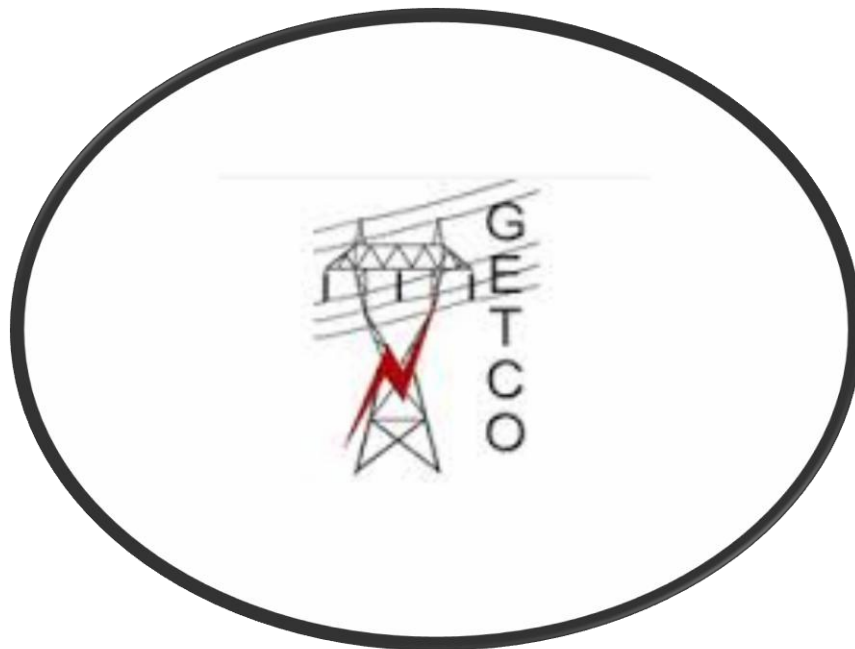




GIDC Degree Engineering College

Managed by GIDC Education Society

**Industrial Visit at Gujarat Energy Transmission Corporation
Limited(GETCO) ,Navsari**



ACKNOWLEDGEMENT

The industrial visit at **Gujarat Energy Transmission Corporation Limited (GETCO) Navsari** was impossible to us without the efforts and valuable inputs from collage and faculties. We are here extending to our great acknowledgement and appreciation to following persons with their memorial inputs that are not limited only those mentioned below:-

The first and the most acknowledged is **Dr.K.N.Mistry, Principal Sir** who was very helpful to us. As a principal, he has inspired us to arrange industrial visit to Pre final year students. He has injected us the familiarity and methodology of planning of visit. Not only that as giving the permission of industrial visit, his academic guidance, fairness and responsiveness to kind of queries remains him as a role model, there of we are extending our gratitude to **Dr.K.N.Mistry, Principal Sir**.

Next and the acknowledged **Mr.Rajesh T.Patel (H.O.D. of Electrical Engineering Department)** who was faithful to us, he is also always ready for solving problem related to industrial visit and conclude it, ascertaining him a commemorative plaque at deep of our heart.

Again thanks for valuable collaborations

Mr.Bhavesht Patel (Assistant Professor)

Miss.Dharmishtha T Patel (Assistant Professor)

Mr.Ankur P Desai (Assistant Professor)

Mrs.Chetna Patel (Lab Assistant)

Introduction:

