

MAHARASHTRA STATE ELECTRICITY TRANSMISSION
COMPANY LIMITED

MAHARASHTRA STATE LOAD DISPATCH CENTRE

SCHEDULING AND DISPATCH CODE

(Pursuant to section 33 of the State Grid Code)

Operating Procedure No. MSLDC-OP 105

Draft for approval

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Overall Responsibility	SE (Operation) MSLDC Kalwa
Scheduling Responsibility	Executive Engineer (Operation) MSLDC Kalwa
Real Time Operation	Shift In-charge MSLDC, Kalwa
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SCHEDULING AND DISPATCH CODE

1. Background

.1.1 The Maharashtra State Electrical grid shall be operated as an integrated power pool for which the Maharashtra State Load Dispatch Centre (SLDC) shall have the total responsibility for the following functions:

- i) Scheduling / dispatching the generation within the state (including the generation of the embedded licensees in the state)
- ii) Monitoring and appropriately regulating the demands of the Distribution companies in the State
- iii) Monitoring and Scheduling the drawals from the ISGS
- iv) Revision of all Scheduling and despatching instructions and all interstate drawals to meet emergency conditions

1.2 The State Grid Code (Part E) provides for a Scheduling and Dispatch Code to be prepared by MSLDC. As per the Clause 33 of the State Grid Code,

the Scheduling and Dispatch Code shall contain provisions with respect to the following:

- (i) actions and responsibilities of the Maharashtra State Load Dispatch Centre (MSLDC) and Users in preparing and issuing generation/supply schedule on daily basis;
- (ii) modality of the flow of information between the Maharashtra State Load Dispatch Centre and Users for the purpose of scheduling and dispatch;
- (iii) modality of the flow of information between the Maharashtra State Load Dispatch Centre and the Transmission Licensees for the purpose of scheduling and dispatch;
- (iv) modality of the flow of information between the Maharashtra State Load Dispatch Centre and the Western Regional Load Dispatch Centre for the purpose of scheduling and dispatch:

The State Grid Code further specifies that the provisions of the Scheduling & Dispatch Code shall be consistent with the Scheduling and Dispatch Code under IEGC specified by CERC under clause (h) of Section 79 of the Act

Further, it will be in conformity with the detailed order of the Honourable Commission dated 17th May 2007 for Case No. 42 of 2006 in the matter of “Introduction of Availability Based Tariff Regime at State level within Maharashtra and other related issues” () wherein the scheduling process and the timeline have been illustrated in detail.

Section 3.2 of the said order authorises the MSLDC (OD) to take all decisions with regard to the despatching of stations after evaluating all possible network parameters/ constraints/ congestions in the transmission network and in the eventuality of any aberration in the network,

This Scheduling and Dispatch Code has been prepared to comply with provisions of the State Grid Code and Intra- State ABT Regulations.

2. Definitions

In Scheduling & Dispatch Code, unless the context otherwise requires, the words/expressions mentioned below shall have meaning as assigned hereunder:

- (a) “Act” means the Electricity Act, 2003 (36 of 2003), including amendments thereto;
- (b) “Captive Power Plant (CPP)” means a power plant set up by any person to generate electricity primarily for his own use and includes a power plant set up by any co-operative society or association of persons for generating electricity primarily for use of members of such cooperative society or association;
- (c) “Commission” means the Maharashtra Electricity Regulatory Commission;
- (d) “Demand” mean Active Power in MW and Reactive Power in MVAR of electricity unless otherwise stated;
- (e) “Dispatch Schedule” means ex-power plant net MW and MU output of a generating station, scheduled to be exported to the Grid from time to time;
- (f) “Distribution Licence” means a Licence granted under Section 14 of the Act to distribute electricity
- (g) “Drawal Schedule” means the ex-power plant MW and MU scheduled to be drawn by Distribution Licensees/ Discom from Intra-State transmission system from time to time;
- (h) “Ex-Power Plant” means the net MW/MU output of a generating station at power plant-bus, after deducting auxiliary consumption and transformation losses;
- (i) “Forced Outage” means an outage of a Generating Unit or a transmission facility due to a fault or other reasons, which has not been planned;
- (j) “Independent Power Producer (IPP)” means a generating company not owned/ controlled by the Central/State Government or not a captive power plant;

- (k) “Indian Electricity Grid Code (IEGC)” means the grid code specified by the CERC under sub section 1(h) of Section 79 of the Act;
- (l) “Inter-State Generating Station (ISGS)” means a Central/other generating station in which two or more than two states have a share and whose scheduling is to be coordinated by RLDC;
- (m) “Intra State Generating Station (InSGS)” means a generating station connected to intra-State Transmission System whose scheduling is done by MSLDC;
- (n) “Inter State Transmission System (ISTS)” includes any system for the conveyance of electricity by means of a main:
 - (i) transmission line from the territory of one State to another State
 - (ii) conveyance of energy across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-state transmission of energy
 - (iii) Transmission of electricity within the territory of State on a system built, owned, operated, maintained or controlled by CTU.
- (o) “Intra-State ABT Regulations” refers to the order issued by the MERC in the matter of ‘Introduction of Availability Based Tariff Regime at state level within Maharashtra and other related issues’ on 17th May, 2007. (case no. 42 of 2006)
- (p) “Intra-State Transmission System” (InSTS) means any system for conveyance of electricity by transmission lines within the area of the State and includes all transmission lines, sub-stations and associated equipment of transmission licensees in the State excluding inter-state transmission system;
- (q) “Licensee” means a person who has been granted a licence under Section 14 of the Act;
- (r) “Load” means the MW/MU consumed by a utility/ installation;
- (s) “Operation” means a scheduled or planned action relating to the operation of a System;
- (t) “Net Drawal Schedule” means the drawal schedule of a User after deducting the approved transmission losses;
- (u) “Open Access” means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensees or consumer or a person engaged in generation in accordance with regulations of the appropriate Commission;

