

BRIEF NOTE ON C/o OF HYDRO ELECTRIC POWER PROJECT BAGGI (2 x 21 MW)

INTRODUCTION :

Bhakra Nangal and Beas Projects were originally the joint ventures of erstwhile states of Punjab and Rajasthan. On re-organisation of the erstwhile state of Punjab on November 1, 1966 Bhakra Management Board was constituted under section 79 of the Punjab Reorganisation Act, 1966 for the administration, maintenance and operation of Bhakra Nangal Project (copy attached).

The Beas Project works, on completion, were transferred to Bhakra Management Board and it was renamed as Bhakra Beas Management Board (BBMB) i.e. 15.05.1976 (copy enclosed).

PROJECT HISTORY :

During the construction of Beas Sutlej Baggi Power Project, it was conceived that a Power Plant could be constructed at the exit of Pandoh Baggi Tunnel as sufficient head was available between Pandoh Reservoir and at the start of Sundernagar Hydel Channel (SNHC). Consequently, a Bypass Tunnel at 170 metres was constructed to divert the water for the prospective plant. Baggi Power Plant, an extension of BSL Project was proposed to have two units of 20 MW each on the basis of head and water availability. Keeping in view the safety of vital water conductor system link of Beas Sutlej link (BSL) Project, transient studies have to be conducted for feasibility of the proposed Baggi Power Plant and due to this the execution of this project had been delayed due to one of this and other reasons. However, some of the components of this proposed Baggi Hydro Electric Power Project were constructed during the construction of BSL Project.

PROJECT ALLOTMENT FOR EXECUTION:

Allotment of Baggi HEP in favour of Bhakra Beas Management Board has been made by HP Govt vide Special Secretary (Power) to Govt. of Himachal Pradesh vide letter no. MPP-1-(2)-12 dated 10.07.2019 (copy /enclosed) and further approved for execution of this project by BBMB has been conveyed by Ministry of Power, Govt of India vide Under Secretary to the Govt. of India letter no. 5-4/1/2019-BBMB dated 22.10.2019 (copy enclosed).

PROJECT LOCATION:

The proposed Baggi Power Plant (42 MW) is located on National Highway No.21 about 12 KM upstream of Sundernagar Town in District Mandi of Himachal Pradesh. The scheme is located between latitude 31°35'11.60" to 31°35'16.37" N and longitude 76°58'14.10" to 76° 58'22.97" E

TYPE OF PROJECT :

The proposed Baggi Power project will harness the head available between Pandoh Reservoir Level of Sundernagar Hydel Channel at Baggi which is at present being dissipated through a stilling basin downstream of Baggi Control Works (BCW). The existing by-pass tunnel of dia 6.1 m will be used as a headrace tunnel for feeding the powerhouse. The gate being used for closing the by-pass tunnel will be used as an emergency gate for closing the powerhouse. It is a run-of-river scheme utilising a variable head from 21.34 m to 49.54 m depending upon the discharge in Pandoh Baggi Tunnel (PBT).

As per the present Hydro Potential studies for proposed Baggi Power Plant, the capacity of power plant has been revised to **42 MW** consisting of two units each one of 21 MW capacity. The Major components of the proposed Baggi power project are as under :

S.No.	Project Component	Status
1.	Bypass Tunnel	Already constructed during the construction of BSL (P)
2.	Surge Shaft	Already Constructed upto EL 859.0 m during construction of BSL (P). However to be extended/constructed upto EL 892.0 m
3.	Catcher Chamber	To be constructed
4.	Penstock header and Penstock	Already constructed and only steel liner to be fixed
5.	Power House	To be constructed
6.	Tail Race Channel	To be Constructed
7.	Switchyard	To be constructed

Detailed Layout plan of the proposed Baggi Power plant showing its components has been enclosed with. The salient features of the project components are as under :

SALIENT FEATURES :

BY PASS TUNNEL

(Already Constructed)

Number 01
Shape & size Circular 6.10 m dia
Length 32.0 m
Design discharge 174 cumec

SURGE SHAFT

Type Orifice type
Diameter a) 7.0 m dia from EL 842.21m to 882 m
b) 10.0 m dia from EL 882 m to EL 892 m
Height 49.79 m