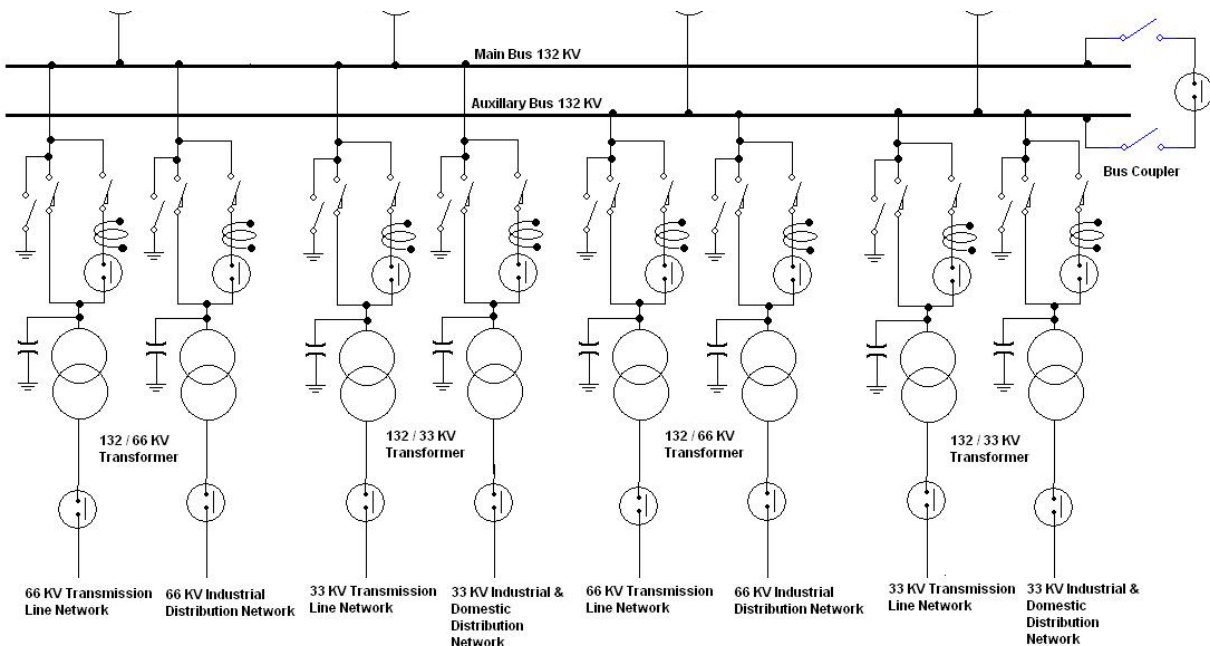
Gujarat Energy Transmission Corporation Limited (GETCO) was set up in May 1999 and is registered under the Companies Act, 1956. The Company was promoted by erstwhile Gujarat Electricity Board (GEB) as its wholly owned subsidiary in the context of liberalization and as a part of efforts towards restructuring of the Power Sector.

As a part of the ongoing reforms process in the state power sector, in the year 2003, the Government of Gujarat under the provisions of Gujarat Electricity Industry (Re-Organization & Regulation) Act, 2003 framed the Gujarat Electricity Comprehensive Transfer Scheme, 2003 (the Transfer Scheme) vide Government Notification No: GHU-2003-58-GEB-3537-K dated the 24th October, 2003. The Government of Gujarat issued Notification No. GHU-2004-99-GEB-1104-7318-K dated the 31st December 2004, notifying the Provisional Opening Balance Sheet as on 31st March 2004 of the Six Transferee Companies containing the value of assets and liabilities transferred from erstwhile Gujarat Electricity Board (GEB) to the Transferee Companies. Assets of the Board were dis-aggregated into six companies – One each in Generation and Transmission and Four in Distribution. As a part of the above exercise, all the generation plants of GEB have been transferred to GSECL, which was a company already, existing since 1993.

Subsequently, the Government of Gujarat vide Notification dated 31st March, 2005 notified that pursuant to the Transfer Scheme, the effective date for the transfer of assets, liabilities, proceedings and personnel be further extended to 1st April, 2005. A holding company, Gujarat Urja Vikas Nigam Limited (GUVNL), has been also been formed. Apart from co-ordination functions, GUVNL is also handling Trading and Bulk Supply functions.