- (v) “Regional Power Committee (RPC)” means a Committee established by resolution of Central Government for a specified region for facilitating the integrated operation of the power system in that region;
- (w) “Regional Grid” means the entire synchronously connected electric power network of the concerned Region, comprising of ISTS, ISGS and intra-state systems;
- (x) “Regional Load Dispatch Centre (RLDC)” means the Centre established under sub-section (1) of Section 27 of the Act;
- (y) “Share Percentage” means share of a beneficiary in a ISGS notified by Government of India or as agreed to in the agreement between ISGS and its beneficiaries;
- (z) “Special Energy Meter” or SEM means such meters, of not less than 0.2 class accuracy, as are capable of:-
 - (i) recording time-differentiated measurements of active energy and voltage differentiated measurement of reactive energy, at intervals of fifteen (15) minutes;
 - (ii) storing such measurements for not less than forty-five (45) days; and
 - (iii) communication of such measurements at such intervals as maybe required by the State Load Dispatch Centre for balancing and settlement of energy transactions;
- (aa) “State Grid Code (SGC)” means the grid code specified by the MERC under sub section 1(h) of Section 86 of the Act;
- (bb) “Maharashtra State Load Dispatch Centre (MSLDC)” means the Centre established under sub-section (1) of Section 31 of the Act.
- (cc) “Time Block” means block of 15 minutes each for which Special Energy Meters record specified electrical parameters and quantities with first time block starting and 00.00 Hrs.
- (dd) “Transmission License” means a Licence granted under Section 14 of the Act to transmit electricity.
- (ee) “Transmission Open Access User” means a person who has been allotted transmission capacity rights to access an intra-state transmission system pursuant to a Bulk Power Transmission Agreement.
- (ff) “User” means a person including in-State Generating Stations, Distribution Licensees Consumers of the Distribution Licensees directly connected to intra-

State transmission system and persons availing of Open Access, who are connected to and/or use the intra-State transmission system. The term User for the purpose of this Code shall also include in-State Generating Stations which are connected to the Distribution System of a Distribution Licensee.

Words or expressions used herein and not defined shall have the meanings assigned to them under the Act.

3. Objectives

The Scheduling and Dispatch Code has been prepared to facilitate MSLDC in discharging its responsibilities as per the provisions of State Grid Code, the Scheduling and Dispatch Code under IEGC and Intra-state ABT Regulations. The Code identifies roles and responsibilities of Users for preparation and finalisation of the following by MSLDC:

- A day-ahead generation availability schedule
- A day ahead drawal schedule
- A load shedding schedule, if required

4. Scope

This code deals with the procedures to be adopted for scheduling of the generating stations connected to InSTS and assistance in scheduling of inter-State generating stations (ISGS) through WRLDC as per IEGC and net drawal of distribution licensees, open access customers on a daily basis. This code sets down the procedure for the flow of information between MSLDC and WRLDC, between MSLDC and InSGSs and between MSLDC and distribution licensees of the InSTS system.

The Scheduling and Dispatch Code shall apply to all users connected to or using InSTS both in private or State Sector.

The procedure for submission of day-ahead generation schedules by each InSGSs and drawal schedule by each Distribution Licensees and submission of day-ahead schedule of ISGS to WRLDC is also covered in this Code.

It also provides methodology of issuing real time dispatch/ drawal instructions and rescheduling, if required, to InSGSs and Distribution Licensees.

5. Applicability

The Scheduling and Dispatch Code shall apply to the MSLDC and each InSGSs, each Distribution Licensees/Discom, Long Term and Short Term Open Access Customer and Transmission Licensees connected to intra-State transmission system in Maharashtra.

6. Responsibility

- (i) The General Manager (Operation)/ SE (Operation) of MSLDC shall have the overall responsibility for implementation and ensuring compliance of this Code.

- (ii) The Dy. General Manager (Operation)/ Executive Engineer (Operation), MSLDC shall be responsible for preparation of the day-ahead generation schedules of InSGSs and drawal schedules of Distribution Licensees.
- (iii) Shift-in-Charge, MSLDC Control room, Kalwa shall be responsible for communication of day ahead schedules to WRLDC and generation schedules of Intra State Generating Stations and drawal schedules of Distribution Licensees and revisions of drawal schedule.
- (iv) Shift-in-Charge, MSLDC Control room, Kalwa shall be responsible for real time monitoring.

