MINUTES

OF

9TH MEETING OF THE
NEPAL-INDIA JOINT TEAM OF EXPERTS
ON
SAPTA KOSI HIGH DAM MULTIPURPOSE PROJECT
AND
SUN KOSI STORAGE-CUM-DIVERSION SCHEME

AUGUST 1-2, 2010
KATHMANDU
MINUTES OF THE 9TH MEETING OF THE NEPAL-INDIA JOINT TEAM OF EXPERTS ON SAPTA KO SI HIGH DAM MULTIPURPOSE PROJECT AND SUN KO SI STORAGE-CUM-DIVERSION SCHEME HELD ON 1ST & 2ND AUGUST, 2010 AT KATHMANDU, NEPAL

The Ninth meeting of the Joint Team of Experts (JTE) between Nepal and India was held on 1st & 2nd August, 2010 at Kathmandu, Nepal. The Indian Team was led by Shri R.C. Jha, Member (RM), Central Water Commission (CWC) and Ex-Officio Additional Secretary to Government of India and the Nepalese Team was led by Mr Sunil B. Malla, Director General, Department of Electricity Development, Government of Nepal. The composition of the Indian and Nepalese Teams is at Annex-1.

Mr Sunil B Malla, the leader of the Nepalese Team, extended a warm welcome to the Indian Team and wished that their stay at Kathmandu would be pleasant and comfortable. He stressed that the DPR could not be completed in stipulated time for certain reasons beyond the control of JPO-SKSKI. He also stated that in order to complete the investigation work in time, the Government of Nepal has now provided necessary security arrangements at the project area by establishing security posts and mobile security, as agreed upon during fifth JCWR meeting and second JSTC meeting. He emphasized that scope of works, time frame and resources required for the timely completion of DPR should be reviewed based on realistic assessment of quantum of remaining works and available human resources. He also stressed the need for frequent interactions to improve communication between two sides.

Shri R.C. Jha, the leader of the Indian Team thanked the Nepalese side for their warm hospitality. He expressed satisfaction over the security arrangements made by the Government of Nepal recently at Sapta Kosi High Dam site. He also expressed hope that the Government of Nepal would continue to make all the necessary security arrangements to ensure that the field works at Project site are completed with adequate and effective security for undertaking the investigation. He stressed the need for dissemination of the Project benefits to Nepal from the Sapta Kosi High Dam Project and the Sun Kosi Storage-cum-Diversion Scheme.
Subsequently, detailed discussions were held on each of the agenda items (Annex-2). The discussions held and decisions taken are given below.

9.1 Progress of Works
9.1.1 Topographical Survey
Project Managers informed JTE that Small Scale Maps have been prepared by the Survey Department, Nepal and provided to the Project authority. The Large Scale Maps for Sapta Kosi High Dam and Sun Kosi Dam sites have also been prepared and finalized. The Topographical Survey for Sun Kosi-Kamala diversion tunnel could not be taken up in want of decision regarding final location of Sun Kosi Dam as well as tunnel alignment. Currently, preparation of Large scale maps of power house at diversion tunnel end at Khadikhop is under progress.

JTE noted the progress of work for the preparation of Large Scale and Small Scale Maps carried out by the Survey Department, Nepal. JTE directed JPO-SKSKI to arrange a field visit of Expert Team consisting of Geologists and Designers at the earliest, for finalization of location of Sun Kosi Dam and alignment of Sun Kosi-Kamala diversion tunnel so that topographical survey of the diversion tunnel could be taken up by the Survey Department.

The representative of Department of Survey, Nepal indicated during the meeting that it would require at least one year to complete the remaining works. He also requested for the revision in fixed cost for remainder survey works.

9.1.2 Geo-technical Investigations
9.1.2.1 Diamond Core Drilling at site of Sapta Kosi High Dam Multipurpose Project
JTE approved forfeiture of security deposit of M/s Pratay Nivesh P. Ltd., Asansol for Package-A (Dam), M/s RITES Ltd, Gurgaon for Package-E (Spillway) and M/s Mining Associates P. Ltd., Asansol for Package-F (Power house) for the diamond core drilling at Sapta Kosi Project. The Project Managers informed the JTE that the contractors for Package A & F have given notice for arbitration and nominated arbitrator from their side and requested JPO-SKSKI to nominate an
arbitrator. JPO-SKSKI has asked the contractors to inform the specific nature of dispute and the clause of contract under which the claim, if any, falls. As the private agencies are still not confident, the JTE directed the JPO-SKSKI to start negotiation with the Nepal Electricity Authority (NEA) (an undertaking of GON) to complete remaining drilling work.

9.1.2.2 Exploratory Drift at Underground Power House of Sapta Kosi Dam
The Project Managers informed JTE that the Geologists from Geological Survey of India (GSI) recently reiterated the necessity of exploratory drift of 600 m length at Sapta Kosi Underground Power House site at DPR stage. For this, a minimum period of 18 months is required. JTE noted the recommendations of GSI and directed JPO-SKSKI for retendering of drift work after completion of detailed geological mapping at the Project site.