Basic regarding Substation:-

A Single Line Diagram (SLD) of an electrical system is the line diagram of the concerned electrical system which includes all the required electrical equipment connection sequence wise from the point of entrance of power up to the end of the scope of the mentioned work.



lightning arrestor, C.T/P.T unit, isolators, protection and metering P.T. and C.T. circuit breakers, again isolators and circuit breakers, main power transformer, all protective devices/relays and other special equipment like CVT, GUARD RINGS, etc. as per design criteria.

A Single Line Diagram (SLD) of an Electrical System is the Line Diagram of the concerned Electrical System which includes all the required electrical equipment connection sequence wise from the point of entrance of Power up to the end of the scope of the mentioned Work. As in the case of 132KV Substation, the SLD shall show Lightning Arrestor, C.T/P.T Unit, Isolators, Protection and Metering P.T & C.T. Circuit Breakers, again Isolators and circuit Breakers, Main Power Transformer, all protective devices/relays and other special equipment like CVT, GUARD RINGS, etc as per design criteria. And the symbols are shown below. There are several feeders enter into the substation and carrying out the power. As these feeders enter the station they are to pass through various instruments.

1 FEEDER CERCUIT:

1. Lightening arrestors;
2. CVT;
3. Wave trap;
4. Isolators with earth switch
5. Current transformer;
6. Circuit breaker;
7. Feeder Bus isolator
8. BUS;
9. Potential transformer in the bus with a bus isolator

2 TRANSFORMER CIRCUIT:

i) HV side:

1. Transformer bus Isolator
2. Current transformer
3. Circuit breaker
4. Lightning Arrestors
5. Auto Transformer 100MVA (220/132KV)

ii) LV side:

1. Lightening arrestors
2. Bus

3. Current transformer
4. Potential transformer with a bus isolator
5. Circuit breaker
6. A capacitor bank attached to the bus
4. Bus Isolator.

The major stations include a **control room** from which operations are coordinated. Smaller distribution substations follow the same principle of receiving power at higher voltage on one side and sending out a number of distribution feeders at lower voltage on the other, but they serve a more limited local area and are generally unstaffed.

The central component of the substation is the transformer, as it provides the effective interface between the high- and low-voltage parts of the system.

At GETCO,Nasari during Visit.....



View of 220kv Receiving Substation, GETCO, Nasari

Navsari Circle Division wise Substation's Detail (As on 01.01.2013)																
Sr. No.	Name of sub-station	Taluka	Dist	Date of commi.	No. of bays (voltage class wise) (Incl. Capacitor, PT, bus coupler bays etc.)	BUS Details		Max. load of each Bus in MW	Power transfor mer (Voltage ratio wise in KV)	Capacit y in MVA	Max. load (in MVA)					
						Volt	Type cond.				X'mer	s/s				
Navsari Transmission Division																
1	220KV Navsari	Navsari	Navsari	04.04.67	220kv-17	220kv	Twin moose	750	220/66kv	50	37.67	146.6				
										50	40.78					
										100	71.33					
					132kv-08	132kv	Twin moose	156	220/132kv	100	70.77	173.3				
										100	78.00					
										100	77.73					
					66kv-13	66kv	Twin moose	132	66/11kv	15	11.11	28.19				
										15	11.56					
										10	7.22					
2	220KV AMBHETA (CHIKHLI)	Navsari	Navsari	27.03.99	220kv-08	220kv	Twin Zebra	315	220/66kv	100	63.10	93.6				
										66kv-09	66kv		Twin Zebra	90	220/66kv	50
									66/22kv	5	(Stn.Tra.)					
3	66KV MAROLI	Navsari	Navsari	31.03.90	66kv-05	66kv	Panther	11.12	66/11kv	10	6.10	12.35				
														66/11kv	10	6.25
4	66KV EROO	Navsari	Navsari	15.08.72	66kv-06	66kv	Panther	13.37	66/11kv	10	7.12	14.86				
														66/11kv	10	7.74
5	66KV CHHAPRA	Navsari	Navsari	12.04.89	66kv-06	66kv	Zebra	25.91	66/11kv	10	5.75	18.56				
														66/11kv	10	6.15
														66/11kv	10	6.68
6	66kv Gandevi	Navsari	Navsari	28.03.71	66kv-06	66kv	Panther	19.50	66/11kv	10	7.56	14.88				
													66/11kv	10	7.32	
7	66kv	Navsari	Navsari	15.08.	66kv-07	66kv	Panther	13.9	66/11kv	10	7.85	15.44				

