MEGHALAYA POWER GENERATION

CORPORATION LIMITED

GUIDELINES FOR RELEASE OF WATER THROUGH THE GATES OF THE UMIAM –UMTRU, STAGE-III DAM

2025

GUIDELINES FOR RELEASE OF WATER THROUGH THE GATES OF THE UMIAM-UMTRU STAGE-III DAM.

1.0- Introduction

1.1- Dams have been constructed across the rivers to create artificial Lakes/Reservoirs for storing of water which is being utilized for generation of electricity, irrigation, drinking water etc. Sometimes due to heavy rain during rainy season, the discharge in the river can be so high that the water level in the Reservoir, if not controlled, can rise beyond the FRL. In such cases, the excess water from the Reservoir has to be released in a gradual and regulated manner through the Radial Gates of the Dams, to ensure that people on the downstream are not affected by the sudden rise of water level. This will also safeguard the Dams from being overtopped, which may endanger the abutments from being washed out, thereby causing loss of lives and properties.

Water from the Reservoir may also be required to be released through the Radial Gates at any time of the year as may be required by the Owner or due to emergency/crisis that may arise due to various reasons.

In view of this, all Radial Gates of Dams are required to be in operational mode 24x7.

2.0- Requirement of Guidelines for Radial Gates

2.1- The Guidelines for Operation of Radial Gates is needed by all entity/owner of Dams and Reservoirs as it is the guiding instrument at any time whenever Gates are required to be operated to release water from the Reservoir due to Flood, Sabotage, Natural disaster or any other crisis. The Guidelines for Operation of Gates also guides the Operator of the Radial Gate the process of releasing of water from the Reservoir in such a manner that;

(i) The Dams and other related Hydraulics Structure are not put in any danger.

(ii) The Reservoir is allowed to retain optimum quantity of water for economic generation of electricity.

(iii) It mitigates the damage of flood downstream of the Dams.

2.2- The Guidelines help the owner to maintain the Radial Gates in operational mode 24x7.

2.3- The Guidelines for Operation of Radial Gates also provide;

(i) Technical details of the Dams, the Reservoir and the Radial Gates.

(ii) Guidelines for inspection, monitoring and reporting of the healthiness of the Dams, Reservoir and Radial Gates.

(iii) Guidelines to the in-charge in regard to maintenance of the Gates, including Operation of the Gates to facilitate release of water from the Reservoir whenever required.

(iv) It also contains names, addresses and contacts of all stake holders of the Dams.

3.0- Kyrdemkulai Reservoir and requirement for Control Release of Water through the Gates:-

The Kyrdemkulai Reservoir received water from the catchment of the Umtru River and from the Tail Race of Umiam Stage-II Power Station. It has one Concrete Dam and is linked to the Nongmahir Forebay and Stage-III Power Station by the underground Tunnel. Kyrdemkulai Reservoir is a small manmade Lake in the State of Meghalaya and can store about 6.78 Million Cubic Meter of water. Downstream of the Concrete Dam, the River runs through Ravines of about 13.05 Km before it reach the Umiam-Umtru Stage-IV Reservoir. On its way there are few villages, though there is no settlement on its banks, but there are always activities of people along the stretch of this River. It is for this reason that any release of water from the Umiam-Umtru Stage—III Concrete Dam has to be properly planned, estimated, and regulated so as to avoid any untoward incidents.

Since the Reservoir capacity is very small, and the requirement of frequent release of water through the Gates during Monsoon as well as during Non-monsoon period, issuing the notification for release of water is not practicable; however, warnings in the form of blowing the Siren, Telephone/SMS may be issued to stake holder to avoid untoward incidents.

4.0- Name, Address & Contacts of the Owners of the Dams

4.1- Name&Address: Meghalaya Power Generation Corporation Limited,
Lumjingshai, Shillong-793001,
East Khasi Hills District, Meghalaya.

