



**विषय:** DPR of Song Dam Drinking Water Project, Dehradun (Uttarakhand).

**संदर्भ:** Letter no. 4920/SE(PC)/Song Dam dated 27.12.2019.

May kindly refer to letters under reference on the above subject received from Superintending Engineer, Project Circle, Uttarakhand Irrigation Department, Dehradun, submitted compliance to the comments of this office asked vide letter no. 2/6/ISM-2/2017/363 dated 02.12.2019 for examination from inter-state aspect. The same was examined and further comments on the compliance are as under:

**Comments:**

Sl. No.	Observation of ISM-2, CWC	Reply by Uttarakhand Irrigation Deptt.	Further comments of ISM-2 Dte., CWC
1	<b>Point No. 1:</b> Song river is a left bank tributary of Ganga river which joins just upstream of Haridwar. Therefore, Ganga being an inter-State river, the proposal needs to be examined from inter-State aspect.	Agreed	No comments
2	<b>Point No. 2:</b> There is no inter-state agreement on sharing of waters river Ganga between basin states including Uttar Pradesh and Uttarakhand. Hence, water utilization including evaporation and other loss from the reservoir would be accounted against the State of Uttarakhand when any agreement for sharing of Ganga river water is reached among the basin States of UP and Uttarakhand. Certificate in this regard has already	No Comments	No further comments

	been submitted by State Govt. vide letter C-15/C.E(L-1)/Song Dam dated 13.03.2019 at page 38 of DPR.		
3	<b>Point No. 3:</b> Water availability study of the project has been examined by Hydrology (N) Dte., CWC vide letter no. 1/Uttara/29/2006-Hyd(N)/ 148-149 dated 22.04.2019 and as per the above study, the availability of water at 50%, 75% and 90 % dependability is 135.03 MCM, 111.01 MCM and 98.60 MCM respectively.	<b>No Comments</b>	<b>No further comments</b>
4	<b>Point No. 4:</b> The Project Authorities have submitted reservoir balance analysis studies for the project for various scenarios. It may be mentioned here that the letter under reference (ii) may be referred to, wherein the Hydrology Dte., CWC has prepared a report on Water Availability of proposed Song Dam Project. The same may be used while preparing water balance studies.	The revised reservoir water balance analysis has been carried out which is based on CWC approved series taking into consideration the provisions of Bangladesh treaty(Annexed herewith) is evident that net out flow in the lean period (1 <sup>st</sup> Jan-31 <sup>st</sup> May) is more than inflow.	As per revised reservoir water balance analysis, CWC approved flow from January to May is 18.99 MCM and net D/s out flow (E flow+return flow from + d/s release other than E Flow) from Jan. to May is 22.704 MCM. The reservoir storage after meeting demand at the end of December is 26.40 MCM and drinking water demand from Jan. to May is 22.65 MCM. As per Revised Annexure-I, out flow is more than inflow during Jan. to May. Hence, the lean period drinking water demand from Song Dam will be met from the Dam storage not from the Song river. Hence, it does not attract international treaty of Farakka.
5	<b>Point No. 5:</b> The source from where the data for evaporation losses has been used in the DPR may also be mentioned.	Evaporation losses have been well discussed in the Chapter no. 6.4.3.1(page no. 127) of the DPR. The report has been prepared by NIH, Roorkee and references have been well recorded. Detailed calculation for evaporation losses has been carried out in Modified reservoir analysis (Annexed herewith). NIH,	In the water balance analysis, the Evaporation loss during the year has been given as 0.4442 MCM, hence, no further comments to offer.