7. General

- (i) Each InSGS and each Distribution Licensees/ Discom in the State shall nominate a dedicated person/ cell to coordinate and communicate with MSLDC for the purpose of Scheduling and Dispatch. The name, designation, contact address and contact telephone numbers of such nominated person shall be informed to MSLDC and all concerned.
- (ii) The following matters shall be governed by the IEGC and procedure laid down there-under
 - a) Declared Capacity of ISGS
 - b) Entitlement of beneficiaries in ISGS
 - c) Drawal Schedule of ISGS
 - d) Inter-State and inter-regional bilateral exchange
 - e) Regional Transmission Losses
 - f) ISGS Surplus
 - g) Inter-State Open Access injection/ drawal schedule
 - h) Any other matter affecting regional power system or matter between two or more States

The MSLDC shall comply with procedures and instructions of WRLDC with respect to above.

- (iii) MSLDC will develop and maintain an internet web-site facility for the purpose of day ahead scheduling and display of schedules in real-time..
- (iv) The InSGS shall submit their respective generation schedules to MSLDC in the specified formats and within the specified time. The distribution licensees and Open

Access Customers shall submit their drawal schedule within the specified time. The mode of submission of required information shall be intimated by MSLDC and could be through direct uploading to website or through E-mail/ Fax.

- (v) The MSLDC shall make available the final generation and drawal schedules on its website at the specified time. The MSLDC shall also communicate the generation dispatch and final discom drawal schedules by E-mail to InSGSs and Distribution Licensees within the specified time.
- (vi) WRLDC shall list all inter-State generating stations (ISGS), in whose output more than one State has an allocated/contracted share. The station capacities and allocated/contracted shares of different beneficiaries/state shall also be listed out by WRLDC. MSLDC shall co-ordinate with WRLDC to identify the ISGS and Open Access Consumers which are supplying power to Users within Maharashtra and furnish overall drawal schedule for the State as a whole in respect of each ISGS in accordance with the Scheduling and Despatch Code under IEGC 2005.
- (vii) All Generating Stations (with unit size > 50 MW) excluding Renewable Energy (RE) generating stations shall furnish their forecasted unit-wise availability schedule in respect of generating stations to MSLDC-OD on day-ahead basis. As regards Renewable Energy generators, MSLDC shall co-ordinate with such RE generators for possibility of ascertaining their day-ahead generation. MSLDC will ensure adequate communication arrangement with such RE generators for the purposes. In case it is infeasible to monitor or schedule the RE generators on “individual” basis, SLDC shall arrange to monitor generation of RE generators on “cluster” basis. In the absence of any available information, actual generation by RE generators on the previous day shall be taken into consideration for load-generation balancing purposes.
- (viii) While furnishing the availability forecasts, the generating companies shall take into consideration the load requirement of their ‘captive consumers’ and ‘open access consumers’ and present these requirements separately so as to be despatched fully up to the contracted OA load i.e., the OA generators shall not be subjected to backing down instructions (subject to system emergency and transmission constraint) up to the requirement of their OA transactions. However, generation beyond the load requirement of OA transactions shall be subjected to centralized MOD principles.
- (ix) All the InSGSs shall furnish their capability curve & droop-characteristics for each unit to MSLDC. InSGS shall operate within their capability curve. MSLDC may, based on system requirement, ask the concerned InSGS to regulate MVAR.
- (x) In declaring the MW availability, InSGS Hydro Power Stations shall indicate their respective reservoir levels and any other restrictions and shall report the same to the MSLDC with their schedule.
- (xi) The Generation Schedules of InSGS and drawal schedules of Distribution Licensees/Discoms shall be prepared by MSLDC on 15 minute block basis.

- (xii) The generation schedules of ISGS generating stations are on ex-power plant basis whereas the net drawal schedule of distribution licensees/Discom on periphery of the State. The transmission loss of regional system shall be taken into account as per WRLDC procedure for working out ex-power plant generation schedule of ISGS.
- (xiii) The Distribution Licensees/Discom shall furnish details of bilateral power they have contracted on short term and long term basis from time to time in the Form No. MSLDC/OP-105/F- 3 (A)
- (xiv) Distribution licensees with essential loads will separately identify non-essential components of such loads, which may be kept OFF during system contingencies. Distribution Companies shall draw up an appropriate schedule with corresponding load blocks in each case. The non-essential loads can be put ON only when system normalcy is restored, as advised by **SLDC**
- (xv) While preparing the load forecast schedule, the Distribution Licensees shall take into consideration the load requirements of the 'open access consumers' located within their licensed area as well. While furnishing the overall load forecast schedule to the MSLDC the Distribution licensees shall include forecasted load requirement of only those 'open access consumers' which are not State Pool Participants.
- (xvi) Whenever the frequency is below 49.5 Hz the drawals shall be restricted to drawal schedules. When the frequency falls below 49.0 Hz requisite load shedding shall be arranged by SLDC as per the programmes drawn by the concerned Distribution Licensees
- (xvii) The InSGS hydro generating stations scheduling shall be done separately for Koyna HGS, the Hydro stations of TPC and the third consolidated group consisting of all Small Hydro Stations below 25MW capacity.
- (xviii) While scheduling generation of InSGS hydro generating stations, the MSLDC shall give consideration to the following factors:
- i. Irrigation/drinking water requirements shall be met and spillage of water shall be minimised
 - ii. Full time generation shall be scheduled for hydro stations where the reservoirs are overflowing
 - iii. Priority shall be given to reservoir-based hydro stations during peak hours. Koyna HGS is primarily intended to meet peaking requirement and shall be scheduled accordingly.
 - iv. MSLDC, taking into consideration grid security, may regulate despatch from Koyna and other hydro stations, which shall be complied with by such hydro stations.

