नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उपक्रम)
NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(A GOVT. OF INDIA ENTERPRISE)
ISO 9001, 14001 & OHSAS 18001
Office of the Executive Director (Corporate Planning)

No. NEEPCO/ED (CP)/Env.&RR Wing/E&F-46/2013-14/ 618 Dated 18/02/2014

To

The Director (Impact Assessment)
River Valley Projects,
Ministry of Environment & Forests,
Paryavaran Bhawan,
New Delhi.

Received in C.R. Section
Ministry of Environment & Forests
Govt. of India
11 2003 New

Sub: Re-submission of Form-I along with TOR for obtaining prior Environmental Clearance for Mawphu H.E. Project (75 MW), Stage-II, Meghalaya.

Sir,

With reference to above, this is to inform that the North Eastern Electric Power Corporation Ltd. (NEEPCO), a Schedule 'A' Government of India Enterprise under the Ministry of Power was set up on 2nd April 1976 to plan, investigate, design, construct, generate, operate and maintain power stations in the Country. At present, NEEPCO has installed capacity of 1130 MW, which is 49% of total installed capacity(IC) of N.E. Region. Moreover, 5(five) projects of NEEPCO with aggregate IC of 917MW are under various stages of construction.

The State Government of Meghalaya has allotted Mawphu H.E. Project, Stage-II in Umiew River Basin to NEEPCO for execution through signing of Memorandum of Agreement (MOA) in April, 2013. Accordingly, NEEPCO has initiated taking up detail survey and investigation in the project area for preparation of DPR and subsequent execution.

It may be mentioned here that, during 65th meeting of EAC for River Valley and Hydroelectric Projects held on 22nd to 23rd March'2013, it was advised to alter the project layout so that the clear riverine free flow between TWL of Umduna HEP and FRL of Mawphu HEP becomes at least around 1 km.

Accordingly, revised PFR is prepared by shifting Dam axis about 3.17 km downstream of Umduna HEP Power House location. The installed capacity of the project as per the revised PFR is 75 MW.

In view of the above, the duly filled up Form-I along with the Terms of Reference (TOR) for EIA Study including a copy of the revised PFR is enclosed in both hard and soft copy for obtaining prior environmental clearance for the said project. We are enclosing a copy of the letter submitted to the DFO in respect of diversion of forest land.

We request to kindly accord approval to the TOR proposed for carrying out EIA study.

Encl: 1) Duly filled up Form-I along with TOR.
2) Hard and Soft Copy in CD of PFR.
3) Copy of the letter submitted to the DFO

Yours faithfully,

(R. C Sarmah)
i/c Executive Director (CP)

Minutes of the 65th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects constituted under the provisions of EIA Notification 2006, held on 22nd -23rd March, 2013 at SCOPE Complex, New Delhi.

Agenda Item No. 2.7 Mawphu HEP (85 MW) Project in East Khasi Hills District of Meghalaya by M/s NEEPCO Ltd – for Consideration TOR.

The Mawphu Hydro Electric Project-Stage II (85 MW) is proposed a location in East Khasi Hills district of Meghalaya state and envisages utilization of the water of the river Umiew for power development on a run-of-river type scheme, harnessing a gross head of about 330.0 m. The project is proposed to be developed by NEEPCO. The proposed dam is located at a river bed level of 499.50 m, 1.25 km downstream of the Surface Power House of proposed Mawphu HEP (85 MW). The diversion site is located at Latitude 25°19'27"N, Longitude 91°38'08"E.

The nearest villages to the dam site are Mawphu village (on the Left Bank) and Thieddieng village (on the Right Bank). The project site is approachable from Shillong by road (via Shillong–Mawsynram State Highway) for a distance of 58.00 km up to Mawsynram and further 11.00 km upto Thieddieng village. From Thieddieng village both dam and power house sites are approachable by foot track. The nearest rail head and Airport is located at Guwahati (100 km from Shillong).