	Bilimora			54					66/11kv	10	7.59	
8	66kv Amalsad	Navsari	Navsari	02.09. 02	66kv-04	66kv	Panther	6.25	66/11kv	10	6.94	6.94
9	66kv Chikhli	Navsari	Navsari	07.11. 88	66kv-06	66kv	Panther	52.3	66/11kv	10	6.94	13.67
									66/11kv	10	6.73	
10	66kv Khergam	Navsari	Navsari	14.03. 94	66kv-04	66kv	Panther	9.60	66/11kv	10	5.05	10.10
									66/11kv	10	5.05	
11	66kv Tankal	Navsari	Navsari	20.08. 06	66kv-04	66kv	Panther	30.1	66/11kv	10	5.84	5.84
12	66kv Anaval	Navsari	Navsari	06.08. 87	66kv-06	66kv	Panther	27.5	66/11kv	10	6.10	11.99
									66/11kv	10	5.89	
13	66kv Dolwan	Vyara	Tapi	16.01. 90	66kv-05	66kv	Panther	10.3 7	66/11kv	10	6.83	11.52
									66/11kv	5	4.69	
14	66kv Vansada	VANSAD A	Navsari	02.03. 90	66kv-06	66kv	Panther	18.6 5	66/11kv	5	4.23	10.82
									66/11kv	10	6.60	0
15	66kv Waghai	AHWA	DANG	19.02. 66	66kv-05	66kv	Panther	9.90	66/11kv	5	2.90	5.76
									66/11kv	5	2.86	
16	66kv Ahwa	AHWA	DANG	27.02. 99	66kv-04	66kv	Panther	4.86	66/11kv	5	2.65	5.40
									66/11kv	5	2.75	
17	66KV FADWEL	CHIKHLI	Navsari	02.02. 08	66kv-04	66kv	Panther	16.6	66/11kv	10	5.05	5.05
18	66KV Navsari CITY	Navsari	Navsari	09.08. 08	66kv-04	66kv	Moose	9.81	66/11kv	10	5.32	10.90
									66/11kv	10	5.58	
19	66kv SINGOD	Navsari	Navsari	23.09. 09	66kv-03	66kv	Zebra	3.01	66/11	10	3.35	3.35
20	66Kv SAPUTAR A	AHWA	DANG	20.01. 09					66/11	10	66kv Saputara comm. As switching s/s as on 22.01.10, but 11kv feeders load not taken by DGVCL	

Faculty Detail:

Mr.Rajesh T Patel (H.O.D)

Mr.Bhavesh Patel (Assistant Professor)

Miss.Dharmishtha T Patel

Mr.Ankur P Desai (Assistant Professor)

Mrs.Chetna Patel(Lab Assistant)

Student's details:

45 (Final Year Electrical)

Date: 04.02.2017



Venue:

Gujarat Energy Transmission Corporation Limited(GETCO) ,Navsari

Transmission Division Office,Kabilpore-396424

Navsari Ph.no.(02637) 236058

Snapshot at time of Demonstration held by Engineer of Switchyard, GECTCO



**Snapshot at time of Demonstration held by Engineer of Current Trnsformer,Isolator,PT etc..
at GECTCO**







Group Photo of all the students, Faculties of GIDC Degree College, Abrama & Engineers of GETCO,navsari

Feedbacks:

1. Prof.Rajesh T Patel (Faculty of GIDC Degree Engineering,Navsari)

It is great experience of GECTCO, Navsari Visit involves on field working and live inspections of Power system switchgears like CT, PT, Breakers, isolators, Transormesrs, PLCC, Bus bar systems, Earthling Switch. It will help to final year students to understand practical Explorer of 220 kv Receiving substation and it's working. Also it will good the information about controlling

room, battery room and relay system for different kinds of power system faults and their control.