- v. Optimum utilisation of water shall be achieved between pumped storage hydro power plants and tail race hydro power plants with due consideration to irrigation requirements

The entitlements, requisitions, and schedules shall be rounded off to the nearest decimal, to have a resolution of 0.01MW for ISGS, InSGSs. The drawal schedules of Distribution Licensees/ Discoms and Open Access Customers shall be rounded off to the nearest two decimals.

xv) Based on the availability schedule forecast of generating stations and load requirement forecast of State Pool Participants, the MSLDC-OD shall draw up the least cost despatch schedule for the State as a whole in accordance with the merit order dispatch principles approved by MERC from time to time.

xvi) Before finalizing the least cost despatch schedule for the State as a whole, the MSLDC shall inform the State Pool Participants about availability of surplus power, if any, so as to enable them to decide to undertake any inter-state trade transactions.

xvii) Based on least cost despatch schedule, the MSLDC-OD shall notify the Target Despatch schedule to generating stations and Target Drawal Schedule to the State Pool Participants. The target despatch schedules and target drawal schedules shall be determined by undertaking load-generation balancing and adopting MOD principles at reference frequency of 50 Hz.

8. Scheduling and Dispatch procedure

- 1 By 10 AM each day, each InSGS shall furnish to MSLDC, their station-wise ex-power plant generation schedule in MW and MU taking into consideration any outage of its generating unit for the next day, i.e., from 0000 hrs to 2400 hrs of the following day in 15 minute blocks in Form No. **MSLDC/OP-105/F-1**.
- 2 By 10 AM each day MahaGenco shall furnish a consolidated schedule for small hydro stations in Form No. **MSLDC/OP-105/F-2**
- 3 By 10 AM each day each Distribution Licensees/Discom shall furnish their drawal schedule on 15 minute block basis against bilateral power and IPP requisitions they have contracted on short term and long term basis in Form Nos. **MSLDC/OP-105/F-3 and MSLDC/OP-105/F-3(A)** respectively
- 4 By 10 AM each day all Transmission Open Access Users shall furnish to MSLDC their drawal and/or injection schedules in Form No. **MSLDC/OP-105/F- 4**
- 5 By 10 AM each day on a basis, the concerned Distribution Licensee/Discom shall furnish the expected generation to MSLDC in respect of IPP, CPP, NCES of installed capacity more than 5 MW which are embedded into distribution system and injecting power directly into distribution system as a

consolidated format for all such generating stations in Form No. **MSLDC/OP-105/F-5**.

- 6 By 10 AM every day each Distribution Licensee/Discom connected to InSTS shall furnish to the MSLDC their MW and MU drawal schedule for each 15 minute time blocks for the next day, i.e., from 0000 hrs to 2400 hrs of the following day in Form No. **MSLDC/OP-105/F-6**
- 7 At 11 AM, after receipt of information on entitlements of Maharashtra Users in different ISGS from WRLDC through website, E-mail/fax etc, the generation schedules of InSGS, bilateral exchange and other contracted power for day ahead, the MSLDC shall review the availability vis-à-vis drawal schedule received from Distribution Licensees/ Discom for each block of 15 minute for the following day and shall assess the shortage/excess for each time block.
- 8 At 12 Noon, MSLDC shall prepare the Load Generation Balancing as per the Merit Order Despatch (MOD) principle.
- 9 At 12:30 PM, MSLDC shall send Target Dispatch Schedule to generators and Target Drawal Schedule to Licensees in Form No. MSLDC/OP-105/F-7, Form No. MSLDC/OP-105/F-8, Form No. MSLDC/OP-105/F-9, Form No. MSLDC/OP-105/F-10, Form No. MSLDC/OP-105/F-11, Form No. MSLDC/OP-105/F-12, Form No. MSLDC/OP-105/F-13 and Form No. MSLDC/OP-105/F-14.
- 10 By 2 PM, the MSLDC shall receive the revised Demand Forecast from licensees and Revised Availability Forecast from Generators.
- 11 At 2:30 PM, the MSLDC shall prepare the Load Generation Balancing as per the MOD principle accommodating the revised schedules.
- 12 MSLDC shall finalize drawal schedule on the basis of following criterion:
 - a) In case the demand estimate for any 15 minute time block exceeds or equals to the generation availability in that 15 minute time block, the drawal schedule shall be equal to generation availability of that time block.
 - b) If the generation availability for any 15 minute time block exceeds the demand estimate, the drawal schedule shall be prepared in the following order:
 - i. Generation from run-of-river hydro stations;
 - ii. Generation from 'must run' Gas Stations, CPPs and Nuclear Stations.
 - iii. CGS, ISGS, InSGS, firm commitments against bi-lateral contracts based on merit order
 - iv. Generation from other hydel-stations for peaking requirement;

