



INDUSTRIAL VISIT AT ALDC, JAMBUVA






DEPARTMENT OF
ELECTRICAL ENGINEERING
(B.E. EE)
(On 24th July 2015)





The department of Electrical Engineering, Sarvajani college of Engineering and Technology organized a one days Industrial visit to AREA LOAD DESPATCH CENTRE (ALDC), Jambuva on 24th July, 2015 for B.E Electrical Engineering 3rd year morning batch students. Prof. Kalpesh Patil and Prof. Urvi Jariwala teaching faculties of EE department accompanied with this industrial visit.

  	<p>LATEST NEWS</p> <p>Honourable GERC has issued an order on dtd.05.03.2015 to adopt the Provisions of Deviation Settlement Mechanism & related matter regulation 2014-with effect from dtd.17.02.2014. Appropriate changes in this regards, will be applicable to intra-state entities. more</p> <p>On 11th October 2014 ever highest in Gujarat maximum demand catered 14004.88 MW at 15:00 hrs and capacity 913 MW achieved with support of all</p>	<p>Grid Frequency : 50.03 Hz</p> <p>Gujarat Catered : 10169 MW</p> <p>Revision : 7</p> <p>Remarks : UTPS, UPL.</p>
<ul style="list-style-type: none"> ▶ EASS ▶ Real Time Data ▶ Operations ▶ Schedule ▶ Open Access ▶ Commercial ▶ Energy Account ▶ Wind Forecasting ▶ Weather & Demand 	<p>Functions</p> <p>Functions of State Load Despatch Centres as per IEGC 2003.</p> <p>(1) The State Load Despatch Centre shall be the apex body to ensure integrated operation of the power system in a State.</p> <p>(2) The State Load Despatch Centre shall--</p> <p>(a) be responsible for optimum scheduling and despatch of electricity within a State, in accordance with the contracts entered into with the licensees or the generating companies operating in that State;</p> <p>(b) monitor grid operations;</p> <p>(c) keep accounts of the quantity of electricity transmitted through the State grid</p> <p>(d) exercise supervision and control over the intra-State transmission system; and</p> <p>(e) be responsible for carrying out real time operations for grid control and despatch of electricity within the State through secure and economic operation of the State grid in accordance with the Grid Standards and the State Grid Code.</p> <p>(3) The State Load Despatch Centre may levy and collect such fee and charges from the generating companies and licensees engaged in intra-State transmission of electricity as may be specified by the State Commission.</p>	

FUNCTION OF ALDC:


The Gujarat Electricity Grid Code had clearly entrusted the Responsibility of Scheduling and Dispatch to SLDC. SLDC has to coordinate net Injection and drawl of electricity in its control area. This needs for active Participation of Generating stations, STU, ALDC of DISCOMS, and ISGS. As per grid Code Clause no 11.3 “The state grid shall be treated as a loose power pool, in which The DISCOMS shall have full operational autonomy and ALDC shall have total Responsibility for regulating demand of their customers scheduling their drawl from The generating stations, including interstate generating stations (ISGS) Arranging Bilateral transactions regulating their net drawl from the state grid.” Grid Code Clause no 11.17 “SLDC shall be responsible for 15 minute block wise Consumption Of actual net injection / drawl of concerned entities, based on above meter Readings and preparation of State Energy Accounts.

All computations carried out by SLDC shall be open to all intrastate Entities for checking / verifications for a period Of 15 days. In case any mistake/ omission is detected, the matter should be Reported to the Commission for further investigation/action.



