>Guy Cattaruzza</td>
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<td>15:30</td>
<td><strong>Coffee &amp; Tea Break</strong></td>
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<td>15:45</td>
<td><strong>Infrastructure Planning</strong></td>
<td>Vincent Brescia</td>
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<td>16:00</td>
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<tr>
<td>16:15</td>
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<td>Ed DelMonte</td>
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<tr>
<td>16:30</td>
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<td>Christian Bilcheck</td>
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<tr>
<td>16:45</td>
<td><strong>Roundtable Discussion</strong></td>
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<tr>
<td>17:00</td>
<td>Adjourn &amp; Return to Hotel</td>
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### System Planning Tools
- GIS mapping of distribution network

### Protection & Control
- Protection & Control
- SCADA

### Metering & Telecommunications
- Smart Metering
- Electricity Losses / Theft – Control Methods

### Infrastructure Planning
- Live line projects
- Load reduction / shedding
- Transmission System Asset Planning

### Roundtable Discussion to Address Questions & Implementation Issues
### DAY 5 - TUESDAY, SEPTEMBER 18, 2012: UNITED ILLUMINATING COMPANY

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:30</td>
<td>Delegation meets Andrew Palmateer in hotel lobby for transportation to site visits</td>
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<tr>
<td>Morning</td>
<td><strong>Site Visit</strong></td>
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<td>Tour of New Operation complex</td>
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<td>Tour of ESWC, 801 Bridgeport Avenue, Shelton</td>
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<td></td>
<td>Trumbull Substation</td>
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<td></td>
<td>Singer 345KV GIS Substation</td>
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<td></td>
<td>Jim Cole / Joe Flach</td>
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<td></td>
<td>George Becker</td>
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<td></td>
<td>Ralph Anderson</td>
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<tr>
<td>13:00</td>
<td>Lunch</td>
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<tr>
<td>15:00</td>
<td><strong>Roundtable Discussion</strong> to Address Questions &amp; Implementation Issues</td>
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<tr>
<td>17:00</td>
<td>Adjourn &amp; Return to Hotel</td>
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<tr>
<td>Evening</td>
<td>Executive Time ( Potential tour of Yale University )</td>
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### DAY 6 - WEDNESDAY, SEPTEMBER 19, 2012: TRAVEL TO CINCINNATI

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<th>Time</th>
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<tbody>
<tr>
<td>Morning</td>
<td>Travel</td>
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<tr>
<td>Afternoon</td>
<td>Executive Time</td>
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**Lodging:**
Cincinnati Marriott at RiverCenter
10 West RiverCenter Boulevard
Covington, Kentucky 41011
DAY 7 - THURSDAY, SEPTEMBER 20, 2012: DUKE ENERGY

7:30 Delegates meet Andrew Palmateer in Hotel lobby for transportation to Duke Energy

8:00 Welcome, Safety Moment, Duke Overview

8:30 Planning Overview
Share info about the 3 planning functions (transmission planning, distribution planning, R&I planning). What is their scope? How are Projects integrated and prioritized?

8:45 Transmission Planning
Share criteria and NERC requirements. What tools are used? How is load forecasted? How do we coordinate with adjacent systems and generators? How do we coordinate with distribution?

9:45 Break

10:00 Distribution Planning
Share criteria. What tools are used? How is load forecasted? Share “smart grid” overview. What are implications of “smart grid” on planning? What are implications of distributed generation on System planning?

11:00 R&I Planning
Share more detail about maintenance basis and Program development. Give examples of Maintenance basis and how that translates into Budgets. What tools are used to track equipment and system performance?

12:00 Lunch

13:00 Distribution Engineering Overview
Share organization overview and scope to be covered in this presentation.

13:15 GIS
Provide overview of GIS…data fields, processes for entry, updating and quality control. Demo the tool.
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14:15 Break

14:30 Standards
Philosophy of standardization for Distribution. Material specs/design basis. Process used in the development of standards. Share a few examples. Interface to design tools.

15:30 Distribution Design
Overview of the design process. Demo Expert Designer.

16:30 Loadshedding
- Emergency loadshedding
- Demand Side Management
- Communications & Public Relations

17:15 Wrap-up day and adjourn. Return to hotel.

18:00 Evening event hosted by Duke Energy

DAY 8 - FRIDAY, SEPTEMBER 21, 2012: DUKE ENERGY

8:30 Delegation meets Andrew Palmateer in hotel lobby for transportation to site visits

9:00 Tour System Operations Center

10:00 Distribution Management System Demonstration

11:00 Travel to Envision Center and lunch

1:00 Overview of “Smart Grid” and Envision Center Tour

15:00 Roundtable Discussion to Address Questions & Implementation Issues

15:30 Program Conclusion
Delegates will participate in a roundtable discussion to review their understanding of the exchange program topics, discuss interests and challenges, and likely paths moving forward. Program evaluations will also be completed.
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16:00  Adjourn & Return to Hotel
Evening  Executive Time

**DAY 9 - SATURDAY, SEPTEMBER 22, 2012: DEPARTURE**

Morning  Delegates check out of their hotel for transportation to airport