- v. generation against Firm off-take commitment
 - vi. Generation from InSTS Thermal /Gas generating stations according to variable cost and above the minimum technical limit of the respective unit.
 - vii. Generation from CPPs according to variable cost
- 13 Before 3 PM, MSLDC shall finalize the drawal schedule of ISGSs and InSGSs based on review of the availability vis-à-vis drawal schedule received from Distribution Licensees/ Discom. .
- 14 At 3 PM each day, MSLDC shall furnish to WRLDC drawal schedule for ISGS, bilateral interchanges and inter-state open access. MSLDC shall ensure that the step increase regarding the ISGS station-wise requisition is not more than 1% of the previous requisition.
- 15 MSLDC may also give standing instructions to the WRLDC for ISGS stations if entitlements from such stations to be booked as first charge on merit order. The WRLDC itself may decide the drawal schedules in such event from ISGS.
- 16 By 3 PM each day MSLDC shall intimate the generation schedule of InSGS.
- 17 By 5 PM each day, the WRLDC shall convey to MSLDC the “net drawal schedule” of the State in MW for different time block, for the next day. The summation of the station-wise ex-power plant drawal schedules for all ISGS and drawal from regional grid consequent to bilateral interchanges, after deducting the transmission losses (estimated), shall constitute the State drawal schedule.
- 18 By 6 PM, the MSLDC shall finalise target dispatch schedules for generators and target drawal schedules for licensees in Form No. MSLDC/OP-105/F-7, Form No. MSLDC/OP-105/F-8, Form No. MSLDC/OP-105/F-9, Form No. MSLDC/OP-105/F-10, Form No. MSLDC/OP-105/F-11, Form No. MSLDC/OP-105/F-12, Form No. MSLDC/OP-105/F-13 and Form No. MSLDC/OP-105/F-14.. This information shall also be sent to the RSM.
- 19 By 7 PM , MSLDC shall publish the target despatch and drawal schedule and imbalance volume on the web
- 20 By 9:30 PM, revised drawal schedules shall be received from licensees, if any.
- 21 By 10:00 PM, The revised requirement from the ISGS shall be sent to the WRLDC .
- 22 By 11 PM the WRLDC, after consulting the concerned constituents, shall issue the final ‘drawal schedule’ to MSLDC and the final ‘despatch schedule’ to each ISGS.

- 23 Immediately, MSLDC shall release final generation schedules to InSGSs and drawal schedule to each Distribution Licensees/ Discom in Form No. MSLDC/OP-105/F-7, Form No. MSLDC/OP-105/F-8, Form No. MSLDC/OP-105/F-9, Form No. MSLDC/OP-105/F-10, Form No. MSLDC/OP-105/F-11, Form No. MSLDC/OP-105/F-12, Form No. MSLDC/OP-105/F-13 and Form No. MSLDC/OP-105/F-14..
- 24 By 11:30 PM, MSLDC shall publish the final despatch and drawal schedule and imbalance volume on the web
- 25 In case the day ahead schedule is not received by 10:00 AM the schedule assigned for the previous day (d-1) shall be the schedule for the next day (d+1).

9. Revision of Schedules

Revision of final generation and despatch schedule issued by MSLDC may be necessitated on account of

- a) Depletion of Generating capacity in ISGS or InSGS due to tripping of units or de-rating caused by loss of auxiliaries or due to re-start restrictions of a Thermal unit following a grid disturbance
 - b) Constraints in ISTS or InSTS
 - c) Hydro station constraints
 - d) Transgression of system frequency outside the band of 49 Hz to 50 Hz
- 1 In case of forced outage of a unit of ISGS, WRLDC will revise the schedules on the basis of revised declared capability by ISGS. The revised schedule will become effective from the 4th time block, starting the counting from the time block in which the revision is advised by the generator to be the first one. Also, during the first, second and third time blocks of such an event, the scheduled generation of the ISGS shall be deemed to have been revised to be equal to actual generation, and the scheduled drawals of the beneficiaries shall be deemed to have been revised to be equal to their actual drawals.
- 2 In the event of a situation arising due to bottleneck in evacuation of power due to transmission constraint in the regional network of ISTS, WRLDC shall revise the schedule which shall become effective from the 4th time block. During the first three time blocks also the schedule shall deemed to have been revised to be equal to the actual generation by the ISGS and drawal by the states.
- 3 In case of forced outage of an InSTS generating unit, MSLDC will revise the schedules on the basis of revised generation schedule of the InSGS. The revised schedule will become effective from the 4th time block, counting the time block in

which the revision is advised by the InSTS generator to be the first one. Also, during the first, second and third time blocks of such an event, the scheduled generation of the ISGS shall be deemed to have been revised to be equal to actual generation, and the scheduled drawals of the beneficiaries shall be deemed to have been revised to be equal to their actual drawals.

- 4 In case of any grid disturbance, the scheduled generation of all the generating stations and scheduled drawal of all the beneficiaries shall be deemed to have been revised to be equal to their actual generation/drawal for all the time blocks affected by the grid disturbance. The exact duration and certification of such grid disturbance would be declared by WRLDC/MSLDC as the case may be.
- 5 If, at any point of time, MSLDC observes that there is need for revision of the schedules in the interest of better system operation, it may do so on its own and in such cases, the revised schedules shall become effective from the 4th time block.
- 6 WRLDC shall permit the revision of declared capability by ISGS and drawal schedule of the State for the remaining period of the day/block with advance notice of 6 time blocks. Revised schedules / declared capability in such cases shall become effective from the 6th time block, counting the time block in which the request for revision has been received by WRLDC to be the first one.
- 7 WRLDC shall put all such revised schedule on its website and the Shift In charge, MSLDC shall consider every revision by WRLDC and if need be, modify /revise the despatch schedule of InSGS or revise the drawal schedule of Distribution Licensees in the State and load shedding plan, based on the circumstances at that moment.
- 8 The Generation schedules and drawal schedules issued/revised by WRLDC shall become effective from designated time block irrespective of communication successes to inform all such revisions. The Shift In charge in MSLDC will be vigilant regarding all revisions and developments in power supply position from time to time
- 9 MSLDC shall permit the revision of generation schedule by InSGS and drawal schedule of the Distribution Licensees /Discom for the remaining period of the day/block with advance notice of 6 time blocks. Revised generation schedules / drawal schedule in such cases shall become effective from the 6th time block, counting the time block in which the request for revision has been received by MSLDC to be the first one.
- 10 If, at any point of time, MSLDC observes that there is need for revision of the schedules in the interest of better system operation, it may do so on its own, and in such cases, the revised schedules shall become effective from the 4th time block, counting the time block in which the revised schedule is issued by the MSLDC to be the first one
- 11 In case any Distribution Licensee/Discom seeks a revision in the bilateral schedules, the same would have to be confirmed by the other partner within a period of one hour.

