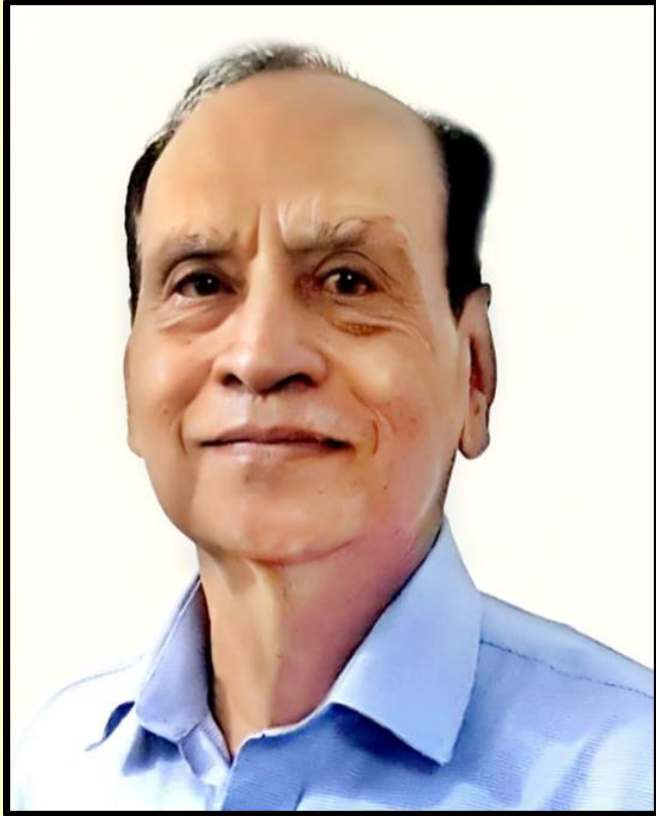




SPE' Newsletter

SPE(I), Vadodara Chapter

April, 2024 Issue: 2/2024



**Er. N. Dinker founder Chairman of
SPE (I) Vadodara Chapter**



08th March



22nd March

**The Society of Power Engineers (India)
Vadodara Chapter (Estd. 1996)**

**FF-48, Avishkar Complex, Near Vidyut Nagar Colony,
Old Padra Road, Vadodara – 390 007**

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OFFICE BEARERS & EXECUTIVE COMMITTEE MEMBERS FOR 2023-24



Er. MR Tilwalli
Chairman



Er. RS Shah
Vice-Chairman



Er. YV Joshi
Secretary



Er. NG Yadav
Treasurer



Er. VB Harani
Jt. Secretary



Er. SP Trivedi
Jt. Secretary



Er. MN Pandya
Member



Er. YD Mehta
Member



Er. Parag Parmar
Member



Er. Umesh Parikh
Member



Er. Bharat Dalwadi
Member



Er. SMS Baxi
Member

ADVISORY COMMITTEE MEMBERS FOR 2023-24



Er. PA Shah



Er. BN Raval



Er. SM Godkhindi



Er. JK Surti



Er. NV Lathia



Er. NC Solanki



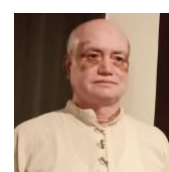
Er. HD Joshi



Er. PP Shah



Er. Gitesh Chitaliya



Dr. AJ Chavda



Ms. Sangeeta S Godkhindi



Ms. Sheetal Shinkhede



Ms. Hetal Praiapati



Er. Hemant Nashikkar



Dr. SK Sharma

PATRONS



Er. PH Rana



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Dr. Satish Chetwani



Er. GV Akre

EDITORIAL BOARD

Er. . Umesh Parikh

Er. SM Takalkar Er. PH Rana

Er PA Shah Er. SM Godkhindi

SPECIAL INVITEE TO THE COMMITTEE

OFFICE ADMINISTRATION COMMITTEE

Er. SMS Baxi Er. SM Godkhindi Er. NC Solanki

Er. HD Joshi

CHAIRMAN'S DESK



Dear Readers,

I welcome you all to this edition of SPE Newsletter.

Many things have happened in the quarter ending on 31 Mar 2024. Some good, some bad.