2. Prof.Bhavesh Patel (Faculty of GIDC Degree Engineering, Navsari)

It is nice industrial visit at GETCO; Navsari. It will help to students in their studies also. I have gather lot of information about 220 kv and 66 kv receiving Substation & their working.....Control Room, Relays, Battery room etc.

3. Prof.Ankur P Desai (Faculty of GIDC Degree Engineering, Navsari)

It is nice experience industrial visit at GETCO. I think that practical performances, industrial visit and active learning are also given equal important in syllabus of subjects.

4. Student-

It is nice visit. I got lot of information about working of CT, PT, Breakers, and Transformers etc.

5. Student-

It is exciting to see how control system works. It is beyond the typical text book of our study.

Report Compiled and edited by,

Ankur P Desai

Assitant Professor,

Electrical Engineering Department

GIDC Degree Engineering College,Abrama

Annexure-1 Permission letter by GIDC Degree Engineering College

GIDC Degree Engineering College

(Approved by AICTE and Affiliated to Gujarat Technological University)
(Managed by GIDC Education Society)

Abrama, Ta : Jalalpore, Dist. : Navsari - 396 406

E-mail : gidcen@col@gmail.com
Website www.gidc.in

Phone (02637) 229040

Ref No : 6dec/Adm/Indvisit/2016-17/3343

Dt. : 11/01/2017

To,
The Superintending Engineer,
Gujarat Energy Transmission Corporation Limited (GETCO)
Transmission Division Office, Kabilpore-396424
Navsari.Phone.no (02637)236058

SUBJECT: Permission for field Visit for B.E Electrical Engineering Final (4th year,
Sem-8th) Students.

Dear Sir/Madam,

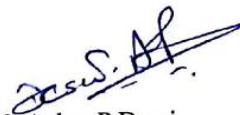
As you may be aware, GIDC Degree Engineering College, Village-Abrama, Taluka-Jalalpore, Dist- Navsari is the first PPP Mode College of the "GIDC EDUCATION SOCIETY, GANDHINAGAR" Supported by Government of Gujarat. The college offers bachelor degree courses in Electrical, Mechanical, Civil, Automobile and Computer engineering.

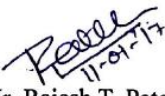
Apart from the curriculum, we encourage students to undertake field visit to industries of repute to further enhance their knowledge. We feel it will be fruitful that the students with academic background of electrical power have a glance of the generation, distribution and transmission of power in order to have a better appreciation of practical exposure for real time process.

In above background, we would like to send strength of about 65 students of B.E. Electrical Engineering accompanied by 03 staff members to visit your esteemed industry preferable any date of JAN-2017.

We request you to kindly accord the necessary permission for site visit of Gujarat Energy Transmission Corporation Limited (GETCO) Transmission Division at NAVSARI, Gujarat. Let us know the date of visit as per your convenience.

We shall be grateful for a favourable response.

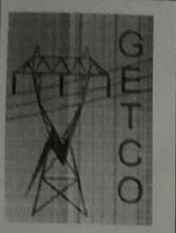
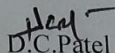

Mr. Ankur P Desai
Assistant Professor;
Electrical Engineering;