The revised schedules in such event would come in to effect from 6th time block. In case revision by Discom/Distribution Licensee involve revision of Inter-State bilateral inter-change additional 2 time blocks would be required by MSLDC to effect revision i.e. revision shall be effective from 8th time block in such case.

12 .

13 In the event of forced or planned outage of an InSGS generating unit, the Shift In charge - MSLDC shall intimate all the Users.

14 Frequency management :

MSLDC shall ,

- i) monitor the system frequency and ensure proper balance between the supply and demand by due revisions in generation schedules in the frequency band between 49.5 to 50 Hz.
- ii) monitor bilateral interchanges and net drawal from the Central pools and from the regional grid and ensure their conformity to the finalised schedule especially when the frequency is below 49.5 Hz
- iii) in the event of frequency dropping below 49 Hz, proceed to carry out requisite Load shedding as per the schedule drawn.
- iv) Back down the generating units / stations as per the Merit Order Despatch principle in case the frequency goes higher than 50.5 Hz

10. Time frame for scheduling and Dispatch Procedure

Time	Particulars of information	From	To	Form No.
By 10 AM each day	MW and MU generation schedules for the following day	Each InSGS	MSLDC	Form No. MSLDC/OP-105/F-1
By 10 AM each day	Consolidated generation schedule for small hydro stations	MahaGenco	MSLDC	Form No. MSLDC/OP-105/F-2

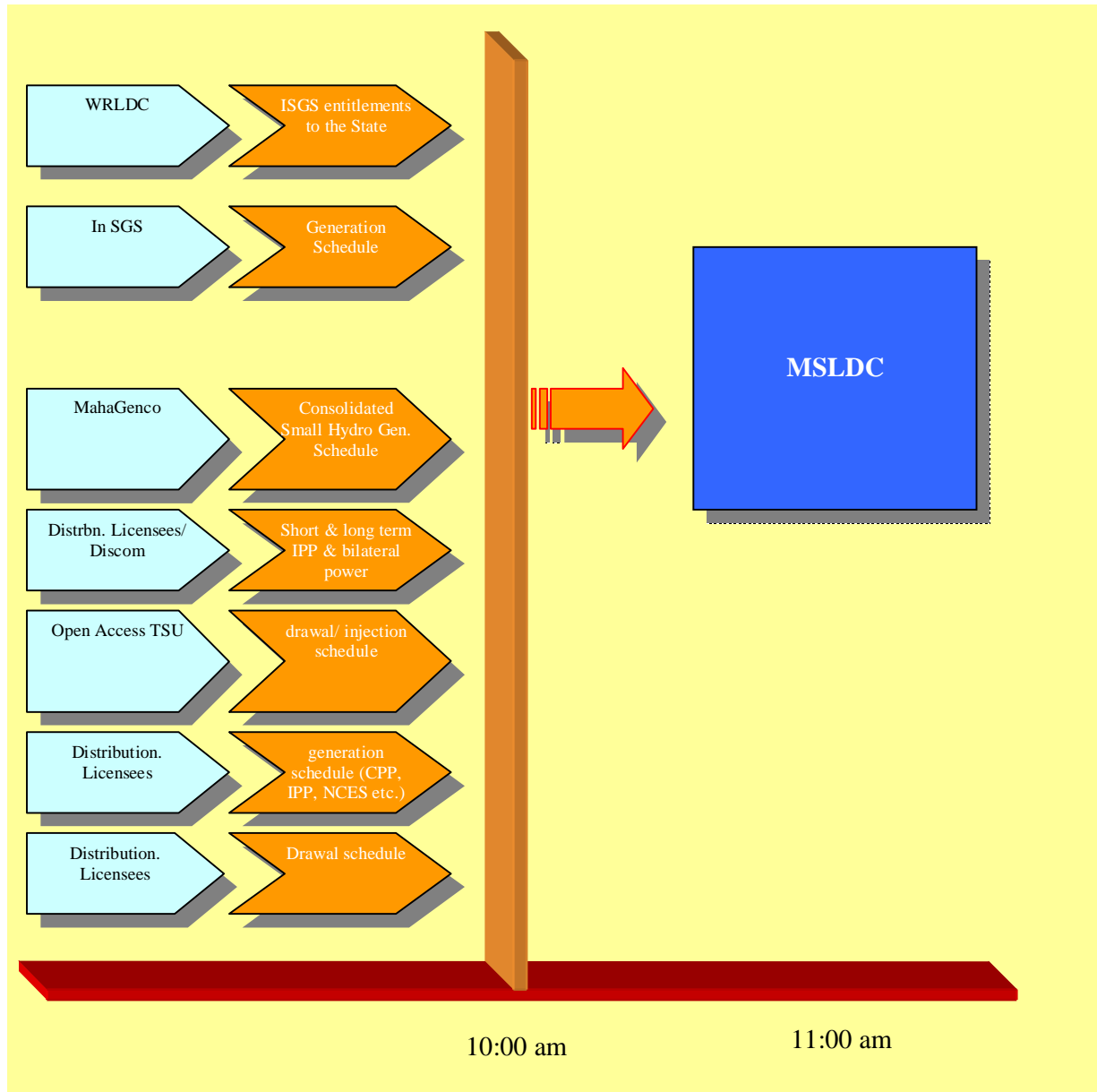
Time	Particulars of information	From	To	Form No.
By 10 AM each day	Bilateral and IPP requisition both short and long term in 15 minute block basis.	Distribution Licensee/ Discom	MSLDC	Form No. MSLDC/OP-105/F-3
By 10 AM each day	Drawal and/or injection schedules of Transmission Open Access Users	All open access TSU	MSLDC	Form No. MSLDC/OP-105/F- 4
By 10 AM each day	Generation schedules of CPP, NCES (more than 5 MW) embedded into distribution system and injecting power directly into distribution system	Distribution Licensee	MSLDC	Form No. MSLDC/OP-105/F- 5
By 10 AM each day	MW and MU drawal schedule for the next day	Distribution Licensee	MSLDC	Form No. MSLDC/OP-105/F-6
By 11 AM each day	Receive CGS entitlement for the state from WRLDC	WRLDC	MSLDC	WRLDC Format through Fax /E-mail/ Web site
By 12 noon each day	MSLDC to prepare Load-Generation Balancing as per MOD principle			
By 12:30 PM each day	Send Target Dispatch schedule to Generators and Target Drawal schedules to	MSLDC	Licensees InSGS	Form No. MSLDC/OP-105/F- 7 Form No. MSLDC/OP-

