

Status Note of Indrapuri Reservoir Project (erstwhile Kadhwan reservoir), Bihar

(Latest File No. 13/240/2020-PA (N))

1.0 Background:

The Sone River Commission (SRC) was set up by the Government of India in accordance with a provision in the Inter-State Agreement on sharing and utilisation of Sone waters (popularly known as **Bansagar Agreement**). Based on this agreement, sharing and utilization of Sone Waters was concluded by the three Co-basin States of Madhya Pradesh (MP), Uttar Pradesh (UP) and Bihar on **16th September, 1973**.

As per this agreement, **7.75 MAF of water was** allocated for Bihar which includes the requirement of Sone canal System also. Sone Canal system is more than a century old and it is completely dependent on release of water from Rihand and Bansagar Project and the free catchment falling downstream of these projects. However, Bihar is not getting its due share particularly at the time when it is most needed. Most of the Bihar's share of water is available during monsoon and due to non availability of any storage in the upstream of existing Sone Barrage, all this water is going as waste.

To utilise the water available during monsoon period and to provide stability to Sone Canal System, Water Resources Department (WRD), Government of Bihar (GoB) started work on preparing a comprehensive and integrated plan of development of water and related land resources in the Sone river basin.

As a part of this overall plan, a suitable site was identified near village Matiawan for construction of a storage reservoir for enhancing irrigation potential of Sone Canal system and also for incidental generation of Hydropower. The project was then called **Kadhwan Reservoir Scheme** with the Dam site identified about 70 km upstream of the existing Sone Barrage. The project was subsequently renamed after the creation of Jharkhand State in year 2000 as **Indrapuri Reservoir Project**. The dam across Sone River for Indrapuri project has been proposed having its axis near villages Kadhwan (District Garhwa) on right bank & Matiawan (District Rohtas) on left bank respectively.

2.0 Location:

- 1) State – Bihar
- 2) Districts Benefitted – Palamau/Rohtas
- 3) River/Basin – Sone / Ganga

3.0 Inter State Aspects

Kadhwan Reservoir Scheme was proposed by Bihar with construction of Dam and power house (90*5 MW). During examination of Inter State Aspect of Kadhwan Reservoir Scheme, Government of Uttar Pradesh observed that the proposed Full Reservoir Level (FRL) of Kadhwan Project will interfere with the Tail Water Level (TWL) of their Obra Dam Toe Powerhouse and they accordingly desired that the FRL be reduced from El 173 m to El 169 m.

The matter was also deliberated in the joint meeting held by Central Water Commission (CWC) **on 10th May 2005** between Governments of Bihar and Uttar Pradesh. In the meeting it was decided that the FRL for Indrapuri Dam would be fixed with due consideration of the back water effect at Obra Power House TWL and Govt of Bihar would prepare a fresh DPR with changed optimal levels and submit to CWC for appraisal. Further, the DPR with FRL 173.00m would be presumed as returned and GoB would approach to SoI for preparation of contour maps and property survey from 169.00 m to 173.00 m at 1.00 m interval. Second inter-State meeting was held on **09.08.2007**.

Subsequently, another Inter-State Meeting was held on **22.06.2015**, Chairman, CWC desired that Govt of Bihar need to build up a case for discussion and agreement/understanding with Govts. of UP and Jharkhand. He suggested that a Preliminary Report including chapters on Water Assessment, Irrigation Planning, submergence detail, likely power loss and its compensation mechanism, likely expenditure as well sharing of benefits and costs and inter-State issues may be submitted for circulation amongst Govt. of UP and Jharkhand and specialized directorates of CEA/CWC. Thereafter, an inter-State meeting may be called for consideration of 'in-principle' consent for the preparation of DPR as per the procedure.

FM wing letter dated 23.10.2015 intimated that Indrapuri Reservoir Project proposed on Sone river, which is a tributary of Ganga River itself. The preliminary report does not contain any information/ chapter on International aspects of the project. As there exists a Treaty between India & Bangladesh on sharing of Ganga Waters on Farakka, every project proposing consumptive uses from the Ganga Basin needs to obtain clearance of this Ministry from International Angle.

In inter-State meeting held on **05.02.2016**, it was decided that Govt of Bihar may proceed with preparation of DPR with the FRL of 169m and MWL 171 m which has been agreed by Govt. of UP. In the mean time, Govt of Bihar may accordingly take up the matter with Govt of UP at appropriate level to reach the consensus for fixation of Higher FRL/MWL.

Subsequently, **Govt of Bihar submitted Final level-1 (PPR) Report including Final Hydrology & Power potential study Reports vide letter dated 24.12.2018**. The proposal was circulated for comments/observations vide CWC letter No., 13/240/2015-PA (N)/233-40 dated 16.01.2019.

