

GOVERNMENT OF MAHARASHTRA  
Irrigation Department,  
Government Circular No.  
Mantralaya, Bombay-400 032.  
Dated : 20-8-1994.

GOVERNMENT CIRCULAR MEMORANDUM.

Preamble.

For irrigation outlet or Irrigation Cum Power outlet, two types of gates viz. emergency gates and service gates are provided. The purpose of service gate is to control discharge through outlet as and when required. However the emergency gate is required when the service gate is required to be repaired.

As per the prescribed criteria for design and operation, the emergency gate is operated either fully closed or fully opened. The same is totally in open position, when the service gate is in operation and totally closed position during service gate repairs.

For Irrigation cum power outlets which are common in the State where upstream control is through emergency gate the Downstream control through service gate which is provided later. In such cases for operation of outlets it is observed that, in many cases the emergency gate is operated as a service gate, in partially opened or closed condition, even though the downstream control structures such as service gate etc. are not completed. In such cases, the emergency gate cannot be closed and problems of closing the outlet results in damages both downstream canal C.D. Work embankment, ~~XXXXXXXXXX~~

CIRCULAR: In view of the above consideration the Government is pleased to issued the norms for the operation of Emergency gate.

As per the conventional practice in use, the emergency gate as name implies, is to be operated only in emergency conditions to stop discharge and facilitate any repairs on the service gate. Emergency gate is thus kept either fully opened or fully closed and not used for partial openings.

Emergency gates, with above intention are not generally provided with hoists which can exert positive push. These gates are lifted up with hoist, with drum and wire rope arrangements. These gates are designed to closed on either own weight, assisted if necessary by ballast which is required to be put in the gate at the appropriate location. The provision of ballast which has been mentioned in I.S. 4622-1978 at 4.10 page 17 is reproduced below.

"(4.10.1.) Suitable ballast in the form of dead weight shall be added for making the gate self closing, when necessary. The ballast shall be in the form of cast iron/pig iron billets, concrete or any other suitable material and shall be secured firmly in between the webs of the horizontal girders. Precaution shall be taken to ensure that the ballast is not dislodged from it's position during the gate operation.

(4.10.2.) The effect of dead weight of the ballast on the horizontal girders shall be analysed.

(4.10.3.) The centre of gravity of the gate shall be determined after due consideration of the location of the ballast".

Hydraulic Hoisting Arrangement.

Though the emergency gate as name implies, it is to be operated in emergency condition on the dam, it is many times observed that the emergency gate is not closed or opened immediately; causing difficulties on the downstream. It may be due to improper hoisting arrangement ; faulty operation or else. It is presumed in emergency gate operation that it should be closed or opened within atleast 90 seconds. In view of this hydraulically operated hoisting arrangement to be considered in place of presently used rope and drum type hoisting arrangement by C.D.O. and Mechanical Organisation