		Roorkee has used measured pan Evaporation data at FRI Dehradun.	
	<b>Point No. 6:</b> The seepage losses from the reservoir may also be appropriately considered by the Project Authorities.	It has been carried out in detail in the modified reservoir analysis. Overall seepage through the reservoir is about 0.511 MCM which is almost negligible and is not affecting the reservoir planning.	In the water balance analysis, the Seepage loss during the year has been given as about 0.511 MCM, hence, no comments to offer.
7	<b>Point No. 7:</b> If, ground water utilization is envisaged in the project, it is suggested that views on availability of the same may be obtained from CGWB/State Ground Water Board.	Present system utilizing 165 MLD of drinking water demand, as detailed in page 27 of DPR, is totally based on sustainable ground water system which is as per availability ensured by CGWB to the agencies in state. Please see the aforesaid reservoir balance analysis for details.	No further comments to offer
8	<b>Point No. 8:</b> At page 42-43 of DPR, State Govt. vide letter 3078/S.E(PC)/Song Dam dated 06.08.2019 has certified that the withdrawal of water for the project has been planned only during monsoon period, hence, it does not attract Indo-Bangladesh Water Treaty 1996 on Farakka. Since, as per MoWR guidelines 2009, withdrawal is not permitted from Ganga basin during lean period (i.e. from 1 <sup>st</sup> January to 31 <sup>st</sup> May). Accordingly, the project authority may take the following measures.	Please refer the Final Reservoir Analysis (Annexed herewith) as a reply to the observation raised. Further, it is inferred from the attached annexure that net outflow in the lean period is more than inflow. Thus, it does not attract Indo-Bangladesh treaty. Also it is submitted that the international clearance has already accorded by CWC vide letter no. Z-23011/1/2019-O/o SJC-I(FM)4105-06 dated 19.12.2019.	<b>As</b> per water balance analysis, CWC approved flow from January to May is 18.99 MCM and net D/s out flow (E flow+return flow from + d/s release other than E Flow) from Jan. to May is 22.704 MCM and the reservoir storage after meeting demand at the end of December is 26.40 MCM and drinking water demand from Jan. to May is 22.65 MCM. Hence, the lean period drinking water demand from Song Dam will be met from the Dam storage. As replied, the shortage in months of October, November & December, shall be met with the existing surface and ground water sources which are sufficient to meet the present demand of 193 MLD as mentioned in Table 2.5 of DPR

As per the revised Annexure –I received from the State Govt., under Reservoir Balance Analysis-column 4, total drinking water annual demand from the Song Dam is 52.45 MCM and 80% of the domestic demand has been considered being released back to the river system as return flow. Hence, net water utilization including evaporation and seepage loss from the reservoir worked out by the State Govt. as detailed below would be accounted against the State of Uttarakhand when any agreement for sharing of Ganga river water is reached among the basin States.

- i) Total Annual Demand from the Song Dam = 52.45 MCM
- ii) Less 80% return flow =  $52.45 - 41.96 = 10.49$  MCM
- iii) Evaporation loss = 0.4442 MCM
- iv) Seepage Loss = 0.511 MCM
- v) Total annual utilization =  $(ii) + (iii) + (iv) = 11.4452$  MCM

There is no inter-state agreement on sharing of waters river Ganga between basin states including Uttar Pradesh and Uttarakhand. Hence water utilization including evaporation loss, seepage loss from the reservoir would be accounted against the State of Uttarakhand as and when any agreement for sharing of Ganga river water is reached among the basin States. Certificate in this regard has already been submitted by the State Government.

In view of the above, it may be conveyed that there is no objection to the withdrawal of water for the Song Dam Drinking Water Project from inter-State aspect and subject to fulfilling of conditions mentioned in international Clearance furnished by Sr. Joint Commissioner-I(FM), DoWR, RD & GR vide letter No. Z-23011/1/2019-O/o SJC-I (FM) dated 19.12.2019. However, this may not be taken as approval of the CWC for allocation of 52.45 MCM of water for domestic water use.

This issues with the approval of Member (WP&P), CWC.

*(Handwritten signature)*  
06/1/2020  
(राजेश कुमार)  
निदेशक (ISM2)

मुख्य अभियन्ता, परियोजना मूल्यांकन संगठन (PAO), केंद्रीय जल आयोग, नई दिल्ली।

के. ज. आ. पत्र संख्या 2/6/ISM-2/2017/ 395

दिनांक: 06.01.2020