The Mawphu HE Project (Stage-II) envisages construction of a 41.55 m high concrete gravity dam with 150 m length at top, across the River Umiew to provide a live storage of 111.70 ham with FRL at El 540.0 m and MDDL at El 525.00 m. The proposed dam have submergence area of 10.625 ha at FRL and a live storage of 1.12 MCM between FRL and MDDL.

A 4.07 km long and 3.25 m dia head race tunnel terminating in a surge shaft A 75m high, 8.0 m dia surge shaft, a 960 m long, 3.0 m dia penstock, a surface power house having an installation of 2 Francis Turbine driven generating unit of 42.5 MW each operating under a rated head of 300 m and 45 m long tail race channel to carry the power house releases back to the river are proposed.

The Umiew river origintes at EL 1800 m from the south-western slopes of East Khasi Hills District of the Great Eastern Himalayas. The river after traversing the Sohra diversion near Mawlongshella outflows to Bangladesh. The river Umiew drains a catchment area of about 300.0 sq km at the proposed dam site. The entire catchment is rain fed. The water availability for the project i.e. the dependable flows for both 90% and 50% dependable years have been assessed based on the water availability study carried out in the DPR of Greater Shillong Water Supply Scheme on catchment area proportionate basis for a stretch of 27 years i.e. from 1979 to 2005. The same series was used in the DPR of Mawphu HEP (90MW). The inflow series thus derived is utilized in the Power Potential Studies. Design flood taken as 4370 cumec is actually PMF and not 1 is 100 year flood as stated in the report. Sediment data should be collected to find new zero elevation and life of reservoir.

The proposed Mawphu H. E. Scheme will utilize tail water discharge of Umduna HEP including runoff from the intervening catchment. The available inflow data was analysed on 10 daily basis. The inflow of the 90% dependable year has been utilised for Computing the power benefits. An installation of 85 MW comprising 2 generating units of 42.5 MW each has been proposed. The energy availability from the project in a 90% dependable year is 360.07 GWhr.

The cost of the Project is estimated at Rs 382.95 crores at March 2010 price level. The project is proposed to be completed in 4.5 years period in all respect.

In course of the presentation, it was informed by the project developer that two projects are proposed upstream of the Mawphu HEP. These are Umjaut HEP (69 MW) and Umduna HEP (90 MW). The free flow stretch between TWL of Umduna HEP and FRL of Mawphu HEP is only 140 m. **In view of this, the EAC pointed out the inadequacy of free flow stretch and asked the project developer to alter the project layout so that the clear riverine free flow between TWL of Umduna HEP and FRL of Mawphu HEP becomes at least around 1 km.**

The average rainfall considered for water availability studies is 3575 mm. The EAC was of the opinion that annual rainfall considered is on the higher side, as annual rainfall in the nearby meteorological stations is recorded lower than 3000 mm. **The EAC thus, advised the project developer to review the figure of annual rainfall and adopt realistic values in design calculations.**

It was observed by the EAC that water availability for the project has been assessed based on the water availability study carried out for the dam project meant for supplying water to Greater Shillong on catchment area proportionate basis. **The project developer was asked to give a proper justification for using this discharge series for the Mawphu HEP. EAC also asked to review the discharge series of upstream project (Umduna HEP) to derive the series for Mawphu HEP, as this will give discharge data with greater accuracy.**

The Developer was informed that the Environmental Flows to be considered shall be 30% of inflows in monsoon season, 20% of average discharge in lean season and 25% of average discharge in non-monsoon non-lean season.

The land requirement for the project is 100 ha, which includes 89.375 ha of private land and 10.625 ha of forest land. The project developer was asked to submit a copy of the application of stage-I Forestry Clearance to the MOEF.

The EAC thus recommended that the project developer submits the PFR incorporating the above suggestions and observations. Form-I and TOR also have to be revised in line with the revised PFR.