3 Old UI (Unscheduled Interchange) v/s DSM (Deviation Settlement Mechanism):

- Power is not a commodity which is easily available in India. Huge investment is required for set up of new generating stations and R&M of old ones. The generators needed sufficient tariff for the power catered. Hence two part tariff was introduced .
- The fixed cost comprise of interest on loan & working capital, return on equity, O&M expenses, insurance, taxes & depreciation. The variable costs are the fuel costs. In Availability Based Tariff these two costs are treated separately. The payment of fixed cost is dependent on Availability of the plant, i.e. whether the plant is available for MW generation or not on a day to day basis. The amount payable to the company as a part of fixed cost depends on the average availability of the plant over the year. If the average availability of the plant over the year is more than the specified norm of the plant, the generator gets higher payment and vice versa. This first component of the ABT is also called as the “Capacity Charge”.
- The second part of this ABT is the variable cost i.e. the energy charge which is charged as per the fuel consumption given by the schedule of the day and not on the actual generation. If there are deviations in generation, i.e. if scheduled generation of the plant is 100 MW and the plant generates 110 MW, the energy charge would still be paid for 100 MW of energy generation and the remaining 10 MW will be paid as per the system conditions
- prevailing during that extra generation. If the grid already had surplus power when this extra 10 MW was generated and the frequency was above 50 Hz the rate at which this power is sold will be lower and vice versa. This leads us to conclude that there are three parts in ABT, 1) Capacity charge 2) Energy charge and the 3) Payment for deviations from schedule at the conditions prevailing at the time of deviation. The negative third part would signify that the payment is made by the generator for violating the schedule. This part is called Unscheduled Interchange (UI).



Shri. Anandiben Patel
Hon'ble Chief Minister
Gujarat


Shri Saurabh Patel
Hon'ble Energy
Minister, Gujarat

Shri. Gopind Patel,
Hon'ble State Minister,
Energy & Petroschemicals
Gujarat

LATEST NEWS
GRID CONNECTION CHARGES : SLDC has raised invoices for its claim of Grid Connection Charges (one time) for connecting to the Grid. These charges are as per GERC Regulation 5 of 2005 Chapter 3, Section 3(i).[more](#)
Petition in the matter of Devising a mechanism for recovery of compensatory charges from entity (ies) who are in deviation to schedule and for whom a generating station of any entity is scheduled by State Load Dispatch Centre to

Grid Frequency	: 50.01 Hz
Gujarat Catered	: 10985 MW
Revision	: 8
Remarks	: WIND,

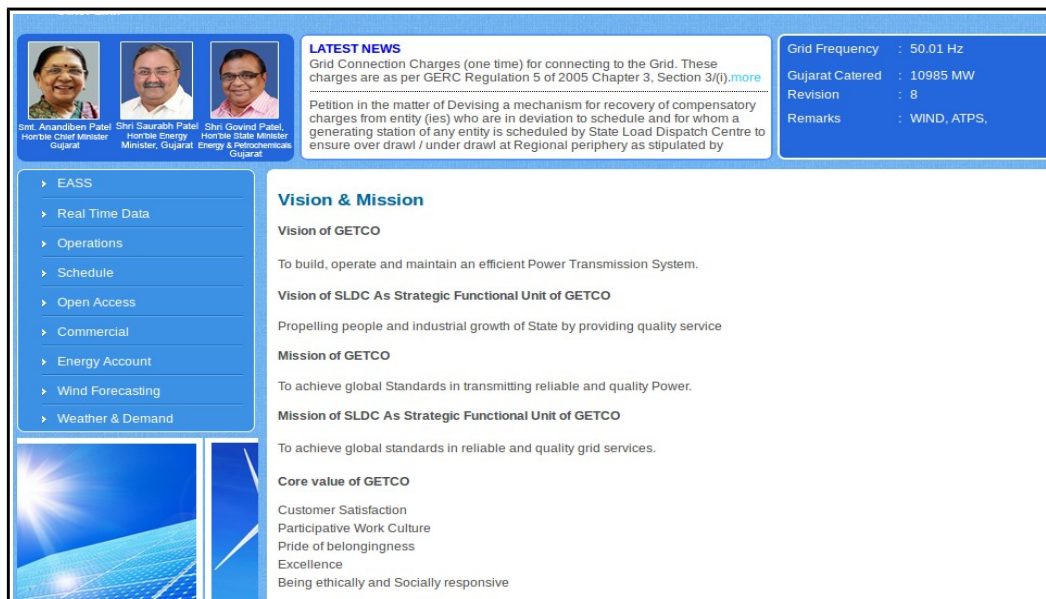
- EASS
- Real Time Data
- Operations
- Schedule
- Open Access
- Commercial
- Energy Account
- Wind Forecasting
- Weather & Demand