4.0 Project Proposal (*Project Preliminary Report -PPR*):

The present PPR, the following data for the design of civil engineering components of the project have been considered.

- Design Flood for spillways : 37997 m³/s
- Full Reservoir Level (FRL) : 169.00 m
- Maximum Water Level (MWL) : 171.00
- Minimum Drawdown Level (MDDL) : 160.50 m

- Temporary River Diversion Flood
(1 in 25 Years of Monsoon Flood) : 25000 m³/s
- Rated Design Discharge for
Power Generation: 293.34 m³/s per unit
- Power of Generation Machines : 4 no. each of 75 MW
- Normal Tail Water Level (TWL) : 135 m
- HFL at Exit of Tail Race Channel : 142 m

5.0 Appraisal Status

5.1 Hydrology (Hyd(N) Dte)

Comments/observations received **vide letter No. 1/58/Bihar/90/Hyd(N)/71 dated 19.02.2019**. The same was communicated to State Govt vide **letter No. 13/240/2015-PA (N)/636 dated 22.02.2019**. Subsequently reminders were issued vide letter dated 12.07.2019, 09.08.2019, 22.08.2019 and 03.10.2019. A Water Availability Study (August 2019) done by Hydrology (N) Dte was sent to PA on 22.08.2019. The report on Water Availability Study, Design flood Study and Reservoir Sediment study has been submitted by the PA on 19.11.2019. After examination the observation of Hydrology dte was sent to State on 02.03.2020 for compliance. The same is awaited.

5.2 Construction Material (CSMRS)

Comments/observations received **vide letter No. 29/36/Indrapuri Reservoir Scheme/RM-I/CSMRS/2019/71 dated 18.02.2019**. The same was communicated to State Govt vide **letter No. 13/240/2015-PA (N)/721 dated 27.03.2019**. Subsequently reminders were issued vide letter dated 12.07.2019, 09.08.2019, 03.10.2019 and 22.08.2019. The compliance has been received on 29.11.2019 and is under examination in CSMRS.

5.3 Inter-State matter (ISM-2 Dte)

Comments/observations received **vide letter No. 2/4/ISM-2/2017/119 dated 14.03.2019**. The same was communicated to State Govt vide **letter No. 13/240/2015-PA (N)/721 dated 27.03.2019**. Subsequently reminders were issued vide letter dated 12.07.2019, 09.08.2019, 22.08.2019 and 03.10.2019. State submitted reply vide letter No. YoMo-4(Vividh) 07-278/2016-Part-I-523 dated 14.11.2019. The same was examined in CWC and observations were issued by CWC on 19.12.2019. The compliance from the PA is awaited. A reminder has been issued on 24.01.2020.

5.4 Foundation Engineering & Seismic Aspects (FE&SA Dte)

Comments/observations received vide letter No. 11/34/TE/2019/FE&SA/188-89 dated 18.03.2019. The same was communicated to State Govt vide letter No. 13/240/2015-PA (N)/721 dated 27.03.2019. Subsequently reminders were issued vide letter dated 12.07.2019, 09.08.2019, 22.08.2019 and 03.10.2019. The compliance has been received on 16.12.2019 on which further observations / comments vide letter dated No. 11/34/TE/2019/FE&SA / dated 09.07.2020. The compliance received vide letter dated 09.09.2020. Now, FE & SA dte vide its Letter NO. 11/34/TE/2019/FE&SA/281-84 dated 17.09.2020 has conveyed the clearance.

5.5 Irrigation Planning (IP-S Dte)

Comments/observations received vide letter No. 2/1545/IP-S/2019/1156 dated 19.03.2019. The same was communicated to State Govt vide letter No. 13/240/2015-PA (N)/721 dated 27.03.2019. Subsequently reminders were issued vide letter dated 12.07.2019, 09.08.2019, 22.08.2019, 03.10.2019. The compliance has been received from Project Authority on 20.12.2019 and is under examination.

5.6 Dam Design (CMDD-N&W Dte)

Comments/observations received vide letter No. 3/210/2019-CMDD (N&W)/319 dated 07.08.2019. The same was communicated to State Govt vide letter No. 13/240/2015-PA (N)/721 dated 09.08.2019. The compliance is awaited from PA. A reminder has been issued on 24.01.2020.

5.7 Power Potential Study (CEA)

The observations on the report on Power Potential Study were issued by CEA on 13.12.2019. The same has been forwarded to the PA and compliance from the PA is awaited.

Subsequent to the clearance from the concerned wings on the relevant aspects of the preliminary report, the “In-Principle” consent would be accorded to the project by the Screening Committee of CWC for the preparation of DPR.