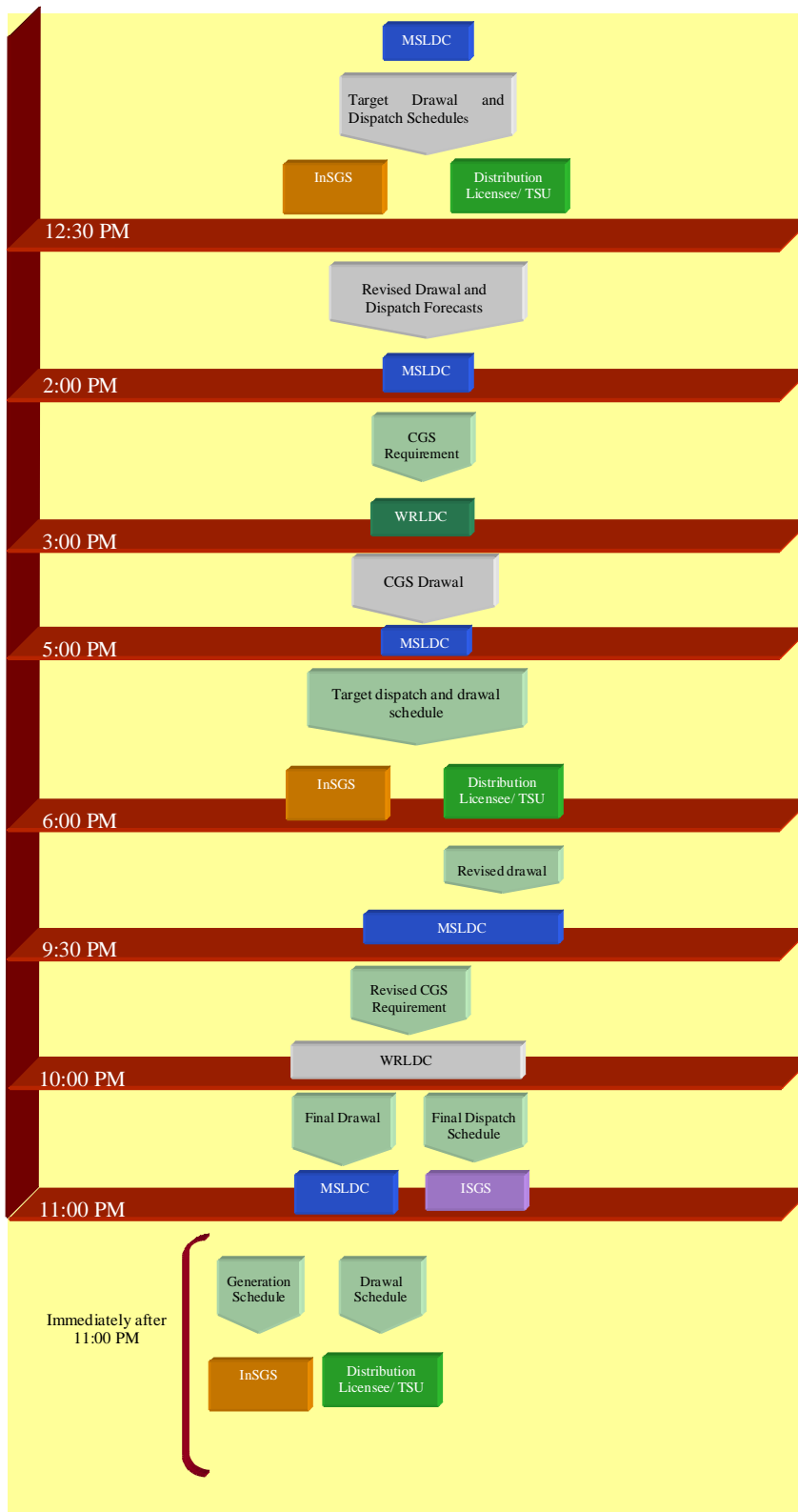
Time	Particulars of information	From	To	Form No.
	licensees.			105/F- 8 Form No. MSLDC/OP-105/F- 9 Form No. MSLDC/OP-105/F- 10 Form No. MSLDC/OP-105/F- 11 Form No. MSLDC/OP-105/F- 12 Form No. MSLDC/OP-105/F- 13 Form No. MSLDC/OP-105/F- 14
By 2 PM each day	Receive revised demand forecast from licensees and revised availability forecasts from generators	Licensees InSGS	MSLDC	In the formats specified in Form No. MSLDC/OP-105/F-1 to F-6
By 2:30 PM each day	MSLDC to prepare Load-Generation Balancing as per MOD principle accommodating revised schedules			
By 3 PM each day	Intimate drawal schedule in ISGS, bilateral inter-state exchange and open access	MSLDC	WRLDC	WRLDC Format through Fax /E-mail/ Web site
By 5 PM	Convey net drawal schedule of the	WRLDC	MSLDC	Web-site/E-mail

