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USAID ENERGY POLICY PROGRAM

POST-TRAINING EVALUATION BEST PRACTICES IN HYDRO OPERATIONS AND MAINTENANCE

NOVEMBER 10–21, 2014

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Best Practices in Hydro Operations and Maintenance (O&M)

Participant Training Program

Training dates: November 10 – November 21, 2014

Post-Training Evaluation

In this activity, Energy Policy Program (EPP) successfully delivered second of the three training courses in Best Practices in Hydro Operations and Maintenance (O&M) from November 10- November 21, 2014 at Serena hotel in Islamabad. A total of twenty three participants (twenty males and three female) from five hydro power plants, including Warsak Power Station, Tarbela Power Station, Ghazi Barotha Hydro Power Project, Chashma & Jinnah Hydel Power Station, small Hydel power station, WAPDA house Lahore and one university i.e. CASE Islamabad.

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: 23 participants (twenty males and three female)

At the end of the training course, post-training evaluation was conducted from 23 participants. 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	8	11	2
Structure of the program	0	1	7	13	2
Topics covered in the program	0	2	7	13	1
Quality of class room interactions	1	2	7	8	5
Quality of training and reading materials	0	2	6	14	1
Appropriateness of reading materials	0	2	6	15	0
Quality of Speakers/Trainers	0	6	9	8	0
II. Program Content and Trainers	<i>Did not meet expectation</i>	<i>Needs improvement</i>	<i>satisfactory</i>	<i>Very good</i>	<i>outstanding</i>

Training Content & Relevance	0	3	6	13	1
Trainer/Speaker Effectiveness	0	4	11	7	1

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

1. 48% of the participants rated “Relevance to your organization’s work area” as very good and 8% rated it as an outstanding effort. Whereas, 35 % of the participants marked it as Satisfactory and 8% people felt then need of improvements.
2. 56% of the participants found “Structure of the program” Very good, 8% found the structure was outstanding; while 30% participants felt it was a Satisfactory and 4% still felt the need of improvement.
3. 56% participants found the category “Topics covered in the program” Very good, 30% found it’s satisfactory, 4% felt it was outstanding and 17% felt the need of improvement.
4. 34% found “Quality of class room interactions” very good, 21% found it outstanding whereas 30% said it was Satisfactory whereas 8% felt the need of improvement.
5. 61% of the participants felt “Quality of training and reading materials” was very good, 8% found it outstanding, 26% rated it Satisfactory and 8% felt the need of improvement
6. 21% participants rated “Appropriateness of reading materials” as Very good, while 65% participants rated it as satisfactory and 8% felt the need of improvement.
7. 35% participants rated “Quality of Speakers/Trainers” as Very good, while 39% rated it as satisfactory and 8% felt the need of improvement.
8. 56% participants rated the “Training Content & Relevance” as very good, 26% rated it as satisfactory and 13% felt the need of improvement and 8% felt it was outstanding.
9. 30% of the participants found “Trainer/Speaker Effectiveness” Very good, 4% rated it as outstanding, 48% participants found it satisfactory and 17% 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:

“The training was fantastic but I think trainers should be from some English country because there was a communication gap. Though the trainers were exceptionally competent but still have issues communicating in English”

“Training manual should include more real life examples for better understanding of the real issues happening at the plants. Trainer’s communication skills needs improvement”

“The training was highly beneficial as it covered almost all the area of hydro power plant right from design, planning, feasibility etc. up to commissioning operations and proper maintenance”

“Training content was good but important parts of the plant like PPEs, first aid, safety equipment should be included as well. Moreover, some chapters related to firefighting should also be included for awareness and safety measurements”

“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”

“Training content was really lengthy and requires more time. Training should be for at least a month”

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 significant skills and knowledge about the operation and maintenance techniques, as the participants said:

“Before this training, I was unaware of the modern developments in the field of operation and maintenance techniques at Hydel plants. All the training content was skillfully demonstrated and explained during the O&M training”

“Before the O&M training we lacked knowledge about the international standards being followed at the Hydro plants. We had very limited knowledge before enrolling into this training program but after receiving the training from the international trainers, our O&M skills have significantly improved”

“As an engineering student, I have known all the theoretical knowledge but had a very little idea of the practical workings at the plant. This training has helped me in understanding the plant in depth along with the operation and maintenance practices and techniques”

“Before the training, our knowledge about O&M practices was restricted to our plants”

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, maintenance management, and effective spare parts management”

“Details of corrective/preventive maintenance systems, protection and control systems, project feasibility were discussed in great depth and gave a good insight about their workings at the plant”

“Learned a lot about design, planning, feasibility, environmental impact assessment, asset management, control protection systems of the power plants”

“Our technical knowledge regarding the technical details about the turbines, SCADA and other electrical system has improved a lot significantly”

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:

“I am confident that I will be able to contribute considerably to benefit my organization due to the skills I have gained from this training”

“Our organization train youth which will promote higher managerial level and decision making ranks; so this training might add in towards the positivity of the O&M operations”

“Implementation of the learned skills and attitudes will be beneficial for the organization in achieving maximum output and performance at the highest level of efficiency for better organizational long term performance”

“From now onwards we will be able to identify the cause of the faults by following the latest techniques and in the long term implementation of the skills learned will be beneficial for our organization”

“Surely, this training will have huge impact on Hydro plants. Skills gained will be utilized to achieve organizational goals much more efficiently”

“In short-term I will try to implement all the skills and techniques I gained during this training and in the long-term impact I will train my fellow colleagues and subordinates for better future performance”

What was missing in the Hydro Operation and Maintenance Training?

Participants shared their respective views and stated:

“Topics related to firefighting should also be included for awareness and safety requirements”

“Topics e.g. financial analysis, economic analysis, sensitivity analysis, profit and loss statement were missing from the training content”

“The quality of trainer’s English language was poor and a major reason of communication barrier throughout the training”

“Training should include more industrial trips. It would help all the participants to understand the practical aspects of the training”

“Training content was good but important parts of the plant like PPEs (Personal Protection Equipment), first aid, safety equipment should be included as well. Moreover, some chapters related to firefighting should also be included for awareness and safety requirements”

“Videos, they give a good insight and knowledge about the topics. It helps enhance the understanding of students like me”

Do you have any suggestions for EPP, how we could improve future operation and maintenance trainings?

All the participants have different views about how to improve future 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, they mentioned:

“Fresh graduate should be given a chance to learn new best practices as it will be helpful in their future careers”

“Course duration should be extended from two-weeks, trainers should have some idea of Pakistani power stations. More field visits should be arranged”

“Trainers should be made familiar to the techniques and technologies used at power plants in Pakistan 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”

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

“EPP should also arrange visits to the plants and different working environment so, that trainees can see actually what are the working procedures according to the techniques learned”

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