

No. J-12011/25/2017-IA.I (Part File)
Government of India
Ministry of Environment, Forest & Climate Change
[IA.1 – Division]

Indira Paryavaran Bhavan
3rd Floor, Vayu Wing
Jor Bagh Road
New Delhi – 110 003

Dated: 2nd July, 2018

To

The Chief Engineer & Basin Manager
Upper Mahanadi Basin
Office of the Chief Engineer & Basin Manager
Burla – 768 017
(Odisha)

Subject: Construction of Additional Spillway of Hirakud Dam in Sambalpur District of Odisha by Water Resources Department, Government of Odisha – Environmental Clearance (EC) – regarding.

Sir,

This has reference to your letter No. CE-BM-UMB-14 dated 4.1.2018 and subsequent letter 7.5.2018 on the above mentioned subject.

2. The above referred proposal was considered by the Expert Appraisal Committee (EAC) for River Valley & Hydroelectric Projects in its meeting held on 30.1.2018. The comments and observations of EAC on the project may be seen in the Minutes of the meeting which are available on the web-site of this Ministry.

3. It was noted that construction of additional Spillways in Hirakud Dam for the safety of dam. The length of the main dam is 4,800 m with two spillways. The left spillway has 40 sluice gates and 21 crest gates. The right spillway has 24 sluice gates and 13 crest gates. The total discharging capacity of both the spillways is 42,450 m³/s (15 lakh cusec). Taking into account of the operational constraint of few gates the effective discharge is about 36,806 m³/s (13 lakh cusec). The Central Water Commission (CWC) in 1997, reassessed the Inflow Design Flood with up-to date data. The revised design flood was computed as 69,632 m³/s (24.5 lakh cusec). In order to safely release the inflow design flood, the CWC advised to construct additional spillways at suitable locations. A joint expert team comprising of CWC, Egis-consultants of DRIP and World Bank visited Hirakud Dam site in March, 2015 to finalize the proposed feasible locations for the additional spillway. For safety of Hirakud dam, the CWC in consultation with dam safety experts have recommended construction of additional spillways at suitable locations adjacent to the Dam proper. The team of experts has examined several alternatives and has finalized the implementation as:

- i. **Phase-1:** Construction of additional spillways, 5 nos. of gates (15x15 m) each at the left bank 1st gap dyke of Hirakud dam near the 2nd saddle of Gandhi hillock with total discharging capacity 9,122 cumecs.



- ii. **Phase-2:** Another additional spillway at 13,100 ft along with the right dyke with 8 nos. gates each (15x10 m) size having total discharging capacity 13,571 cumecs will be taken up later on.

The option (1) will be taken up in the first phase for which the World Bank has agreed for necessary funding. The Govt. of Odisha has administratively approved the project. The layout of the spillway and spill channel has been finalized. The Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India is closely monitoring the progress of the project, as it is related to the safety of the Hirakud dam.

4. The project involves rehabilitation of 716 households and 1415 families. The cost of the proposed construction work is estimated to be Rs. 589.95 crores.

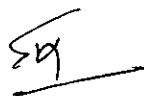
5. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and clarification furnished in response to its observations, have recommended grant of Environmental Clearance to the project. Accordingly, the Ministry of Environment, Forest & Climate Change hereby accords necessary environmental clearance to the above project as per the provisions of Environment Impact Assessment Notification, 2006 and its subsequent amendment in 2009, subject to compliance of following conditions:

Part A: Specific Conditions

- i. The project involves 1415 families for displacement. The compensation and other allowances as per Odisha Government R & R Policy, 2006 and Right to Fair Compensation and Transparency in Land acquisition, Rehabilitation and Resettlement Act, 2013. The R&R assistance currently based on 2014 prices will be indexed to 2018 price as desired by the World Bank.
- ii. A Monitoring Committee for R&R shall be constituted which shall include representatives of project affected persons including representative from SC/ST category and a woman beneficiary.
- iii. A committee among young youth (both male and female mass) should also be constituted to supervise the implementation of R&R Work.
- iv. Consolidation and compaction of the generated muck shall be carried-out in the muck dumping sites and the dumping sites. As proposed in the muck disposal plan, muck generated should be utilized for low laying reclamation within the project area along the spillway channel. The sites should be rejuvenated using integrated biological & biotechnological measures (both biological & engineering measures). Sufficient funds are to be allocated for this purpose in the budget.
- v. All the commitment made during the public hearing shall be fulfilled completely by the State Government in letter and spirit.
- vi. The equipment likely to generate high noise levels during the construction period or otherwise shall meet the ambient noise level standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986. Ambient Noise level monitoring shall be conducted on a monthly basis during the period of construction at suitable locations and copy of the test reports to be submitted to Regional Office, MoEF & CC, Bhubaneswar on six monthly basis.

