SKHEP (450MW) Certificate

HPPCL *Check list Serial No-*

ALTERNATIVES CONSIDERED AVOIDING / MINIMISING THE USE OF FOREST LAND FOR THE CONSTRUCTION OF SHONGTONG-KARCHHAM HYDRO ELECTRIC PROJECT (450MW).

The team comprising of Divisional Forest Officer, Kinnaur Forest Division, Additional District Magistrate, Sub-Division Kalpa and the Authorised Signatory of HPCL, have jointly inspected the proposed site for development/ construction of Shongtong –Karchham Hydro Electric Project (450MW) and examined four alternatives with a view to avoid /minimize the use of forest land and the trees to be felled:-

Accordingly, the alternatives are described as follows:-

Alternative-I:

Original dam site at Shontong Bridge: - Through this is the ideal site from engineering point of view, the same has to be abandoned due to administrative problem. The site is near defense installation and the authorities were not allowing and type of activities at the proposed site.

Alternative-II:

Left bank alternative with dam with just near the confluence of Tangling Khad with Satluj river. At this site there is a well defined vertical rock on the left bank but no rock exposures on the left bank of the river, but the exposures are at higher elevations. To know the depth of rock one drill hole was drilled which showed a overburden of 50 meters, hence this site has to be abondaned.

In view of the presence of more than 52m thickness of overburden in the valley. Presence of large land slide overlooking the site on the left

Divisional Forest Officer,
Kinnaur Forest Division
at Reckong Peo (H.P.)

Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Peo,
Distt. Kinnaur H.P., 172107

abutment, and occurrence of large debris fan just downstream of dam axis on the left flank which could interfere with the alignment of HRT and other appurtenant structure, the site has to be abandoned and the possibility of locating a dam upstream was explored.

Alternative-III:

A dam site just down stream of steel truss bridge where there is a vertical left bank and exposure of rock on the right bank was selected for a suitable dam. This proposal envisaged a location of water for conductor system of the right bank of the river as gives the shortest length of the system.

The Sub-surface exploration carried out at the site through four drill holes along the dam axis indicated the depth of bedrock in the river bed varies between 16.5 m. to 66.5m. The bed rock is buried deeper on the right bank. Therefore this site was not found suitable for a high dam and the possibility of a barrage as a diversion structure was studied.

In order to assess the thickness of overburden and limit of slumping on right bank, subsurface exploration, comprising one exploratory drift and one drill hole on the right bank was drilled. The explorations indicated that the limit of slumping falls beyond RD 60m in the drift. The drill hole drilled, indicated the presence of overburden down to 42m depth. The results of these exploration indicated that the right bank is not suitable for locating intake structure, approach tunnel to Desilting Chamber and Desilting Chamber itself.

Alternative-IV.

Present proposal consists of intakes / Sedimentation Chamber, HRT and power house located on the left bank of the river. left bank was found more suitable as the components of the project intercept less forest land and it also provide good geological conditions to construct the various

Divisional Forest Officer,
Kinnaur Forest Division
at Reckong Peo (H.P.)

Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Peo,
Distt. Kinnaur H.P., 172107

components of the project, as compare to the right bank and no other suitable area was available, where use of forest land could be avoided/ minimized. In the present proposal, due to change in capacity / Capacity enhancement from 402 Mw to 450 MW and restriction imposed by the Army authorities for the construction, re-alignment of some Project Some components were made due to which this necessity of addl. Forest land was arise to undertake the construction works for the successful completion Of project for the interest of State as well as nation . Keeping in view the minimum requirement of addl. Forest Land. Since in the Proposed addl. Forest land, area project the vegetation on area required is low and is mostly rocky/ barren. While there is small destruction of green vegetation, therefore this location is suitable for the construction of this project.

Divisional Forest Officer,
Kinnaur Forest Division
at Reckong Peo (H.P.)

Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Peo,
Distt. Kinnaur H.P., 172107