CATCHER CHAMBER

Diameter 33.0 m
Height 14.40 m (from EL 882 m to EL 896.4 m)

PENSTOCK HEADER

Number 01
Type Circular, steel lined
Diameter 6.10 m
Length 160.60 m
Thickness of steel liner 18 mm

PENSTOCK

Number 02
Type Circular, steel lined
Diameter 4.40 m
Length 45.12 m
Thickness of steel liner 18 mm

POWERHOUSE

Type Surface Power House

Type of Turbine	Vertical Francis
Design Discharge- 2 Units	119.6 Cumecs
Installed Capacity	42 MW (2 x 21 MW)
Maximum Head	49.54 m
Net Design head	38.94 m
Minimum head	21.34 m

Turbine


Type of Turbine	Francis
Maximum Output	23.45 MW
Rated Output	21.32 MW

After Finalisation of Survey and layout plan of proposed Baggi Power Plant, layout plan was marked on ground and as per this layout plan, detail of land requirement for Baggi Hydro Power project along with the status of land is as under:

Sn.	Land Khasra No./Muhall	Type of Land (Forest/Non-Forest)	Area of Land required (Hectare)	Project Component falling under Land Khasra	Ownership Of Land	Remarks
1.	501/1 /285 Khairi Daum	Forest land	0.87 Hect.	Surge Shaft and its Catcher Chamber	H.P Forest Deptt.	Alignment of Surge Shaft fixed as the portion of Surge Shaft was already constructed during Nineteen Seventies on this land
2.	467/ 285 Khairi Daum	Non Forest Land	1.17 Hect.	Protection works and working space for Catcher Chamber of Surge shaft	Private	Protection works and working space area required for Catcher Chamber of Surge shaft falls on this Khasra land for which 0.17 Hect. Pvt. Land will be acquired
3.	472/285 Khairi Daum	Non forest Land	0.27 Hect	Project Road & Main Pandoh Baggi Tunnel	BBMB	Already under BBMB Possession
4.	473/285 Khairi Daum	Non Forest land	1.81 Hect.	Existing Baggi Control Works and Part of proposed Power house	BBMB	Already under BBMB possession
5.	474/285 Khairi Daum	Non Forest Land	1.01 Hect	Tail Race Channel and Power House of Baggi HEP	BBMB	Already under BBMB possession
6.	292/282 Khairi Awwal	Non Forest Land	12.09 Hect.	Switchyard of Baggi HEP	BBMB	Already under BBMB possession
7.	240/285 Khairi Dom	Non Forest Land	2.15 Hect.	Dumping Site For Baggi HEP	BBMB	Already under BBMB possession

From above detail, it is evident that almost all components of Baggi HEP falls under BBMB Khasra land which is a non forest land and Surge Shaft and its Catcher Chamber structure falls in Khasra No. 501, Mohal Khuri Dom (ekgksy& [wjh nkse a and as per the revenue record this land comes under the definition of Forest land of HP Govt. Portion of Catcher Chamber also falls under Land Khasra no. 467/285 Khuri Daum and as per the land revenue record, this is a non-forest private land.

It is pertinent to mention here that since the location of Surge Shaft is already fixed and portion of Surge Shaft of height is already constructed which has to be further extended upto 49.79 m height. Therefore, location /layout of this component neither can be altered nor can be changed. Hence keeping in view of the same Non-availability of Non forest land Certificate has also been obtained from District Collector Mandi vide his Office letter no. 82-83 dated 02-01-2020.


Er. S.P Sharma 17/11/2022
Sr. Executive Engineer
HC & BG Division, PSI (P)
B.B.M.B. Sundernagar
Sr. Executive Engineer,
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भारत का राजपत्र The Gazette of India

प्रकाशक

EXTRAORDINARY

भाग II—खण्ड 3—उपखण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्रधिकार से प्रकाशित

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NEW DELHI, SUNDAY, OCTOBER 1, 1967/ASVINA, 9, 1889

इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके।

Separate paging is given to this Part in order that it may be filed as a separate compilation

MINISTRY OF IRRIGATION AND POWER

NOTIFICATIONS

New Delhi, the 1st October 1967

S.O. 3506.—In exercise of the powers conferred by sub-sections (1) and (2) of Section 79 of the Punjab Reorganisation Act, 1966 (31 of 1966), the Central Government hereby constitutes the Bhakra Management Board, consisting of the following persons, namely:—

