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USAID ENERGY POLICY PROGRAM

POST-TRAINING EVALUATION BEST PRACTICES IN HYDRO OPERATIONS AND MAINTENANCE

OCTOBER 20–31, 2014

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**Best Practices in Hydro Operations and Maintenance (O&M)
Participant Training Program**

Training dates: October 20 – October 31, 2014

Post-Training Evaluation

In this activity, Energy Policy Program (EPP) successfully delivered first of the three training courses in Best Practices in Hydro Operations and Maintenance (O&M) from October 20- October 31, 2014 at Serena hotel in Islamabad. A total of twenty four participants (eight females and sixteen male) from five hydro power plants, including Warsak Power Station, Tarbela Power Station, Ghazi Barotha Hydro Power Project, Chashma & Jinnah Hydrel Power Station, Nandipur Power Plant, WAPDA house Lahore and two university including Air University, NUST.

Best practices in Operations and Maintenance training course were designed to demonstrate participant advanced and up-to-date techniques applied in Operation & Maintenance in developing industrial safety standards, cost control, improved heat rate, improve project management and financing, increase plant efficiency, achieve operational excellence, improve fuel management, enhance protection, instrumentation, and controls for GENCOs I, II, and III.

Number of Participants trained: 24 participants (Sixteen males and 8 females)

In the end of the training course, post-training evaluation was conducted from 23 out of 24 participants, as one of the participants was absent during the post-test and post training evaluations. They were given an eight questions post-training evaluation form to explain their valuable experienced. Following are statistics, summaries and quotes of the participants' responses.

Please tick in appropriate box: 5 outstanding, 4 very good, 3 satisfactory, 2 needs improvement, 1 did not meet expectations

I. Program Rating	<i>Did not meet expectations</i>	<i>Needs improvement</i>	<i>satisfactory</i>	<i>Very good</i>	<i>outstanding</i>
Relevance to your organization's work area	0	2	4	17	0
Structure of the program	0	1	9	9	4
Topics covered in the program	0	4	6	12	1
Quality of class room interactions	0	1	8	11	3
Quality of training and reading materials	0	3	5	14	1
Appropriateness of reading materials	0	2	7	13	1
Quality of Speakers/Trainers	0	2	7	12	2
II. Program Content and Trainers	<i>Did not meet</i>	<i>Needs improvement</i>	<i>satisfactory</i>	<i>Very good</i>	<i>outstanding</i>

	<i>expectations</i>				
Training Content & Relevance	0	3	6	13	1
Trainer/Speaker Effectiveness	0	1	5	16	1

According to the rounded responses of all participants from the above stated table:

1. 74% of the participants rated “Relevance to your organization’s work area” as very good whereas, 17 % of the participants marked it as Satisfactory and 8% people felt then need of improvements.
2. 39% of the participants found “Structure of the program” Very good, while 17% participant rated it Outstanding and 39% of the participants felt it was a Satisfactory
3. 52% participants found the category “Topics covered in the program” Very good, 26% of them found it’s satisfactory and 17% felt the need of improvement.
4. 48% found “Quality of class room interactions” very good, 13% found it outstanding whereas 34% said it was Satisfactory whereas 4% felt the need of improvement.
5. 61% of the participants felt “Quality of training and reading materials” was Very good, 22% rated it Satisfactory and 13% felt the need of improvement
6. 56% participants rated “Appropriateness of reading materials” as Very good, while 30% participants rated it as satisfactory and 8% felt the need of improvement.
7. 52% participants rated “Quality of Speakers/Trainers” as Very good, while 4% rated it outstanding and other 30% said it was satisfactory
8. 56% participants rated the “Training Content & Relevance” as very good, 26% rated it as satisfactory and 13% felt the need of improvement.
9. 70% of the participants found “Trainer/Speaker Effectiveness” Very good, and 22% participants found it satisfactory and 4% felt the need of improvement.

