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# ENERGY POLICY PROGRAM

## LIVE LINE TRAINEE ASSESSMENT REPORT

### QESCO AND LESCO

MAY – SEPTEMBER 2015

**November 2015**

*This program is made possible by the support of the American people through the United States Agency for International Development (USAID)*

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MAY – SEPTEMBER 2015

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# ACRONYMS

AEAI	Advanced Engineering Associates International, Inc.
AE	Assistant Engineer
ALM	Assistant Lineman
DISCOs	Distribution Company
EPP	Energy Policy Program
FESCO	Faisalabad Electric Supply Company
LESCO	Lahore Electric Supply Company
LLM	Live Line Maintenance
LM	Lineman
LS	Line Superintendent
M&E	Monitoring and Evaluation
QESCO	Quetta Electric Supply Company
NTDC	National Transmission and Despatch Company
LESCO	Lahore Electric Supply Company
T&P	Tools and Plans
USAID	United States Agency for International Development

# EXECUTIVE SUMMARY

This assessment report summarizes and highlights the responses from Live Line Maintenance (LLM) training participants from QESCO and LESCO collected during the site visit conducted to NTDC Tarbela Training Center on September 18<sup>th</sup>, 2015. Based on participants' feedback, the assessment appreciated the time invested by EPP and DISCOs in the successful completion of LLM training for QESCO and LESCO during Batch II training course. The Energy Policy Program (EPP) trained 20 linemen from QESCO (Quetta Electric Supply Company) and LESCO (Lahore Electric Supply Company) from May 18<sup>th</sup> – September 18<sup>th</sup>, 2015

As a result of the LLM training, each DISCO has got a LLM trained crew to work on live lines with new tools and transportation equipment for high voltage lines. By working on live lines, DISCOs will reduce the number of bottlenecks by avoiding shutdowns for maintenance and repairs. In turn, LLM training will reduce power outages and losses currently affecting the reliable delivery of electricity to the consumers.

In 2015, EPP has trained four DISCOs. At the end of each training, DISCOs LLM crew received Live Line Maintenance Training Certification and new tools and plants for better implementation of the skills learned. The chart below details the location and number of linemen trained during Batch II:

DISCOs	Linemen
Multan Electric Power Company (MEPCO)	10
Sukkur Electric Power Company (SEPCO)	10
Lahore Electric Supply Company (LESCO)	10
Quetta Electric Supply Company (QESCO)	10
<b>Total</b>	<b>40</b>

To monitor the progress of the LLM course for QESCO and LESCO, EPP conducted site visit to Tarbela training center on September 18<sup>th</sup>, 2015 to interview and survey the training participants, principal, and instructors. EPP asked the participants and instructors to detail the challenges they have faced during the training program, and to propose potential solutions for future improvements. The participants highlighted the following recommendations:

- Linemen requested to conduct a similar training outside the country to learn international ways of working on live transmission lines and dead towers.
- NTDC Tarbela requested to provide the latest tools and plants which can used to train the upcoming LLM crews during LLM training, because the present T&P is obsolete.
- NTDC's principal requested USAID to conduct visit with the technical leads during the training period to identify the ongoing challenges and future course of action.

Before the second phase of LLM training provided, EPP conducted an assessment of the curriculum, trainers, and facilities at NTDC Tarbela Training Center. The results of the assessment were shared with the trainers and assessors at the training center to help strengthen the upcoming trainings courses.

# BACKGROUND

Prior to LLM training, lines were often shut down for routine and preventative maintenance which resulted in losses and created bottlenecks in energy delivery and reliability. EPP helped each DISCO develop one LLM crew dedicated to using new hot stick tools, maintenance techniques, and trailers to service live 132kV and 66kV transmission lines. During the LLM course each Disco's crew underwent a 14-week intensive training program at Tarbela Training Center that consisted of:

- 4 week of in-class training focused on health and safety standards
- 10 weeks of extensive field-based training, including supervision, on-the-job practice with hot-stick tools, and bare hand maintenance techniques

During batch II, EPP has trained SEPCO and MEPCO, LESCO and QESCO. In February 2015, EPP started Batch II LLM training at NTDC Tarbela Training Center. Previously, EPP has already trained five DISCOs i.e. FESCO, HESCO, GEPCO, IESCO, and PESCO where due to shipping delays, the hot stick tools and trailers were not delivered which are delivered during the refresher courses currently in process at the DISCOs.

EPP conducted a detailed assessment with QESCO and LESCO's participants to review their experience, capacity gaps, and challenges. The assessment outlines improvements, USAID procedure compliance, refresher course recommendations, and future monitoring and evaluation procedures.