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- vii. The proposed Compensatory Afforestation Programme in 9.441 ha of area in Bonai Division of Sundargarh District with block plantation over 7.453 ha @ 1600 plants/ha and gap plantation over 1.958 ha @ 200 plants/ha with native tree species shall be implemented in consultation with State Forest Department.
- viii. Proposed greenbelt programme and reservoir rim treatment with local indigenous plant species along the roadsides, canal bank, reservoir periphery etc. shall be undertaken in consultation with State Forest Department. As proposed plantation of about 35,950 shall be taken-up strictly. The allocated grant of Rs.88.14 lakhs for this purpose should be fully utilized and not to be diverted for any other purpose.
- ix. The fishery development and management plan, as proposed in the EIA/EMP (December, 2017) for the conservation fish in river shall be developed. As proposed in the programme for development 10 ponds for development of fingerlings comprised of indigenous species shall taken-up and introduced in river above the project site & in and around the project site shall be implemented in consultation State Fisheries Department. The allocated grant of Rs. 50 lakhs should be utilized fully and not to be diverted for any other purpose. As suggested by the committee, the following should be followed:
- i. Report on availability of Tor species in the upstream. dam and downstream availability of Tor species should be followed strictly for fisheries development in consultation with State Fisheries Department.
 - ii. Reintroduction programme should be taken-up with proper scientific procedure after a brief study in consultation with State Fisheries Department.
 - iii. Fishing should be controlled during their breeding season.
- x. The Biodiversity Conservation and Wildlife Management Plans, as proposed in the EMP (December, 2017) shall be taken up immediately and implemented in consultation with the State Forest Department without any diversion of allocated funds. As suggested under Biodiversity Conservation and Management Plan the following programs have to be taken up strictly:
- a) Biodiversity Conservation Cell
 - b) Habitat Improvement Programme
 - c) Botanical Gardens with Butterfly Habitat.
- xi. Occurrence of stagnant pools/slow moving water channels during construction and operation of the project providing breeding source for vector mosquitoes and other parasites. The river should be properly channelized so that no small pools and puddles are allowed to be formed. Even after taking precaution, due to unforeseen situations, breeding of mosquito and resultant malaria or mosquito borne diseases can increase. If such a situation arises, it will be the responsibility of project authorities to take all steps i.e. residual insecticidal spray in all the project area and surrounding 3 km. area keeping the flight range of mosquitoes in consideration
- xii. Any other clearance from any other organization/department if required should be obtained.
- xiii. During release of water from the spillways, prior information to the people residing at the downstream of the dam (~ 50 km) should be given through different media.



Part-B: General Conditions

- i. Adequate arrangements for providing free fuel like LPG shall be made at the project cost for the labour engaged in the construction work so that indiscriminate felling of trees is prevented.
 - ii. Medical facilities as well as recreational facilities shall also be provided to the labourers.
 - iii. The labourers to be engaged for construction works shall be thoroughly examined by health personnel and adequately treated before issuing them work permit.
 - iv. Water sprinkling arrangements shall be made to suppress the fugitive emissions and on monthly basis, ambient air quality to be monitored during the period of construction.
 - v. Potable drinking water and proper sanitary facilities shall be provided for the labour force.
 - vi. Restoration of construction area including dumping sites of excavated materials shall be ensured by leveling, filling up of borrow pits, landscaping etc. The area should be properly treated with suitable plantation.
 - vii. Environmental parameters shall be monitored and six monthly monitoring reports shall be submitted to the concerned Regional Office of the Ministry, Bhubaneswar.
 - viii. Solid waste generated, especially plastic waste should not be disposed of as landfill material. It should be treated with scientific approach and recycled.
6. The Project Proponent shall provide full cooperation and all required documents / data to the Officials from concerned Regional Office of the Ministry, Bhubaneswar who would be monitoring the implementation of environmental safeguards.
7. The responsibility of implementation of environmental safeguards and carrying out environmental monitoring rests fully with the Chief Engineer & Basin Manager, Upper Mahanadi Basin and Government of Government of Odisha.
8. Besides the above stated conditions, the Project Proponent shall also implement all environmental safeguards, as proposed in the EIA/EMP report and other reports from time to time. The Regional Office, MoEF & CC, Bhubaneswar shall monitor implementation of EMP at regular intervals.
9. The Environmental Management Plan (EMP) shall be strictly adhered to. The total cost of implementation of mitigation measures as per EMP is Rs 600.66 Lakhs. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
10. In case of change in the scope of the project, the same shall be intimated to the Ministry and fresh approval, if required, shall be taken from the Ministry.
11. The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary and to take action including revoking of the clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.
12. This clearance letter is valid for a period of 10 years from the date of issue of this letter for commissioning of the project.



13. A copy of the clearance letter shall be marked to concerned Panchayat/Zilla Parishad/Municipal Corporation, Urban local body and local NGO, if any, from whom any suggestion/representations were received while processing the proposal. The clearance letter shall also be put on website by the project proponent.

14. State Pollution Control Board / Committee shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's / Tehsildar's Office for 30 days.

15. The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment, Forest & Climate Change at <http://www.moef.nic.in>.

16. After 5 years of the commissioning of the Project, a study shall be undertaken regarding impact of the project on the environment and downstream ecology. The study shall be undertaken by an independent agency, decided in consultation with the Ministry.

17. The project proponent shall also submit six monthly reports on the status of compliance of stipulated EC conditions including the results of monthly monitored data (both in hard copies as well as by email) to the respective Regional Office of MOEF& CC.

18. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days from the date of issue, as prescribed under Section-16 of the National Green Tribunal Act, 2010.


Yours faithfully,



(Dr. S. Kerketta)
Director

Copy to:

1. The Secretary, Ministry of Water Resources, RD & GR, Shram Shakti Bhawan, Rafi Marg, New Delhi -3.
2. The Secretary, Water Resources Department, Govt. of Odisha, Bhubaneswar- 751 001.
3. The Principal Secretary, Department of Forest and Environment, Government of Odisha, Bhubaneswar - 751 012.
4. The Chief Engineer, Project Appraisal Directorate, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110 066.
5. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (EZ), A/3, Chandrasekharpur, Bhubaneswar – 751 023.
6. The Member Secretary, State Pollution Control Board, State Pollution Control Board, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit - VIII, Bhubaneswar - 751 012, Odisha.
7. Guard File.



(Dr. S. Kerketta)
Director