



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Companies Act, 1956)

CIN:U40100KL2011SGC027424

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ABSTRACT

Preparation of Rule curve for the five major reservoirs of KSEBL-Modifications suggested by Sri Rishi Srivastava, Director, CWC conveyed by the Deputy Director, CPMU, received after the approval of rule curve report by KSEBL and Government of Kerala- Sanctioned-Orders issued.

CORPORATE OFFICE (SBU-G/C)

BO (DB) No.375 /2020 (DGC/AEE-II/ Dam Safety/2018) Thiruvananthapuram, dtd, 03.06.2020

- Read:-
- 1) B.O(FTD)No444/2019(DGC/AEE-II/DamSafety/2019) dated 03.06.2019.
 - 2) G.O.(Rt)No.90/2019/POWER dated 15.06.2019.
 - 3) Note No.CE-DS/EAP-RM/RM/2018-19/579 dtd 24.07.2019 of the Chief Engineer CE(DS&DRIP)
 - 4) Note No. DGC/AEE-II/ Dam Safety/2018 dtd.21.05.2020 of the Chairman & Managing Director
 - 5) Proceedings of the 53rd meeting of the Board of Directors held on 25.05.2020 vide Agenda Item No. 15-05/2020

ORDER

The Chief Engineer(Civil -Dam Safety & DRIP) as per note read as 3rd above has reported that in the backdrop of unprecedented extreme rainfall occurred in August 2018 in Kerala, it was decided by KSEBL to prepare Emergency Action Plans for the dams and to conduct a study on reservoir water level management for KSEBL's selected dams. Accordingly a team was constituted as per the Office Order No. 538/2018 (DGC-AEE-II/EAP/2015), dated 29.09.2018. A four member committee was also constituted as per the Office Order (CMD) No. 628/2018 (DGC-AEE-II/Flood/2018) dated 20.10.2018 to study and prepare 'Rule Curves' for the 5 major reservoirs of KSEBL.

The operational strategy for the major reservoirs of KSEBL were updated by reviewing the rule levels. The Rule levels of Idukki, Idamalayar, Kakki and Banasurasagar dams were fixed so as to create some dynamic flood cushion for moderating the floods of lower return periods, particularly in the early periods of monsoon. Rule levels of Idukki, Idamalayar and Kakki reservoirs were submitted to the CWC after complying their suggestions, on 11/04/2019.

The rule levels for the reservoirs were developed considering the suggestions of the CWC, in response to the draft report submitted to CPMU and based on the discussions with Sri Rishi Srivastava, Director, CWC. Though the excel files for arriving at rule levels and procedure adopted for working out various parameters were submitted to the CWC after complying with their comments on 11/4/2019, the response from CWC was obtained on 4/6/2019 without any specific suggestions. Based on the recommendations of CWC in their study report on 'Kerala Floods of August 2018' to have rule curves for

major reservoirs in the state, the KSEBL and Government were keen to finalize the rule levels before May 31st, i.e before the onset of monsoon.

Accordingly KSEBL approved the rule levels of major reservoirs as per BO read 1 above and decided to take up the matter with the Government. The copy of the approved report on rule curve was furnished to the CWC on 4/6/2019. The Government of Kerala approved the rule levels of major reservoirs submitted by KSEBL as per GO read 2 above and ordered to follow the Rule levels until further directions from Government. The Board in its 47th meeting held on 29.06.2019, vide Agenda No.21-6/2019 had noted emergency action plan approved by the Central Water Commission for 21 dams of KSEBL and also the Rule curve for Idukki, Idamalayar, Kakki and Banasurasagar approved by Government of Kerala.

The Deputy Director, DRIP, CPMU forwarded a new set of Rule Levels for Idukki, Idamalayar and Kakki reservoirs, developed by Shri. Rishi Srivastava, Director, CWC, on 1/7/2019.

The Director, CWC has adopted the actual generation series of the year 1982-83 (i.e 90% dependable inflow year), whereas KSEBL has adopted the scheduled generation pattern furnished by SLDC, Kalamassery. In the active monsoon period, the rule levels fixed by the Director, CWC are in the conservative side than KSEBL. This has been adopted in KSEBL from 08/08/2019.

Also the CWC has directed to adopt a similar approach for Banasura Sagar reservoir. The only difference in the finding of the CWC is that they adopted a more conservative approach in arriving at rule levels for the reservoirs, lowering the target level (fixing the target level at the end of October against November 20th) at the end of monsoon by a considerable margin from the current FRL.

The modified levels as suggested by the CWC are furnished below:

DATE	IDUKKI RESERVOIR UPPER RULE LEVELS (feet)	IDAMALAYAR RESERVOIR UPPER RULE LEVELS (m)	KAKKI RESERVOIR UPPER RULE LEVELS (m)	BANASURASAGAR UPPER RULE LEVELS (m)
June 10th	2373.00	161.00	975.36	767.00
June 20th	2373.00	161.00	975.36	767.00
June 30th	2373.00	161.00	975.36	768.00
July 10th	2375.33	161.50	975.36	771.00
July 20th	2377.95	161.75	975.36	773.50
July 31st	2380.58	162.50	975.36	773.50
Aug 10th	2383.53	163.00	975.75	774.00
Aug 20th	2386.81	163.50	976.00	774.50
Aug 31st	2390.09	164.00	976.20	774.50
Sep 10th	2392.55	165.00	976.40	775.00
Sep 20th	2395.01	166.00	976.60	775.00
Sep 30th	2396.94	166.30	976.91	775.00
Oct 10th	2397.78	166.60	977.95	775.00
Oct 20th	2398.86	166.80	978.83	775.60
Oct 31st	2399.31	167.00	979.84	775.60
Nov 10th	2399.79	168.50	980.56	

Nov 20th	2400.03	168.50	981.00	
Nov 30th		168.50	981.00	

The matter of adopting the modified rule levels as suggested by the CWC was placed before the Board of Directors as per note read as 4th paper above. The Chairman and Managing Director informed that the rule levels for Idukki, Idamalayar and Kakki reservoir were modified by CWC, and Banasurasagar levels has been prepared adopting the approach taken by CWC. The Board noted that the only difference in the approach of CWC is that they have adopted a conservative approach in arriving at rule levels for the reservoirs, lowering the target level at the end of monsoon by a considerable margin from the current FRL. The Board was also informed that the revised rule levels were approved by Government of Kerala vide order No. G.O.(Rt).NO.64/2020/POWER dated 21.05.2020 . Considering that the modified rule levels suggested by the CWC are more in the conservative side than the previous levels, the Board

RESOLVED to give approval to the modified rule levels, for the operation of Idukki, Idamalayar, Kakki and Banasurasagar reservoirs.

Orders are issued accordingly.

By Order of the Director Board

Sd/-

Lekha .G
Company Secretary i/c

To

The Chief Engineer (Civil-Dam Safety &DRIP)

Copy to:

1. Financial Adviser/ The Chief Internal Auditor
2. The RCAO/RAO 3. The Deputy Chief Engineer(IT)
4. TA to CMD /TA to Dir(GC) /Dir(GE&SCM) /Dir(T,SO,S&REES) / Dir(D,IT&HRM)
5. PA to Dir (F) / Company Secretary i/c
6. FC Supt/ Librarian
7. Stock file / File

Forwarded / By Order


Assistant Executive Engineer