I am very sorry to inform you that the SPE(I) Vadodara lost one of our revered and senior most members Er. N Dinkar. He was the Founder Chairman of SPE(I) Vadodara, He held that post for 13 years.

Through his efforts and his team SPE(I) Vadodara has come to this level. We are grateful to him and his team for the great work done by them.

Unfortunately, I had no opportunity to work with him but I learnt through many SPE members that he was a great technocrat and a great individual.

Many members have written articles on him in this edition. Kindly go through it to get a glimpse of him and his career. On behalf of the SPE(I) Vadodara I mourn his death and pray may God rest his soul in peace.

The quarter saw some more members in addition to Er. N Dinkar, passing away. Our deepest sympathies to the bereaved families.

Due to some unavoidable reasons the SPE(I) Vadodara could not conduct monthly lectures for 2 consecutive months. We, the committee, are sorry for that.

However, we arranged a lecture from the two faculty members of Parul Institute of Technology on the “**Software for Power System Analysis and Solar Power**” facts and figures installed at Modhera in Gujarat, the first solar town of Gujarat.

The lectures were appreciated and attended by many members.

On the brighter side:

The SPE(I) members were very active in roping in more members for the SPE(I) Vadodara and they were very successful. We registered about 10-12 new members, most of them as **Life Members**, I welcome them to SPE(I) Vadodara. I request all the members to maintain the pace of the enrollment.

The SPE is in the process of acquiring new premises in place of the old one. SPE(I) Vadodara members have already passed a resolution to that effect. Formalities of Bank loan is being worked out and by the end of next quarter SPE(I) Vadodara may have a new office in Manjalpur.

The CBIP in association with ERDA have arranged a 2-Day Seminar on 25-26 Apr 2024. SPE(I) Vadodara is assisting them in arranging the Seminar at Grand Mercure Vadodara Surya Palace.

We are planning to have a **2-Day Seminar** on “**Industrial Automation**” in **Jun-2024**. We have contacted interested parties. We hope to get a very good response from the members and delegates as the subject is very interesting and important. More details will be shared in due course. The Chapter is also planning to have events on “**Transformer Oil and Distribution Transformer**” very soon. All these events will help in generating corpus and strengthen the coffer of the Chapter.

The financial year has ended. General Elections of Parliament are being held in the month of April and May this year. Let us hope that the newly elected Government will be stable and take the country forward. I appeal to all members to cast their votes without fail. After all, democracy is of the people, by the people and for the people.

Jai Hind

Er. Mohan R Tilwalli

EDITOR'S DESK

Dear Readers



Er. N. Dinker, former Member (Tech) of erstwhile GEB and the **Founder Chairman** of SPE(I), Vadodara Chapter, left for his heavenly abode on

25 Feb 2024 at Vadodara, due to age related illness.

Er. Dinker was exceptional load despatcher and humanist. His dedication to the load management was unmatched and his sterling work at LDC, Jambuva was well noticed by the Power Engineering fraternity in Gujarat & India. He played pivotal role in meeting the demand of reliable power supply by one and all sections of society when power shortage was at its peak in the State. He practiced grace, elegance and kindness throughout his passionately lived life. He will be always remembered for his humorous nature, wittiness and graciousness even in critical times. Befitting tribute to **Er. Dinker is "Say not in grief he is no more but in thankfulness he was"**.

Editorial Board humbly beg apology of Members, if their feelings are not properly justified in accommodating nostalgic memories with **Er. Dinker**.

The SPE(I) has also lost other three Life Members **Er. AC Takalkar**, **Er. JB Shah** and **Er. RA Surti** in this period. We pray to almighty to bestow peace to the gentle souls and give strength to their family members to bear the great loss.

Rest in peace departed noble Souls!

