

## **Bhakra reservoir is being operated in casual, adhoc manner?**

### **Need for clearly defined norms of accountability in reservoir operations**

India's most celebrated dam, the Bhakra (also known as Gobind Sagar), seems to be operated in an ad hoc, casual manner, bringing to risk large number of people, their livelihood and also the water availability in the areas served by the dam. The latest instance in this regard happened earlier this month when, because of such casual operation, the dam wall experienced a tilt or deflection beyond the safe limits as accepted by a senior official of the Bhakra Beas Management Board which is in charge of managing the Bhakra, Pong, Pandoh dams and related infrastructure. This seemed like a rerun of the catastrophic events of 1988 when disastrous floods ultimately led to unfortunate killing of the BBMB chairman.

Like in 1988 case, this year, BBMB allowed the level of Bhakra dam to go beyond the declared Full Reservoir Level of 1680 feet (as mentioned on the BBMB website <http://bbmb.gov.in/english/menu2.asp> and in the CWC weekly updates, see the latest one at: [http://www.cwc.gov.in/bulletin\(2\).pdf](http://www.cwc.gov.in/bulletin(2).pdf), both clearly state that FRL of Bhakra is 512.06 m or 1680 ft), starting from Sept 5, 2010 and reaching the peak of 1681.08 on Sept 14. By then BBMB realised that the dam was showing a tilt of 1.07 inches, exceeding what is reported as safe deflection limit of 1.03 inches. After Sept 14, the reservoir level has seen a decline to 1680.41 feet on Sept 16 (the latest date for which the level is available), still above the declared FRL. It may be noted that the Bhakra filling period is supposed to be till Sept 20 and why was the reservoir allowed to fill upto FRL two weeks before the end of filing period and why was it allowed to fill beyond FRL, till the dam started showing tilt beyond the safe limit are very important questions, but have no clear answers.

Here it may be added that parts of Rajasthan that gets water from the BBMB systems have seen below normal sowing in this kharif due to lack of adequate water releases from Punjab, so much so that Punjab CM had to recently call a meeting with the BJP leaders of Rajasthan to ensure them that adequate water will be released. So we have a disturbing situation where on the one hand the areas that were supposed to get water are not getting them and the dams that are supposed to supply the water are getting filled up beyond FRL before the due date. In case of Pong dam, the BBMB is also guilty of underperformance of power generation in August 2010, when 33.46 Million Units power was produced when in a relatively drought conditions in the same month last year, the dam generated more than double that amount at 68.46 MU. Now BBMB is forced to release water from the dam without power generation. There is clearly a lot that BBMB officials have to answer for.

In 1988 too the dam level went beyond 1680 feet, the dam showed tilt beyond safe limits, there was sudden release of 1.45 lakh cusecs when there were also releases from Pong and also there were heavy rains in the downstream areas, leading to unprecedented flood disaster in Punjab. It was possibly the events of 1988 that led BBMB to reduce the FRL of Bhakra from design FRL of 1685 to the reduced level of 1680, but BBMB needs to explain what were the reasons for this change in the first place. If the reason was the safety of the dam structure, than going beyond the safe level would certainly be considered shocking event.

One hint as to why did BBMB decided to fill Bhakra beyond 1680 feet and Pong dam on Beas river beyond the declared FRL of 1390 feet is provided by the recent press statements from the All- India Power Engineers Federation, which has been urging BBMB to raise the level of water in Bhakra and Pong dams beyond the declared FRL

of 1680 and 1390 feet respectively. However, the BBMB is supposed to be managing vital installations that have serious consequences for the safety and security of lakhs of people and can it be allowed to take such decisions in ad hoc, casual way. It is high time that we have clearly defined norms as to how the reservoirs would be operated and who will be responsible for the decisions taken in such matters, and how accountability will be fixed when wrong decisions are taken. The first step in that direction would be to have transparent sharing of information about such decisions on daily basis. This becomes even more imperative in the climate change scene when the rainfall pattern is changing with increased frequency of high intensity rainfall.

This is not the first time BBMB has been guilty of improper operation of reservoirs. Between March 15 and June 21, 2009, when there is minimum agricultural activity and water use demand for agriculture is least, level of water in Bhakra dam was allowed to be depleted from 480.61 m to 458.62 m, when actually the dam level should have gone up due to the flows from glacier melt starting from May 20. During the same period in the previous year (2008), the water level in Bhakra had gone up from 471.11 m to 482.13 m. The fall in Bhakra level in the summer of 2009 (the Pong and Ranjit Sagar reservoirs also showed similar trend in those months) then lead to a situation during monsoon in 2009 when there was serious rainfall deficit of upto 46% in North West India and farmers needed water from Bhakra acutely, but BBMB said it did not have water then. Why was the Bhakra level allowed to deplete in summer of 2009 when it should have increased? There are no plausible or official answers. One possible reason is that the period saw the national elections and the governments wanted maximum power generation during that period to give a sense of power sufficiency in the region. This was indeed a repeat of what happened also in the summer of 2004. But no questions were asked to BBMB officials, nor did BBMB feel obliged to answer any.

One of the reasons why Bhakra and Pong got filled up before the due date this year is that the dams are getting silted up at a rapid rate. One of the major contributions of the silt is coming from the large number of under construction hydropower projects in the upstream Himachal Pradesh. Each of those major projects is supposed to generate, as per their EIAs, several million cubic meters of muck. The developers there are supposed to have muck disposal plans, but the developers find it easiest and cheapest to dump the muck into the rivers, which ends up the downstream reservoirs. Neither the Pollution Control Board, nor the state or central environment ministries have the will or the capacity to monitor these rampant and well known violations. But one expected BBMB to be concerned about this. It seems even they are also not.

All this goes to show the urgent need for publicly known norms of transparency and accountability in operation of reservoirs that are like time bombs that can explode multiple times. Bhakra exploded in 1988, Ukai in Gujarat did in Aug 2006, Hirakud did in Sept 2008, Srisaillam, Tungabhadra, Upper Krishna and Damodar dams did in Sept 2009. No senior engineer has ever been punished by the government in past for wrong operation of dams. It seems we may have many more such disasters in store in future.

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