1. Shri N. G. K. Murti,
Retired Chief Engineer,
Government of Maharashtra
2. Shri B. R. Palta,
now working as General Manager,
Bhakra Dam,
Nangal Township
3. Shri G. S. Gyan,
(now working as Chief Engineer
(Construction), Electricity,
Patiala)
4. Secretary in charge of Irrigation
and Power, Government of Punjab
5. Secretary in charge of Irrigation
and Power, Government of Haryana
6. Secretary in charge of Irrigation
and Power, Government of Rajasthan
7. The Chief Engineer,
Multipurpose Projects and Power,
Government of Himachal Pradesh

whole time Chairman and
whole time Members ap-
pointed by the Central
Government under clause
(a) of sub-section (2) of
the said section 79.

Representatives of the
Governments of the States
of Punjab, Haryana and
Rajasthan and the Union
territory of Himachal Pra-
des, nominated by the
respective Governments
and Administrator under
clause (b) of the said sub-
section (2).

- (v) recommending to the concerned Governments suitable measures for the development of pisciculture;
- (vi) undertaking of suitable measures for the rehabilitation of persons displaced consequent on the construction of the Project;
- (c) any other function that may be delegated to the Board by the Central Government.

2. The Board shall have a Secretary who may be provided with such staff as may be necessary for the efficient discharge of his functions as such, and the office of the Secretary shall be located at New Delhi.

3. The Board may appoint such staff [other than that referred to in paragraph (2)] as may be necessary for the efficient discharge of its functions

(No. F. 17/23/66-B&B.)

K. P. MATHRANI, Secy.


Sr. Executive Engineer,
Hydel Channel & Baggi Gate Divn.,
B.S.M.B. Sundemagar.

8. The Joint Secretary,
Ministry of Finance,
(Department of Expenditure),
Government of India.
9. The Commissioner for Indus Waters
and Ex-officio Joint Secretary in
the Ministry of Irrigation and
Power, Government of India.

Representatives of the
Central Government nomi-
nated by that Govern-
ment under clause (c) of
the said sub-section (2).

[No. F. 6/3/66-B&B]

S.O. 3397.—In exercise of the powers conferred by sub-sections (2) and (3) of section 80 of the Punjab Reorganisation Act, 1966 (31 of 1966), the Central Government, in consultation with the Governments of the successor States and the State of Rajasthan, hereby constitutes the Beas Construction Board (hereinafter referred to as the Board) consisting of the following persons, namely:—

Chairman


- (1) The Minister of Irrigation & Power, Government of India

Members

- (2) The Chief Ministers of Punjab, Haryana, Himachal Pradesh and Rajasthan
- (3) One Minister each from the States of Punjab, Haryana and Rajasthan, to be nominated by the respective Governments
- (4) The Secretary to the Government of India, Ministry of Irrigation and Power.
- (5) The Chairman, Central Water and Power Commission
- (6) The Joint Secretary to the Government of India, Ministry of Finance (Department of Expenditure)
- (7) The Secretaries in charge of Irrigation and Power of the Government of Punjab and of the Government of Haryana
- (8) The Secretary to the Government of Rajasthan in charge of Colonisation and the Secretary to that Government in charge of the Beas Project
- (9) The Secretary in charge of Finance in the Government of Punjab, of Haryana and of Rajasthan
- (10) The Chief Secretary to the Government of Himachal Pradesh
- (11) The General Manager, Beas Project
- (12) The Chairman, State Electricity Boards of Punjab, Haryana and Rajasthan

and assigns to the Board the following functions, namely:—

- (a) the construction, in an efficient, economical and expeditious manner, of the Beas Project (hereinafter referred to as the Project) including the completion of any work already commenced, but excluding the fifth generating unit of 120 M.W. capacity at Bhakra Right Bank Power House; and
- (b) all other functions in relation to the project, including—
 - (i) Scrutiny of the Project estimates and making of any modification thereto and recommending the estimates for the administrative approval of the Central Government;
 - (ii) delegation of such powers, both technical and financial, as the Board may deem necessary, to the General Manager and other officers employed on the execution of the Project;
 - (iii) regulation of the construction of different parts of the Project and preparation of a phased programme of early utilisation of irrigation and power benefits;
 - (iv) recommending to the concerned Governments suitable soil conservation measures in respect of the catchment areas;


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(TO BE PUBLISHED IN PART II SECTION 3 SUB-SECTION (11)
OF THE GAZETTE OF INDIA.)