Now, as the summer inches closer in couple of weeks, temperature is expected to increase gradually in most part of the country resulting into higher numbers of extreme heat wave. This ultimately leads to conclude that India's Peak Electricity demand is likely to set another

record during this year. **Central Electricity Authority (CEA)** has estimated peak power demand to increase by 7% year-on-year in 2024 and could touch **260GW** in summer. Last year peak power demand crossed **243GW** against projected **230GW**. Demand deficit remained manageable during these days. In order to cope with the projected peak demand of 2024, augmentation of electricity infrastructure by introducing new coal-based generation capacity of 20GW is essential. It will also be prudent step, if government revisit implementation of lower **Renewable Generation Obligation (RGO)** of 6% to 7% from the current level of **40%** for new coal and lignite power plants. This will certainly incentivise new thermal generation. RGO is nothing but minimum Renewable Energy generation capacity required to ensure guaranteed power supply. On the coal front, the country is placed comfortable as compared to last three years. The coal plants will have exclusive stock of around **45 Million tonnes** of coal by the end of current Financial Year. Despite, increase in RE penetration, coal-based generation remains predominant source and still have major share of around 70% to the total power generation. RE with storage facility is not economical today because of its higher capital cost. We have not yet come out in a big way for battery storage and our country aims to have electricity rates affordable.

Recently, Ministry of Power (MoP) has released 12th Annual Integrated Rating & Ranking for Power Distribution Utilities. This exercise aims to bring out annual performance status of DISCOMs based on a comprehensive study. The rating data provides DISCOMs with deep insights into their performance and also highlights well performing utility and enable them to initiate corrective measures and adopt better practices. All 4-State owned DISCOMs of Gujarat have secured **A+ Grade** consecutively for **12** times indicating exceptionally strong financial and operational

(Contd. on page-5)



CHAPTER'S ACTIVITIES

- On **19 Jan 2024**, Chapter organized an evening lecture on the topic **“Grow Money and Wealth by Investment in Mutual Fund”** at Hotel Tarasuns, Gotri.



Er. MR Tilwalli, Chairman, SPE(I) Vadodara greeting **Mr. Krunal Nikam**, Speaker with bouquet.



Er. Tilwalli, Chairman & **Er. Harani**, Jt. Secretary presenting memento to the Speaker.

The speaker was **Mr. Krunal Nikam**.

Mr. Nikam gave ideas about the right way to invest in Mutual Funds.

The Programme was appreciated by all member participants.

The event was sponsored by **“Franklin Templeton Mutual Fund** with support of **Marfatia Stock Broking Pvt. Ltd.”**

- On **18 Mar 2024**, a joint lecture programme was organised by IE(I) Vadodara and SPE(I) Vadodara Chapter on the topic of **“Technological and various Industrial Applications of Composite Material”** at Vasvik Auditorium, Vadodara.

The speaker was **Er. (Dr.) Piyush P Gohil**, Head and Associate Professor, Mech. Engg. Deptt., FTE, MSU, Vadodara.

The speaker presented research work being done in MSU on Composite Material. He stated that in every manufacturing industry, the metal is being replaced by composite material like FRP & GRP. He went on to add that even electrical appliances and heavy equipment like transformers and breakers are now found to be inclusive of composites. The car and automobiles are using them in large quantity.

The lecture generated lot of debate. About 120 members attended the programme.

- On **21 Mar 2024**, Chapter organized an evening lecture on the topic **“Power World Software for Power System & Solar Power Plant with Battery (Back-up) Energy Storage System”** at Vasvik Auditorium, Vadodara.

The speakers were **Er. Ashish Shah**, Asst. Prof. and **Er. Binal Modi**, Asst. Prof., PIET, Limda, Vadodara. Both are **Life Members** of SPE(I) Vadodara.



Er. MR Tilwalli, Chairman, SPE(I) Vadodara presenting **Welcome Address**.

Er. Ashish Shah delivered a lecture on **“Power World Software for Power System Study”**. He demonstrated the use of new software which can do simulation in the same manner as being done by other popular software like e-Tap, MiPower, Mat Lab etc.

He covered the following in his presentation.

- The simulator can handle with 2,50,000 Buses.
- Operation of the software/simulator for various electrical parameters.
- Use of ribbon, interface for integration of various menus etc.
- Power flow analysis tool and its sensitivity.
- Use of edit mode to create/modify the existing case.
- Procedure to enter a bus/node in the software.
- Bus option dialog
- Entering a dialog on generator, transformer, motor, capacitor, condenser etc.
- Preparation of One Line Diagram with colour coding.
- IEEE 5-bus system example.

In her presentation on **“Solar Power Plant with Battery (back up) Storage System”**, **Er. Binal Modi** covered following:

- The Modhera town Solarization at the cost of Rs. 88 Cr. Shared by State & Central Govt.
- Ground mounted Solar Power Plant (6MW) and detailed calculation.
- Block diagram of the system.
- 15MWH Battery storage system with calculation.
- EV system and
- Roof top Solar plant on Residential and Govt. buildings.
- Benefits of the project.