4.2- Contacts of responsible Persons:-

Proforma-1

Sl. No	Names & Designation	Address		Telephone No.	Mobile No.	E-mail ID
		Office	Residence	Office	Residence	
1	2	3	4	5	6	7
1.	Shri. Sanjay Goyal , IAS, Chairman-cum-Managing Director	Me.E.C.L, Lumjingshai, Shillong 793001.	_	0364-2590367 0364-2590638 (F)		sanjaygoyal.ias@gmail.com
2.	Shri Richard Yanthan, IAS, Director Corporate Affairs	Me.E.C.L, Lumjingshai, Shillong 793001.	_	0364-2591992		
3.	Shri. K. Thangkhiew, Director (Generation) MePGCL, Shillong.	Me.P.G.C.L, Lumjingshai, Shillong 793001.	_	0364-2591406		pce_meecl@yahoo.co.in
4.	Shri. K.Thangkhiew Chief Engineer(C), i/c, HP&HC, MePGCL, Shillong.	Me.P.G.C.L, Lumjingshai, Shillong 793001.	_	0364-2590113	7005093571 9856370407	cehphc.mepgcl@gmail.com
5.	Shri. E. Marap Chief Security Officer	Me.E.C.L, Lumjingshai, Shillong 793001.	-	-	8974158543	-
6.	Smti. L. Kharkamni Executive Engineer (C), Dam Safety Cell, MePGCL, Shillong.	O/o Chief Engineer(C), HP&HC, Me.P.G.C.L, Shillong 793001	Mawlai Umjaiur, Shillong-793008	0364-2590226	9774820349	eedamsafetymsh@gmail.com

5.0- SALIENT FEATURES:-

5.1- DAMS:-

Type of Dam: *CONCRETE GRAVITY*

Height of Dam: *26.36 m*

Length of Dam: *106.70 m*

F.R.L / Max W.L : *2230ft/2235 ft.*

M.D.D.L : *2215 ft/675.13 m*

Crest Level: *2205 ft. /672.08 m*

Top of Gates: *2230.87 ft/679.96 m*

Spillway capacity: *60,000.00 cusecs*

5.2- ***RESERVOIR:-***

Water Spread Area at FRL: *0.80 Sq.Km*

Catchment Area: *150.00 Sq.Km*

Storage Capacity:

(i) Live Storage: *2.78Mcm*

(ii) Dead Storage: *3.70Mcm*

(iii) Overall Storage: *6.78 Mcm*

5.3- ***RADIAL GATES:-***

No. of Gates: *3 Nos.*

Types: *Radial Gates (Tainter)*

Size: *11M X 7.62M (each gate)*

Mode of operation: *Electrically operated*
(Provision available for Hand operation in emergency cases)

Brake:- *Hydraulic operated brake*

Company made: *TEXMACO*

Gate Operation:-

Minimum: *1 gate and 1.00 ft. Opening:*

Maximum: *3 gates and 30.00 ft. Opening each:*

6.0- Inspection, Testing of Radial Gates including Gate Reporting.

6.1- *Components of Radial Gates*

I) GATES:

a) Gate leaf: *Curve face plate*

b) Seal seat: *Stainless steel*

II) HOISTING ARRANGEMENT:

a) Drum Hoist: *Worm gear arrangements with drum*

b) Ropes: *38 mm*

c) Capacity of motor: *7.5 hp each*

d) Type of brake: *Hydraulic operated brake*

e) Hoisting Capacity of Single Gate: *35 tonne each*

6.2- All the Radial Gates including its components and accessories are to be inspected and tested at least once in a month.

6.3- All the Radial Gates are to be operated at least once in a month. If stop log gate is available then lifting of gates can also be carried out.

6.4- All electrical components of the Radial Gates are to be checked and tested at least once in a week.

6.5- All the inspection and testing cited above are to be done according to the operation manual of the Radial Gates or as directed by the Engineer in charge. The inspection period should be periodical.

6.6- **The Dams Safety Unit** shall inspect all Gates and their components at least once before the monsoon period, and during operation of the Gates as per the Guidelines of the Central Water Commission (CWC), Government of India.

6.7- All the reports of inspection, testing are to be forwarded to the Engineer in charge for his/her necessary action as may be required.

6.8- All materials, equipment required for Gate Operation are to be kept in good and working condition. They are to be checked and inspected at least once in a month from time to time.

7.0- Maintenance and Upkeep: -

7.1- All Radial Gates are to be in operational mode 24x7.

7.2- All repairing and maintenance work including greasing, oiling etc. related to the Radial Gates are to be taken up on top priority.

7.3- All reports of inspection and testing of Radial Gates and its components indicating any needs of repairing, refurbishing, renovation, modification etc. are to be taken up by the Engineer in charge without delay.

8.0- Guidelines for Recording of Information's: -

8.1- All messages incoming and outgoing relating to release of excess water through the Gates are to be recorded in the register as per the following Performa.