EXTRAORDINARY

GOVERNMENT OF INDIA
MINISTRY OF ENERGY
DEPARTMENT OF POWER

NEW DELHI, the 15th May, 1976.

NOTIFICATION

No. SO 350 (E) WHEREAS the components of the Beas Project namely, Bhatinda - Sangrur 220 KV transmission line and new Panipat sub-station, have been transferred to the Bhakra Management Board by the notification of the Government of India in the Ministry of Energy (Department of Power) No. S.O. 340(E) dated the 15th May, 1976.

NOW, THEREFORE, in exercise of the powers conferred by sub-sections (1) and (2) of section 79, read with sub-section (6) of section 80, of the Punjab Re-organisation Act, 1956 (31 of 1956), the Central Government hereby makes, with effect from the 15th May, 1976, the following amendment to the notification of the Government of India in the Ministry of Irrigation and Power No. SO 3506, dated the 1st October, 1967, namely:-

In the said notification, for the words "the Bhakra Management Board", the words "the Bhakra Local Management Board" shall be substituted.

(F No. 21/14/76-B&B)

R. Bhargava

(R.C. BHARGAVA)

JOINT SECRETARY TO THE GOVERNMENT OF INDIA

To

The Manager,
Government of India Press
Mazgaon Ring Road
New Delhi.

.....alongwith Hindi vers:

.....E.

S. S. S.

Sr. Executive Engineer
Hydel Channel & Baggi Gate Dwn.,
S.E.M.B. Sundemagar.

विद्युत अनुभाग

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22.7.19

File No. MPP-F(2)-1-2
Government of Himachal Pradesh
Department of MPP& Power

From

The Principal Secretary (Power) to the
Government of Himachal Pradesh

The Secretary,
Bhakra Beas Management Board,
Madhya Marg, Sector 19-B,
Chandigarh-160019.

Dated Shimla-2, the

10-07-2019

Subject: -

Allotment of 2x20 MW (40 MW) Baggi Power House (BPH) to
Bhakra Beas Management Board (BBMB).

Madam,

I am directed to refer to the subject cited above and to say that the
matter regarding allotment of 2x20 MW (40 MW) Baggi Power House (BPH) to
Bhakra Beas Management Board (BBMB) was placed before the Council of
Ministers in its meeting held on 03.07.2019 and it was decided to allot the aforesaid
project in favour of Bhakra Beas Management Board (BBMB). This is for your
information.

Yours faithfully,

Special Secretary (Power) to the
Govt. of Himachal Pradesh

Dated Shimla-02, the 10-07-2019

Endst. No. As above

Copy to the Director, Directorate of Energy, Shanti Bhawan, Phase-III, Sector-VI,
New Shimla-9, Himachal Pradesh for information.

Special Secretary (Power) to the
Govt. of Himachal Pradesh

Sr. Executive Engineer, 7/11/22
Hydel Channel & Baggi Gate Divn.,
B.B.M.B. Sundernagar.



No. 5-4/1/2019 – BBMB
Government of India
Ministry of Power

New Delhi, the dated 22nd October, 2019

To
The Chairman
Bhakra Beas Management Board
Sector 19/B, Madhya Marg,
Chandigarh

Subject: Execution of 40MW (2x20MW) Baggi Power House by BBMB.

Sir,

I am directed to refer to BBMB's letter No. 30245/B-103/Baggi/IP dated 19.09.2019 on the above mentioned subject and to convey herewith the approval of Competent Authority to formally assign the work of construction and execution of Baggi Power House to BBMB.

This issues with the approval of Hon'ble Minister of State (I/C) for Power and NRE.

Yours faithfully,

(Rita Singh)

Under Secretary to the Govt. of India

Telefax: 23766242

Sr. Executive Engineer,
Hydel Channel & Baggi Gate Divn.,
E.B.M.B. Sundernagar.