9.1.2.3 Geological Logging and Mapping
Project Managers informed JTE that Geological Logging of already drilled holes at Kuruleghat and Sorungtar Dam sites, Sapta Kosi Dam, Power House and Spillway sites have been completed. The geological mapping of a portion of left bank of Sapta Kosi High Dam site has been completed during the recent field visit of GSI team in June, 2010.

JTE noted that geological mapping of the left bank of Sapta Kosi dam could be completed under security cover. JTE further noted that due to restricted movement and limited working hours due to security concerns, massive landslide and inclement weather conditions, the mapping at right bank of dam site could not be undertaken. JTE directed JPO-SKSKI to ensure completion of the remaining geological mapping of Sisauli Barrage, Kamala Dam and appurtenant works and all three alternative sites of Sun Kosi dam including right bank of Sapta Kosi dam, in the subsequent visits of GSI officers, at the earliest.
9.1.3 Hydrological Studies
9.1.3.1 Hydrological Observations
Project Managers informed JTE that daily gauge observation at Sapta Kosi High Dam site and discharge observation at Chatara site, on a weekly basis, have been resumed from 4th April, 2010. The Hydrological Observations at other sites, namely, Kamala Dam site at Timnai, Kurule Dam site, Sorungtar Dam site (both on River Sun Kosi) and Uttarayani Barrage site at River Kamala are continuing undisrupted.

9.1.3.2 Water Availability Studies
JTE noted that a meeting between Hydrologist from CWC and Department of Hydrology and Meteorology (DHM), Nepal was held and Water Availability studies in respect of Sapta Kosi Dam Project was finalized. It was conveyed that annual average yield at Sapta Kosi High Dam site is estimated by CWC as 50.20 Billion Cubic Meter (BCM). JTE also noted that JPO-SKSKI has collected and provided the withdrawal data from Kamala (Bandipur) Barrage to CWC, New Delhi for carrying out the Water Availability studies of Kamala Dam Project.

9.1.3.2 Design Flood Studies
It was conveyed by Nepalese side that requisite discharge data for Design Flood studies for Sapta Kosi, Sun Kosi and Kamala rivers are not available with DHM, Nepal. India Meteorological Department (IMD), GOI has agreed to carry out Design Storm Studies on payment basis. JTE directed JPO-SKSKI to entrust the work of Design Storm Studies to IMD and arrange meeting of CWC and DHM officers to decide the methodology to carry out the Design Flood Studies, considering the results of above study and data available with DHM, if any.

9.1.3.3 Flood benefit Studies
JTE directed JPO-SKSKI to collect flood damage data from the Government of Bihar and entrust the flood benefit studies to CWC. As flood damage data is not available on Nepalese side to the required extent, JTE decided, that in absence of such data, flood control benefits on Nepalese side be estimated on the basis of analysis and judgment of that on Bihar side and data as well as information that will be gathered in the course of Environmental studies.
9.1.3.4 Glacier Lake Outburst Flood (GLOF) Studies
JTE noted that requisite data and information for GLOF studies have been provided to CWC. JTE directed the Project Managers to expedite the work.

9.1.4 Seismological Studies
JTE noted that all the seismological observatories have been commissioned and the collection of seismological data have commenced at all the Seismological Observatories and are being sent to Central Water and Power Research Station (CWPRS), Pune for seismological studies. The Indian side requested that Government of Nepal should take over seismological observatories in order to provide necessary security to such observatories and share the work load of JPO-SKSKI. The Nepalese side suggested that the handing/taking over may be carried out towards the end of investigation. However, the Indian side requested that till such time the observatories are handed over, arrangements for security and disbursement of wages paid by JPO-SKSKI may be made by the Nepalese side.

9.1.5 Construction Material Survey
JPO-SKSKI informed JTE that the Final report on clay samples collected by Central Soil & Material Research Station (CSMRS), New Delhi for rock fill dam has been submitted to them. CSMRS experts during their field visit in July 2005 had also identified the borrow areas for rock fill materials and coarse and fine aggregates for concrete. JTE noted the progress of work regarding the construction material survey and directed the Project Managers to arrange another visit of CSMRS experts for collection of samples for rock fill material and coarse and fine aggregates etc, at the earliest.

9.1.6 EIA Studies
9.1.6.1 EIA Studies- Nepalese Territory
JTE discussed in detail the programme of EIA studies proposed to be carried out and the time required. The Nepalese side informed that minimum time required to complete the EIA studies for a large project as per the law of land will be two and half years. JTE directed to carry out Environmental studies in such a manner
land and conservation areas with respect to various elevations as required to finalise the project parameters are made available to the concerned offices within 9 months of commencement of the Environmental Studies, while continuing remaining works.

9.1.6.2 EIA Studies- Indian Territory
JTE noted that the EIA study in Indian Territory for command area would be taken up after Micro Planning of Irrigation studies are completed.

