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# USAID ENERGY POLICY PROGRAM

## VISIT REPORT

VERIFICATION OF PROJECT WORKS COMPLETED  
UP TO JULY 21, 2012 AT TARBELA HYDRO POWER PLANT



**July 2012**

*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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### VERIFICATION OF PROJECT WORKS COMPLETED UP TO JULY 21, 2012 AT TARBELA HYDRO POWER PLANT

Contract No: AID-EPP-I-00-03-00004

Order No: AID-391-TO-12-00002

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#### **DISCLAIMER**

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## 1. PURPOSE of VISIT

A visit to Tarbela Hydro Power Plant was conducted on July 21, 2012 by AEAI engineers to monitor progress of the Repair and Rehabilitation of Tarbela Power Plant. The purpose of the visit was to (1) expedite the completion of rehabilitation works under the USAID funding; (2) inspect the recently installed equipment; (3) verify WAPDA reimbursement claims under FARA.

## STATUS of WORKS in PROGRESS

**On July 21, 2012 Tarbela Power Station's total generation was 2800 MW at a reservoir level of 1455 ft. After the installation of new Class F winding at Unit # 3, it was generating 150 MW at this reservoir level and is capable of generating 195 MW at full reservoir level; hence there is another capacity gain of 10MW. Therefore as of today, 128 MW has been added under the FARA rehabilitation program.**

Following is the brief summary of the progress:

1. Unit # 4 winding was replaced with new class F winding in May 2011, and the unit is capable of generating additional 108 MW since last summer.
2. Unit # 1 winding was replaced with new Class F winding in Feb 2012, and the unit is capable of generating additional 10 MW in this summer.
3. Unit # 3 installation, testing and commissioning completed on May 25, 2012 under the supervision of Manufacturer's representative. At present the unit was operating at 150 MW at a reservoir level of 1455 feet. All technical parameters and winding temperatures were within technical limits. The unit # 3 is capable of generating additional 10 MW, thus total gain achieved with replacement of three windings is 128 MW. WAPDA/Tarbela 10% invoice for successful installation of Unit 3 winding was verified and US \$ 370,000 was reimbursed to WAPDA on July 20, 2012. Furthermore, WAPDA is finalizing the purchase order for the procurement of one third winding spares from Marubeni Corporation, Japan.
4. New seals for Relief and Bypass Valves Units 1 – 10 arrived at Tarbela in Dec 2011. Replacement of seals completed on all units and WAPDA/Tarbela reimbursement request for 10% remaining payment of \$50,000 was certified by AEAI. WAPDA/Tarbela received this amount in their account on May 21, 2012.
5. **New Station Drainage Pumps and Unwatering Pumps arrived at Tarbela and are installed in the Drainage and Unwatering Sump.** Tank dewatering pump of smaller size was not purchased by WAPDA as per the quantity mentioned in the FARA (only one pump is required in the power plant whereas ten pumps are mentioned in the specifications). The existing pump is performing satisfactory since its commissioning and its usage is very minimal. Therefore WAPDA has recommended that the replacement of the pump is not required. WAPDA was requested to submit detailed justification for this modification.
6. The manufacturing of Digital Governors completed at GE, USA. Four WAPDA engineers inspected the Governors at GE Works in July 2012 and after satisfactory inspection equipment was released for shipment. Depending on unit shut down approval, the installation of new Governors to commence during the low flow season in Nov – Dec 2012 and is scheduled to

complete by June 2013 on all ten units. WAPDA was requested to submit time extension request with detailed justifications for delays.

7. New SCADA system is under manufacturing with ABB and shipment is scheduled in Oct 2012. The installation of SCADA system will require another three months. WAPDA was requested to submit time extension request with detailed justifications for delays.
8. Third and last batch of seven WAPDA engineers from Tarbela have completed training in Switzerland. Total twenty WAPDA engineers have completed training as per FARA. WAPDA invoice for remaining 50% payment was certified by AEAI and payment was received by WAPDA on May 21, 2012

Some photographs from the visit are in AEAI Share folder.

Muhammad Salim Paracha

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USAID Energy Policy Project, Islamabad

## One of the Banners pasted at Tarbela Power Plant



## Inspection of drainage and unwatering pumps



## Discussion with Chief Engineer Tarbela FARA progress and issues



## Verification in Control Room of MW gains and temperatures for Unit-3 winding



### Unit 3 governor readings at the generator flow



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