Evolution of SLDC
Initially the operation of the Gujarat grid system was coordinated from the central thermal power station at Dhuvuran. Later, as the complexity and the size of the network increased, the need for close coordination was realized.
By 1969, the Gujarat power grid was connected with Maharashtra grid system through Tarapur Atomic Power by 220kv lines. In 1969, the Load despatch centre was established at Gotri (Baroda) from where adequate communication facilities were already available to various outstations. Initially the Load Despatch at Gotri worked in two shifts only with skeleton number of staff with a small painted wooden board to display system mimic diagram. The Load Despatch Centre was shifted to Jambuva on 17th May 1974 and sophisticated power line carrier communication was provided for operation, control and coordination. The facilities available at Jambuva are express speech communication, tele-printer messaging service, tele-metering of parameters of power stations and sub-stations.
The Load Despatch Centre at Jambuva, later on, Computerized in the year 1984 with the equipments received under WREB project. In the first stage of the project, only SCADA functions were made available at LDC.
Under SC & C WR project for implementation of Unified Load Despatching Scheme in Western Region, New State Load Despatch Centre at Gotri, Vadodara, and three sub-LDCs at Jetpur, Gandhinagar and Jambuva were commissioned and started functioning from 8 July 2005. These Sub- LDCs are carrying out data acquisition, data transfer to SLDC and monitoring of system parameters in respect of the area. These Sub Load Despatch Centres are monitoring the radial feeders and taking corrective actions on associated equipments. They are also carrying out switching of equipments and lines at Grid Stations as per directives from SLDC. They are managing the load as per the schedule finalized in advance or in case of any incidents in the area directed by SLDC. They are collecting all relevant information regarding all system events and report to SLDC for further analysis and for taking follow up action for system improvement.

Benefits arising from UI implementation :

1. UI is a real time pricing mechanism: UI rate is dependent on frequency signal received
2. UI increases efficiency of the grid by every generator
3. UI can be used for Merit Order Dispatch
4. Capacity best matched with load by UI mechanism
5. Improvement in grid parameters such as Frequency and Voltage
5. A mechanism for harnessing Captive & Co-generation