EPP's Monitoring and Evaluation (M&E) team conducted a post-LLM training assessment at NTDC Tarbela Training Center on September 18<sup>th</sup>, 2015 to identify the program's results, challenges and sustainability. The assessment consisted of two steps:

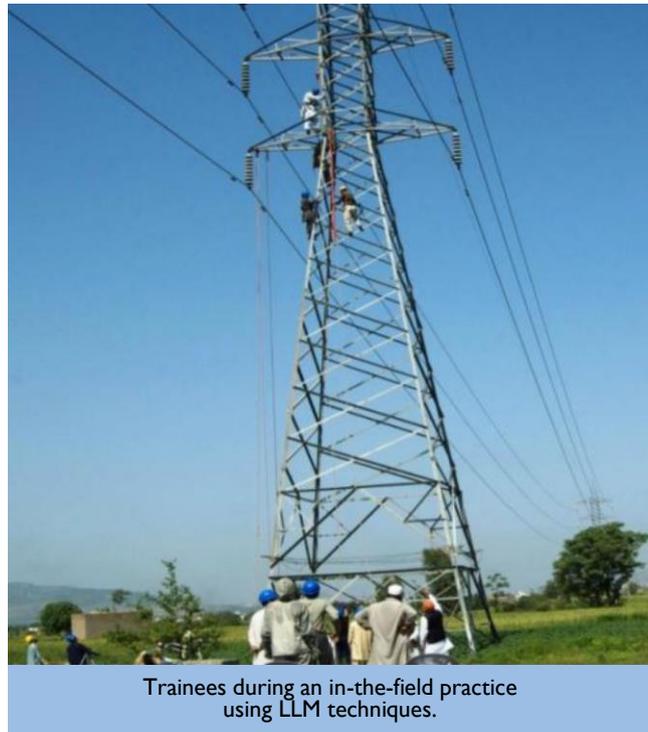
- Feedback forms completed in person with M&E team members
- Sound bites collected from the Linemen based on their individual experience

This two-step assessment process provided the linemen and engineers an opportunity to express their unbiased opinions about the training, and provided EPP important information that will shape future LLM training programs.

## OBJECTIVE

The training sought to:

- Highlight the achieved results
- Identify challenges and recommendations
- Sustainability assessment for future similar trainings
- Identify areas needing improvements



# POST LIVE LINE TRAINING ASSESSMENT

## MONITORING AND EVALUATION VISITS

In conducting the training assessment, EPP's M&E team worked closely with Mr. Sher Ahmed, EPP's LLM Coordinator and Mr. Zafar Ali Khan, EPP's Live Line Demonstrator, and Muhammad Hanif Malhi, Live Line trainer at NTDC Tarbela Training Center. Assessment forms are attached in Annex I– Assessment Feedback Forms and were delivered in both English and Urdu. EPP visited NTDC Tarbela training center on the following dates:

- Quetta Electric Supply Company (10 Linemen) – September 18, 2015
- Lahore Electric Supply Company (10 Linemen) – September 18, 2015

## ASSESSMENT FINDINGS

The findings below are based on the M&E meetings conducted with principal, trainer, linemen, and the Technical leads at NTDC Tarbela Training Center. The table below highlights the issues discussed and the comments received.

Highlighted Issues	General Feedback and Comments
LESCO and QESCO	
Similar Trainings	<ul style="list-style-type: none"><li>• Trainees requested USAID to conduct a similar training outside the country on the live transmission lines and dead towers where they can learn new skills and techniques.</li></ul>
Tools and Plants	<ul style="list-style-type: none"><li>• NTDC Training Center requested USAID to provide tools and plants which they can use in future to train the upcoming LLM crews from other DISCOs.</li><li>• They requested USAID for tools because their current tools and plants are outdated and cannot perform the required functions effectively.</li></ul>
Technical Visits	<ul style="list-style-type: none"><li>• NTDC principal requested USAID to conduct technical visit during the training course to identify the on-going challenges and future course of action.</li></ul>

## GENERAL COMMENTS

Linemen were asked to complete the Live Line Post Training Feedback Form, with EPP's assistance.. Most of the linemen opted to fill out the forms in Urdu, and EPP translated their responses to generate quotes. General comments and findings appear below:

*"I am thankful to USAID for its support and training on Live Line. We always worked on live lines and this training has helped us in learning about the techniques used at the dead towers with expert opinions and practical demonstration by our trainer. Our trainer Mr. Hanif was very helpful throughout the course."*

*"Because of this training we don't have to switch off transmission lines and we can now work on 132 KV lines without any fear"*

*"The training has taught us the most recent and better technique in the live line with bare hand and hot sticks methods. We can now maintain live lines safely and without any difficulty"*

*"After this training we can save our company's revenue, because now we know how to work on dead and normal towers. This will help in the continuous supply of electricity to the consumers"*

Linemen suggested the following related to the training:

*“USAID should continue similar trainings in the future, because live line crews in Pakistan are very limited. Trained crew is very often transferred to other companies and some of them get retirement after few years of training”*

# RECOMMENDATIONS

As a result of EPP's assessment, the following recommendations have been offered to enhance future refresher course:

## SIMILAR TRAININGS

LESCO and QESCO trainees requested USAID to conduct a similar training outside the country on the transmission lines and dead towers where they can learn new skills and techniques.

## TOOLS AND PLANTS

NTDC Training Center requested USAID to provide tools and plants which they can use in training more LLM crews from different DISCOs. They requested USAID for tools because their current tools and plants are outdated and cannot perform the required functions effectively.

# ANNEXES

# ANNEX I: ASSESSMENT FEEDBACK FORMS

**Confidential information redacted**

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