8.1.1- **In coming Message: -**

Performa - 2

Sl. No.	Date	Time	Senders name including Contact No.	Content of the Message	Whether the Message was send to higher authority	Name & Signature of receiver	To whom forwarded	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1.								
2.								
3.								
4.								
5.								

8.1.2- **Outgoing Message: -**

Performa - 3

Sl. No.	Date	Time	To whom sent including Contact No.	Content of the Message	Name & Signature of sender	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**
1.						
2.						

The messages both incoming and outgoing are to be compiled and forwarded to the higher authority on daily basis.

9.0- Contact Persons for Umiam-Umtru, Stage-III Reservoir, Kyrdemkulai:-

The following persons are to be contacted through Telephone, SMS, E-mail before the release of water from the Reservoir.

9.1- **In-charge of the Dams: -**

Proforma - 4

Sl. No.	Names & Designation	Address		Telephone No.	Mobile No.	E-mail ID
		Office	Residence	Office		
1	2	3	4	5	6	7
1.	Shri C. Pariat, Superintending Engineer (C),HSM, Me.P.G.C.L, Shillong.	Superintending Engineer (C),HSM, Me.P.G.C.L, Lumkshaid, Shillong-793002	_	0364-2547878	8731096843	hcmshp16@gmail.com
2.	Shri. C. Myria Executive Engineer (C), HSMD, Me.P.G.C.L, Umiam	EE, HSMD, MePGCL, Umiam	-	_	7085950790	eehsmd@gmail.com
3.	Shri. S. Lyngdoh AEE, HSMSD, Kyrdemkulai	AEE, HSMSD, MePGCL, Kyrdemkulai	_	_	6909 089 788	aee.hsmsdkdm@gmail.com
4	Shri. Paul. Lyngdoh AE, HSMSD, Kyrdemkulai	AEE, HSMSD, MePGCL, Kyrdemkulai	_	_	7085401858	
5.	Shri. K. Nongbet, Junior Engineer HSMSD, Kyrdemkulai	JE, HSMSD, Stage-III, MePGCL, Kyrdemkulai	_	_	9774591869 8794169380	_
6	Shri. P. Momin Security In-charge of Zero Point	Stage-III Dam	–	_	9862696681	–

9.2- **Contacts of important State Government, Officials including Police & Other Stake Holders.**

Proforma - 5

Sl. No.	Names & Designation	Address		Telephone No.	Mobile No.	E-mail ID
		Office	Residence	Office		
1	2	3	4	5	6	7
1.	Shri. D. P. Wahlang, IAS, Chief Secretary and State Vigilance Commissioner	Room no 316 Meghalaya Secretariat Building Shillong 793001		0364-2224801 0361-225978 (Fax)		csomeg@nic.in
2.	Shri Abhilash Baranwal, IAS, Deputy Commissioner & Chairperson (DDMA)	O/o the Deputy Commissioner, Ri- Bhoi District, Nongpoh		03638-232221 Fax 03638-232503		dc-rb-meg @nic.in
3.	Shri. M. B. Tongper, MCS, Addl. Deputy Commissioner & CEO (DDMA)	O/o the Deputy Commissioner, Ri-Bhoi District, Nongpoh		Fax 03638-232503	-	-

4.	Shri. Vivekanand Singh Rathore, IPS	O/O the Superintendent of Police :: Ri-Bhoi District HQ : Nongpoh, Meghalaya Pin Code-793102		03638-232304 Fax 03638-232230	-	sp.rbmeg@nic.in
5.	Shri. Rodrick Nongrum, BDO Umling C&RD Block	Umling C&RD Block			9615740387	megumlingblock@gmail.com
6.	Shri. Raja Brahma,BDO Umsning C&RD Block	Umsning C&RD Block			8259074759	meg-umsning@nic.in
7.	Shri. Dr. C. J. K. Warjri. BDO Bhoirymbong C&RD Block	Bhoirymbong, C&RD Block			8787676324	bhoirymbong.crd.block@gmail.com
8.	Directorate Information and Public relations,	Lower Lachumiere, Shillong-793003		0364-2224617		diprmeg@gmail.com
9.	Shri. Derrick. P. Pariat, Head of the Programme	Laitkor, NH 44, Shillong, Meghalaya 793010, India.		0364-2580319	9436105194	ddkshillong@gmail.com
10.	All India Radio, Shillong - 793001	Lower Lachumiere, Shillong-793003		0361- 2224153 Fax 0361-2224153		airshill@gmail.com airshill@air.rg.in
11.	The DC/Adjutant For Commandant 1st Bn NDRF, Ministry of Home Affairs,	Patgaon, PO:Azara, Guwahati, Assam-781017		0361-2840284	9435545949 (official mobile number) Control room no.- 7637011337 9435417246	assam01-ndrf@nic.in