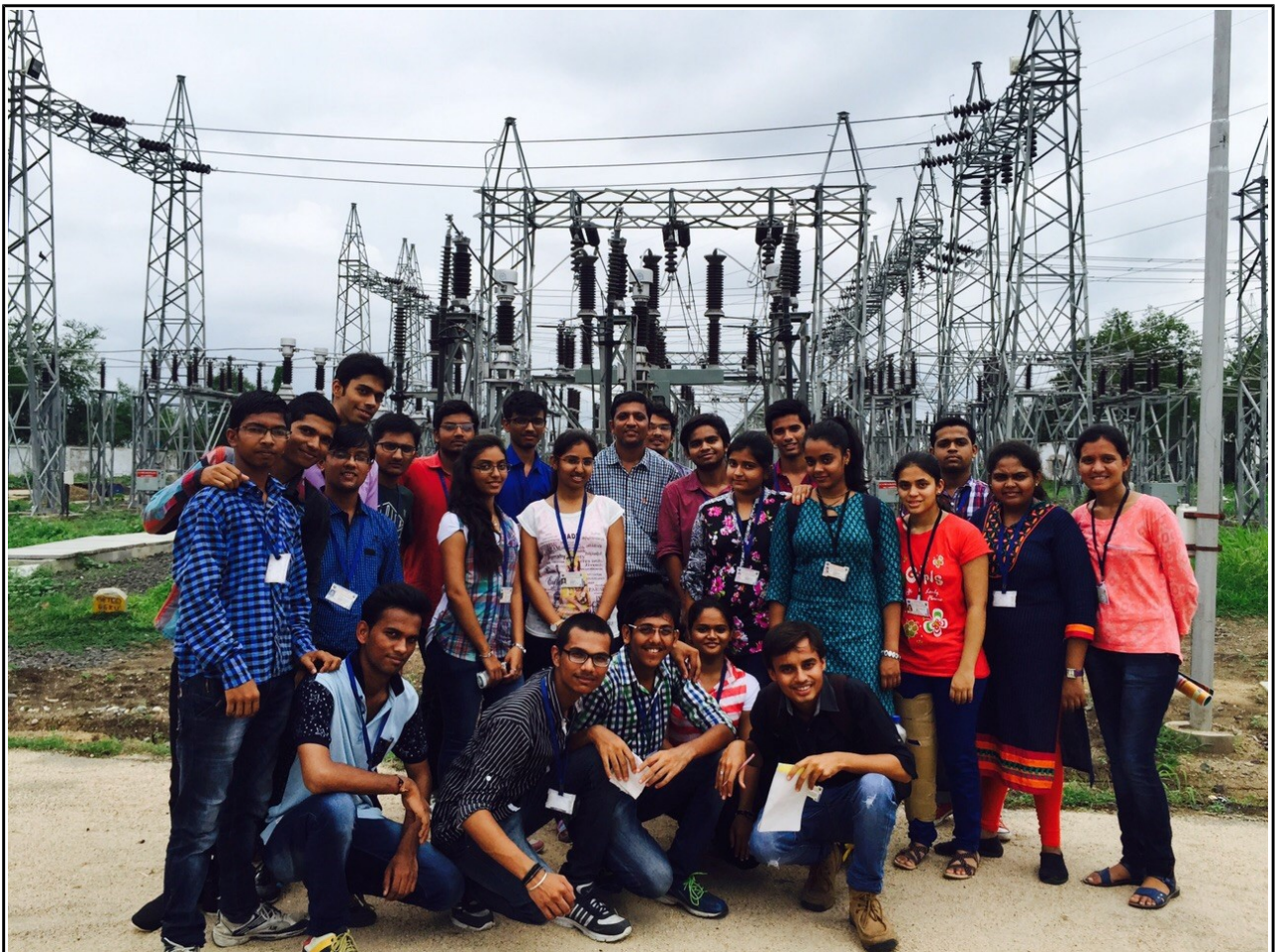


The screenshot displays the GETCO website interface. At the top, there is a 'LATEST NEWS' section with three news items, each featuring a photo of a minister and a brief description. To the right of the news, a blue box displays real-time grid data: Grid Frequency (50.01 Hz), Gujarat Catered (10985 MW), Revision (8), and Remarks (WIND, ATPS). Below the news, a sidebar on the left contains a list of navigation links: EASS, Real Time Data, Operations, Schedule, Open Access, Commercial, Energy Account, Wind Forecasting, and Weather & Demand. The main content area is titled 'Vision & Mission' and contains sections for the Vision of GETCO, Vision of SLDC As Strategic Functional Unit of GETCO, Mission of GETCO, Mission of SLDC As Strategic Functional Unit of GETCO, and Core value of GETCO. The core values listed are Customer Satisfaction, Participative Work Culture, Pride of belongingness, Excellence, and Being ethically and Socially responsive.

Improvements brought about by UI mechanism :

- Grid frequency has drastically reduced from 48 to 52 Hz earlier to 49.5 to 50.5 Hz for most hours in a day.
- The hydro electric utilities are handled in an efficient manner than it was done before.
- States share have acquired a new meaning in the central generating stations and grid discipline is promoted.
- Power deficit states can meet their occasional excess demand by over drawing from the grid and paying the UI charges to the state which has under drawn
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- Power deficit states can meet their occasional excess demand by over drawing from the grid and paying the UI charges to the state which has under drawn After the Grid Failure of 30 & 31st July 2012, the reasons came out shows the use of UI mechanism as a tool for generation by some Stake holder which endangered the Grid safety.
- The impact that gradual tightening of frequency band had on the grid frequency and decline in UI volume after the incidences of grid failures. It was highlighted the need for primary response to avoid large fluctuations in frequency. Frequency band tightened from (49.7 to 50.2Hz.)to (49.90Hz to 50.05Hz)
- Deviations shall not exceed 150MW or 12% whichever is less.
- Deviations are limited even under allowed frequency band.
- UI regulation replaced by Deviation settlement mechanism.
- Every regional entity shall ensure reversal of sign of deviation from schedule at least once after every twelve time blocks.
- All actions for early commissioning of ADMS shall be initiated



The students are benefited in terms of the technical details provided by The company on what they are actually doing in load dispatch centre. The entire student along with Electrical engineering department of Sarvajanic College of Engineering and

Technology are extremely thankful to@@ Who grant the permission to visiting their site.