Time	Particulars of information	From	To	Form No.
each day	State in MW for different time block, for the next day.			
By 6 PM each day	Finalise Target Dispatch Schedules for generators and Target Drawal Schedules for Licensees	MSLDC	InSGS Licensee RSM	Form No. MSLDC/OP-105/F- 7 Form No. MSLDC/OP-105/F- 8 Form No. MSLDC/OP-105/F- 9 Form No. MSLDC/OP-105/F- 10 Form No. MSLDC/OP-105/F- 11 Form No. MSLDC/OP-105/F- 12 Form No. MSLDC/OP-105/F- 13 Form No. MSLDC/OP-105/F- 14
By 7 PM	Publish the target schedule on web	MSLDC		
By 9:30 PM each day	Receipt of revised drawal schedules from licensees if any	Licensees	MSLDC	Web-site/E-mail
By 10:00 PM each day	Send revised requirement from CGS to WRLDC	MSLDC	WRLDC	Web-site/E-mail
By 11 PM	Issue the final 'drawal schedule' to	WRLDC	MSLDC/ISGS	Web-site/E-mail

Time	Particulars of information	From	To	Form No.
each day	MSLDC and the final 'dispatch schedule' to each ISGS.			
Immediately after 11 PM	Release final generation schedules to InSGSs and drawal schedule to each Distribution Licensees/ Discom	MSLDC	InSGS & Distribution Licensees /TSU	Form No. MSLDC/OP-105/F- 7 Form No. MSLDC/OP-105/F- 8 Form No. MSLDC/OP-105/F- 9 Form No. MSLDC/OP-105/F- 10 Form No. MSLDC/OP-105/F- 11 Form No. MSLDC/OP-105/F- 12 Form No. MSLDC/OP-105/F- 13 Form No. MSLDC/OP-105/F- 14
By 11:30 PM	Publish the Final Schedule on web	MSLDC		

11. Pictorial Summary of Timeframe





12. Abbreviations

ABT	Availability Based Tariff
BEST	Brihanmumbai Electric Supply and Transport Undertaking
CERC	Central Electricity Regulatory Commission
CPP	Captive Power Producer
DC	Declared Capacity
Discom	Distribution Company
IC	Installed Capacity
IEGC	Indian Electricity Grid Code
IPP	Independent Power Producer
ISGS	Inter-State Generating Station
InSTS	Intra-State Transmission System
InSGS	Intra-State Generating Station
kV	Kilo Volt
MERC	Maharashtra Electricity Regulatory Commission
MOD	Merit Order Dispatch
MSEB	Maharashtra State Electricity Board
MSEDCL/ MahaDiscom	Maharashtra State Electricity Distribution Company Limited
MSETCL/MahaTransco	Maharashtra State Electricity Transmission Company Limited
MSPGCL/MahaGenco	Maharashtra State Power Generation Company Limited
MVA	Mega Volt Ampere
MW	Mega Watt
OD	Operational Division
NCE	Non-Conventional energy
RE	Renewable Energy
REL (D)	Reliance Energy Limited –Distribution

REL (T)	Reliance Energy Limited –Transmission
RSM	Reconciliation and Settlement Manager
SGC	State Grid Code
SGS	State Generating Station
MSLDC	Maharashtra State Load Dispatch Centre
TPC(T)	Tata Power Company Ltd. (Transmission)
TPC(G)	Tata Power Company Ltd. (Generation)
WRPC	Western Regional Power Committee
WRLDC	Western Regional Load Dispatch Centre