Please share any other observation or comments regarding the trainer/training program/logistics:

Participants were asked to share their observations and comment regarding the trainer, training and logistics, all of them have shared their observations. Almost all the participants found the training very beneficial for them while mentioning:

“All the trainers were very competitive and experienced in their relative fields. Training program and all the other facilities provided by EPP were excellent”

“I found the training course very knowledgeable and no doubt that the training will prove to be beneficial to us regarding the modern O&M techniques”

“Training content was more as compared to the training course duration”

“Training content needs improvement as it covers more of the management part of the hydro power plant. Moreover, there should be industrial visits for better practical learning of the learned techniques”

Participants appreciated the effort of trainers while stating:

“The training program was very good and the trainers were excellent, but some of them had interaction issues due to their native accents. The communication was good but not understandable at times”

Before you received this training, how would you describe your knowledge of operation and maintenance systems and procedures required for Hydro power?

Keeping in view all the responses it showed that before this training most of the participants had limited knowledge and after the training all of them have developed significantly, participants said:

“Before this training, our knowledge about the O&M practices was very limited but after receiving training from the international trainers, our O&M skills have improved”

“I have got so many trainings from WAPDA, but this Operations & Maintenance training was more comprehensive”

“I work at Mangla Power Station, where I have experienced confusion performing the O&M activities which are now cleared with all the lessons learned”

“Most of the procedures were of routine use of practices, but now we can make a systematic approach towards Operations and maintenance practically”

What specific skill did you gain as a result of this training?

Participants were asked to address the specific skills that they have gained during this training; and they wrote:

“I gained more insight about international standards, asset management, optimal operation techniques, and HPP structures”

“I got to know about the modern techniques which are implemented internationally that I did not know before this training. Moreover, got a chance to work closely for the course of the training with fellow engineers from WAPDA and Hydro Power Plants”

“I learned to deal with fault diagnostics, equipment testing procedures, assessment models and lean maintenance techniques. Trainers have explained this entire topic in detail which would help us in performing these operations”

How will your organization benefit from Hydro Operation and Maintenance (O&M) training in both the short term and long term?

The training strategy was based on organizational improvements so that the staff and the organization can achieve their set targets, objectives and both personal and corporate goals. Participants were asked to express how their organization will be benefited from Hydro Operation and Maintenance training in short and long term, they shared:

“Whatever I have gained from this training, I will forward the manuals and presentations to other fellow colleagues at Hydro power plant”

“Revision of existing of O&M tools and valuable knowledge will increase the efficiency of the power plants thus increasing the operations and maintenance procedures”

“Our organizations will definitely get benefit from the training content taught by experienced trainers because these procedures and techniques will help us improve the planning and management at the plants”

“I belong from an educational institution so this O&M training will help us to deliver more practical knowledge base on the training content taught during the training course. It will also help in overcoming the prevailing problems of Hydro Power Plant in our country”

What was missing in the Hydro Operation and Maintenance Training?

Participants shared their respective views and stated:

“Training duration was short and training content required more time for better understanding”

“Some of the issues regarding the switchyard equipment, design and contractual details, details on SCADA and protection required more details”

“Training should be a mix of theoretical and practical learning followed by industrial trips”

“Materials were not given on the major overhauling of the turbine. Techniques of reassembling the turbines, running the statically balance, turbine shifts and alignments, and how to center the turbine unit”

Do you have any suggestions for how we could improve future Operation and Maintenance trainings?

All the participants have different views about how to improve future Hydro Operation and Maintenance trainings, most of the participants have complained about the time duration they thought the time period for such technical training could have been increased, as they mentioned:

“Trainers should be made familiar to the techniques and technologies used at WAPDA prior to the training course for relevant information in the presentations. This will improve interactions between the trainees and trainers proving to be more beneficial”

“Provide the presentations and other training material in soft copy as well”

“Training duration should be increased keeping in view the lengthy training content which needs time for better comprehension”

“Similar training should be organized for maximum number of engineers from WAPDA to improve the skill set in achieving the organizational goals”

“EPP should organize these types of training on a regular basis”

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