Mr. Rajesh T. Patel
Head of Department,
Electrical Engineering,



Dr. K.N.Mistry

Annexure-2 Permission letter by GETCO

	<p align="center">GUJARAT ENERGY TRANSMISSION CORPORATION LTD.</p> <p>Regd. Office: Sardar Patel Vidyut Bhavan, Race Course, VADODARA -07 Phone : (0265) 23230583-86 Fax No. (0265) 23380238 233823-5 Superintending Engineer (TR) Transmission Circle office, Navsari, Kabilpore - 396424 Telephone No. (02637) 236232 /236274 Fax No.(02637) 236104 Corporate Identity No (CIN): U40100GJ1999SGC036018 Web site: www.getcogujarat.com Email:setrnavsari.getco@gebmail.com</p>
No. TCNS/HR/	Date :-
To, The Head Of Department. GIDC Degree Engineering .College Abrama.Ta.Jalalpor Dist.Navsari.	0483 30 JAN 2017
<p>Sub :- Regarding to allow visiting GETCO by N.G.Patel Plite GIDC Degree Engineering College Abrama For Educational Tour.</p>	
<p>Ref :- GIDC Degree Engineering College Abrama Letter No. GDEC /ADM/Indvisit/2016-17/3343.</p>	
<p>With Reference to the above, subject matter your Institute is willing to visit GETCO 220kv Navsari sub station.</p>	
<p>Total student 65 student and 03 Faculty of B.E .Electrical Engineer final year (4th year and sem-8th) Electrician trade. they will visit for 1 days i.e .on dtd.04.02.2017 in three batches at different date in there batches, in consultation with E.E.(TR) Navsari.</p>	
<p>The permission is given subject to following terms and condition.</p> <ul style="list-style-type: none"> * They will not be paid any remuneration or stipend during this period. * They will have to follow instruction of authorized officer of GETCO. * In no circumstances, they will be considered GETCO's employee. * Company shall terminate this arrangement at any time without assigning any reason. * They will not have any access to confidential & important information * No facility like accommodation, transport, etc, will be available to them. * In no circumstances, GETCO will be responsible for any injury or accident arising out of and in the course of assignment. * They will observe the general discipline and follow the instructions given to you from time to time by the unit head. * The trainee student has to observe all safety measures and precautions desired by s/s in- charge during the training period. 	
<p>This is for your information & further needful please.</p>	
<p align="right">  (D.C.Patel) Superintending Engineer (TR) Navsari </p>	

Annexure-3 Permission/Undertaking by Teachers/ Parents/Guardian

**Letter of Undertaking for industrial tour given by
Parents/Guardian**

Date:

To,
The Principal
GIDC Degree Engineering College,
Abrama, Navsari

Dear Sir,

SUB: Submission of "Industrial Tour Undertaking"

We, Mr./Mrs. _____ parents of
_____ bearing _____ enrollment number
_____ studying in _____ Semester, Department of
_____ in GIDC Degree Engineering College Abrama,
Navsari herewith voluntarily submitting the under taking.

We, the undersigned parents/guardian are aware that, our son/daughter is participating in the industrial tour organized by the Institute scheduled during _____ with our full acceptance and will be bearing all the expenditure incurred for the Industrial tour towards travel and other expenses from our end.

We shall ensure that our son/daughter shall abide by the college terms and conditions for industrial tour. We , hereby declare and confirm that the college shall not be held responsible in the event of any misfortune or accidents and/or personal injuries whether fatal or otherwise involving our son/daughter.

We shall undertake full responsibility of all the consequences should any other person or body suffer such accidents and/or personal injuries and/or damage to property as a result of our son/daughter negligent act during the period of industrial tour. We further confirm that the college shall not be held responsible for our son/daughter misconduct or wrongdoing at all times during the period of industrial tour and shall obey the instructions of the faculty members who are accompanying during the industrial tour.

Yours sincerely,

(Parents/Guardian's Signature)
Name of the Father: _____
Name of the Mother: _____
Name of the Guardian: _____
Contact Address: _____
Contact Phone No: _____

Signature of the student

The image shows a document with a table. The table has several columns and rows. The text is extremely faint and blurry, making it impossible to read. There are some dark spots that might be ink or marks on the paper, but they are not identifiable. The overall appearance is that of a scan of a document that is out of focus or has very low contrast.