9.3- **Contacts of Prominent Persons residing along the River Downstream of the Stage-III Dam who may be affected due to release of excess water through the Gates of the Dam.**

Proforma – 6

Sl.No	Name of the Villages	Designation	Contact No.
1.	Nongdiengngan	Rangbah Shnong	8413070269
2.	Umdiker	Rangbah Shnong	9862790312
3.	Umshorshor	Rangbah Shnong	7005914486
4.	Nongmahir	Rangbah Shnong	6009296228
5.	Mawpyrhut	Rangbah Shnong	7005885645
6.	Umtham	Secretary Shnong	9856293863
7.	Wahlakhar	Rangbah Shnong	9366792978
8.	Nongkseh	Rangbah Shnong	8730083714
9.	Sohjarang	Rangbah Shnong	8118937928

10.0- Preparation, Warning& Release of Water: -

Preparation, Warning and release of water from the Reservoir may be done under two conditions i.e., Normal condition and emergency/crisis condition.

10.1- **Under Normal conditio**n: - Under this condition the water may have to be released during Monsoon Period due to high flood or during Non - Monsoon Period as may be required.

10.1.1-During Monsoon Period: -

(a) When the Water Level of Kyrdemkulai Reservoir is between the Level 2229 ft. (679.39 m) to 2230ft. (679.70 m), warning of likely release of the excess water should be issued.

(b) All materials, equipment required for Gate Operation are to be checked and made ready for operation.

(c) 24 hours operational duty is to be enforced during the Monsoon period or as soon as the Water Level reached 2225 ft. (678.18 m), and whenever water need to be release from the Gates.

(d) Preparation for release of excess Water when water level reaches 2217ft. (675.74 m).

(i) The inflow of the water into the reservoir is to be calculated every hour and the same is to be informed to the higher authority through SMS, Whatsapp, Phone etc.

(ii) If the inflow is very high, the inflow calculation should be done in half hourly basis.

(e) Release of Excess Water: -

When the concerned authority authorized release of water through the Gates the following actions are to be taken:

(i) The decision to release water shall be taken at least one hour before the actual operation of the Radial Gates and actual release of water. The initial decision to release water through the Gates is to be taken by the Executive Engineer In-charge with in consultation with the controlling Officer, Chief Engineer (C), HP&HC, Me.P.G.C.L, Shillong and the Director (Generation), Me.P.G.C.L, Shillong.

(ii) The Siren installed on the deck of the gates is to be blown for a duration not less than 30 (thirty) minutes before releasing of water.

(iii) Simultaneously, information of release of water should be sent through Telephone, SMS, E-mail, Whatsapp, etc. to all concerned and stake holders as recorded in **Performa 1, 4, 5& 6** and record the same as indicated in Performa **2 & 3.**

(iv) Half an hour after blowing the Siren, initially one gate can slowly be opened and may be raised upto the maximum height of 1 (one)ft.

(v) In case, there is requirement to enhance the release of water due to high inflow, another gate may be opened. The Gates may be increased by 1 ft. one gate every half an hour or hourly as the case may be and as decided by the concerned authority.

(vi) In case of the decrease of inflow into the Reservoir and other consideration the size of opening of the Gates should be reduced accordingly.

(vii) The decision to increase or decrease the size of opening of the gates or closing the gates may be taken by the Officers in-charge of the Dams in the consultation with the higher authority.

(viii) In all circumstances, water should not be allowed to overtop the Radial Gate or the Dams.

(ix) The water level of the Reservoir should not be allowed to go beyond the maximum water level of the Reservoir.

(x) In all circumstances the water level in the reservoir should always **maintain at FRL ie 2230 ft** except when **the inflow is very high the water level may be kept 1 (one) ft below FRL**

10.1.2- During Non - Monsoon Period: -**Non-Monsoon Period means the period when the water level of the Reservoir is below (2230 ft.) And the inflow of water into the Reservoir is not threatening to over top the Dams.**

10.1.2.1- Under Normal condition the water is usually not required to be release through the gates during Non-Monsoon Period. However, there may be times that release of water may have to be done during this period to enable the owner to take up necessary repairs of any Hydraulic Structures or to feed additional water that may be required to run the machine of Stage-IV Power Station, and for any other reasons. Such release needs the approval of the higher authority, and in consultation with the Chief Engineer (Generation) and SLDC.