9.1.7 Power System Studies
The Nepalese side informed that NEA will soon be submitting a revised proposal for undertaking Power System Survey and Power Evacuation Studies in respect of Nepalese territory. JTE directed the Project Managers to send the proposal of NEA to Central Electricity Authority (CEA), GOI and if required, further meeting may be arranged between NEA and CEA officials to firm up the studies.

9.1.8 Communication Survey
JTE was informed that a period of ten months would be required for completing the communication surveys based upon which the unit size of power generation would be decided by CEA and NEA. JPO-SKSKI has finalised the scope of work and sent the document of Expression of Interest (EOI) and Request for Proposal (RFP) to the members of TEC for confirmation. JTE directed the Project Managers to expedite further tendering process.

9.1.9 Irrigation Studies and Command Area Survey
Indian Territory
The Project Managers informed that field works for Irrigation studies in Indian territory by M/s WAPCOS are almost complete. M/s WAPCOS had requested for extension of time till 31 December, 2010 and the agency has been granted provisional extension of time up to 17th August, 2010 to complete the work. JTE noted the progress.
Nepalese Territory

JTE took note of the fact that the contract of Joint Venture M/S GEOCE-AUTO CARTO and EAST Consultants for Irrigation studies in Nepalese territory has been terminated as the agency had not applied for extension of time within the time stipulated in the contract agreement; and approved the decision of JPO-SKSKI. JTE directed JPO-SKSKI to initiate the process for procuring consultancy services for remaining works of irrigation studies in the Nepalese territory.

9.1.10 Navigational Studies

JTE noted that M/s RITES, the consultants for the navigational studies has submitted its reports. In view of the ongoing studies on Inland navigation along the Kosi river, it was decided that the report prepared so far would be made available for the concerned agencies in Nepal for the detailed review before using them as inputs in DPR.

9.2 Revision of Cost Estimate of DPR preparation

Revision of cost for completing of balance works will be necessitated due to non completion of works contracted by the JPO-SKSKI to agencies, who could not undertake the work due to security concerns.

The Project Managers placed a revised work plan of 30 months for completion of balance works, which are mainly, drilling and drifting at Sapt Kosi High Dam Project site and EIA Studies. The JTE noted above work plan and directed the JPO-SKSKI to revisit the cost estimate accordingly.

9.3 Way forward for completion of the investigation work / DPR

The Indian side conveyed their concern at the very slow progress of works at various sites due to uncertain security situation at those sites. The Indian side reiterated the need to disseminate information on the beneficial aspects of the Project among the local people. Subject to the approval of the revised cost and work plan by concerned GOI authorities the Indian side suggested downsizing of the JPO-SKSKI to 11 officials from each side, which could be augmented as and when field works commence at full swing. The Nepalese side opined that as the present level of staff is bare minimum for completion of ongoing investigation
works, it should be continued. The Nepalese side expressed confidence that in view of the improved security situation, it should be possible to expedite the field investigations and the JPO-SKSKI staff strength should be augmented at an early date.

**9.4 Any other item**

It was agreed to discuss the security situation at the project sites under this agenda item.

It was agreed that provision of adequate and effective security at the various project sites was essential for progress of investigations and their timely completion. Based on the experience of the geological investigations undertaken in June 2010, it was agreed that for all field investigations works, the Project Managers will closely coordinate with the security agencies to ensure timely mobilization for completion within the scheduled timeframe. The Government of Nepal will also ensure necessary security for the work being undertaken by other agencies contracted by the JPO-SKSKI and equipment installed at various sites.

**9.4.1 Visits by Nepalese Experts**

JTE approved the visits of the Nepalese expert (Dr. K.P. Sharma, Deputy Director General, DHM, Kathmandu) on 23-24 July, 2009 at Raxaul, India in connection of the Hydrological Studies of the project, arranged by JPO-SKSKI.

It was agreed to hold the next meeting of JTE at New Delhi in January, 2011.

The meeting was held in a very cordial atmosphere.

Signed on August 2, 2010 at Kathmandu, Nepal.

(Sunil B. Malla)  
Director General  
Department of Electricity Development  
Government of Nepal

(R.C.Jha)  
Member (RM), CWC & Ex-Officio Additional Secretary to the Government of India
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10. Shri S.M. Bajracharya,  
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AGENDA FOR THE 9th JTE MEETING

9.1 Review of progress of works
   9.1.1 Topographical Survey
   9.1.2 Geotechnical Investigations
   9.1.3 Hydrological Studies
   9.1.4 Seismological Studies
   9.1.5 Construction Material Survey
   9.1.6 EIA Studies
   9.1.7 Power System Studies
   9.1.8 Communication Studies
   9.1.9 Irrigation Studies and Command area survey
   9.1.10 Navigation Studies

9.2 Revision of Cost Estimates

9.3 Way forward for completion of the investigation work / DPR

9.4 Any other item