When the authority concerned decided to release water through the Gates under any of this condition, the following action is to be taken: -

(a) The quantity of water to be release, including the rate of discharge through the gates and the time period of release are to be properly calculated and planned to avoid unwanted submergence along the river course in the downstream of the Dam.

(b) The Warning will be notified by the In-charge through sms and in writing to the District authorities and stakeholders.

(c) A copy of the notification of the warning for likely release of excess water from New Umtru Dam should be sent to all Officers concerned within Me.E.C.L, Me.P.G.C.L, Me.P.D.C.L, Me.P.T.C.L and also to (1) Deputy Commissioner, Nongpoh (2) Superintendent of Police, Nongpoh (3) BDO, Umsning,Jirang, Umling (4) DIPR (5) Print & Electronic Media, and (6) All Concerned and stake holders residing or undertaking activities along the Umtrew River downstream of the New Umtru Dam to provide advance information and to restraint from any activities along the bank of the Umtrew river**.**

(d) All materials, equipment required for Gate Operation are to be checked and made ready for operation.

(e) One hour before release of water through the Gates, a warning is to be sounded by blowing the siren installed on the Deck of the Gates. Simultaneously information of release of water should be sent through Telephone, SMS, E-mail etc. to all concerned and stake holders as recorded in **Performa 1, 4, 5& 6**and record the same as indicated in**Performa2 & 3.**

(f) At the end after blowing the siren, initially one gate can slowly be opened and maybe raised up to the maximum of 1ft.

(g) After the initial release of one hour, another gate may be opened. The size of opening of the Gate may be increase by 1ft. for 1 (one) Gate everyone hour upto the required size of opening as per schedule.

(h) All Gates should be closed as soon as the targeted quantity of water is released or the required water level of water in the Reservoir is achieved.

(i) In all circumstances the water level in the reservoir should always maintain at FRL ie 2230 ft during non-monsoon period. **The office of the Assistant Executive Engineer (C), HSMSD, MePGCL, Kyrdemkulai which directly deals with maintenance of water level shall strictly adhere to the Guidelines.**

10.2.0- Under Crisis/Emergency condition: - Water may be released at any time of the year in case of the emergency/crisis situation that may arise due to;

(a) Sudden and unprecedented heavy and very heavy rainfall in the catchment causing very high and unexpected flooding of the Reservoir.

(b) Breaking of the Dam due to structural failure, earthquake, sabotage and other.

(c) Failure of other hydraulics structure like Tunnel, Dykes and other.

(d) Any other reasons that require urgent release of water.

10.2.1- The Engineer in charge, after satisfying his/her self that the crisis/emergency condition warranted urgent release of water through the Gates of the Dams will immediately inform the controlling Officers and Chief Engineer (C), HP&HC, who will order for immediate release of water and inform the same to the higher authority of the Corporation. When the decision to release water is communicated (verbally or officially) the following steps are to be taken;

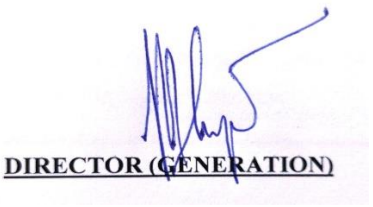
(i) The Siren installed on the deck of the gates is to be blown for duration not less than half an hour.

(ii) Simultaneously information of release of water should be sent through Telephone, SMS, E-mail, Whatsapp, etc. to all concerned and stake holders as recorded in **Performa 1, 4, 5& 6**and record the same as indicated in **Performa2 & 3**

(iii) At the end after blowing the siren, initially one gate can be opened and may be raised upto the maximum of 1ft.

(iv) Depending on the situation of emergency/crisis the size of opening of the Gates, the number of gates and the Discharge of water to be released will be decided by the Chief Engineer (C), HP&HC, Me.P.G.C.L, in consultation with Director (Generation) Me.P.G.C.L, Shillong and to accordingly intimate the CMD, Me.P.G.C.L.

(v) During emergency/crisis situation the in-charge and other higher official are to be present at the place/site of event (Ground Zero).



DIRECTOR (GENERATION)