Er. VB Harani, Jt. Secretary
presenting **Vote of Thanks**

The speakers were felicitated by Chairman, SPE (I) Vadodara and **Er. (Dr.) Satish Joshi**, Life Member of SPE(I).

Vote of thanks was presented by **Er. VB Harani**, Jt. Secretary and event anchoring was done by Er. PA Shah, Advisory Committee Member.

About **150** members participated the programme.

- **On 21 Mar 2024**, the **Chapter** organized a Special General Meeting at 18.30 Hrs. at Vasvik Auditorium, Vadodara. About **123** members of Society of Power Engineers (India), Vadodara Chapter were present in the Meeting. The special meeting was held for **“Acquisition of new premises for the office of the Chapter of SPE Vadodara”**.

Report of the above meeting is brought out in this issue.

- **On 22 Mar 2024**, a joint lecture programme was organised by IE(I) Vadodara and SPE(I) Vadodara Chapter on the occasion of celebration of **World Water Day** on **“Levering Water for Peace”**. The speaker was **Er. Naresh Gor**, Hydrologist, PH Mech. Circle, GWSSB, Vadodara.

Er. Gor presented a case study on Trans-boundary (Indo-Pak) Hydrological Study at Saraswati and Indus Paleo Deltas in Rann of Kutchh.

He explained in detail how the search for potable water was made by the Govt. Water Supply Deptt. By making a bore of 135Mt. and tap the water of river Saraswati flowing below the saline strata. He stated that large quantity of water is sourced without any pumping. This is helping a lot to the BSF jawans to tide over the freshwater requirement along Pakistan Border.

Due to expected delay in arrival of Er. Gor. IE(I) Vadodara requested **Dr. Asutosh Mehta** to talk on **“Food and Lifestyle”**. He briefed the members present regarding healthy food for avoiding illness and also cure many diseases. The lecture was responded by many members present in the Hall.

Er. YV Joshi
Secretary

Minutes of Special General Meeting of SPE (I) Vadodara Chapter held on 21 Mar 2024

A special General Meeting was held on 21 Mar 2024 at 18.30 Hrs. at Vasvik Auditorium, Vadodara. Approximately 123 members of the Chapter were present in the Meeting. The special meeting was held for “**Acquisition of new premises for the office of the Chapter of SPE Vadodara**”.

Er. YV Joshi, Secretary presented the agenda.

Resolution:

The members present in the special meeting held on 21 Mar 2024 deliberated & discussed the presented agenda and decided and resolved to purchase new premises in Monalisa Business Centre, B-Wing, Near Railway Crossing, Manjalpur, Vadodara-390 011. Office Numbers 414 and 415. The area of construction of each office is approximately 42.85 Sq. Meter (Total area of construction of two offices is 85.70 Sq. Meter). Further, it is resolved that a sub-committee comprising the **Chairman, Vice-Chairman, Secretary, Joint Secretaries, Treasurer, Er. PH Rana and Er. SM Takalkar** are empowered

to negotiate the rates, terms & conditions and finalize the deal with the seller. Further, it was resolved that the above members of sub-committee shall negotiate terms and conditions and interest rates to avail loan from the Bank and sign all the documents, on behalf of the SPE Vadodara Chapter.

The action taken in the matter may be informed by the Sub-Committee to the Executive Committee Members of Vadodara Chapter from time to time till the possession of the Property is taken.

(Contd. from page-2)

From The Editor's Desk

performance. Recognizing this achievement, SPE(I), Vadodara congratulates Engineers of all DISCOMs for their consistently maintaining brilliant performance and placing Gujarat as a flagship power sector state in the map of India.

Wishing all members/readers and their families, a summer filled with laughter and unforgettable moments.

Er. Umesh Parikh

NEW LIFE MEMBERS/FELLOWS

GR No.	Name	Grade	GR No.	Name	Grade
2432	Jignesh P Patel	LF	2439	Pratik P Trivedi	LM
2433	Haripoojan S Chauhan	LM	2440	Navinchandra C Moteria	LM
2434	Rajendra M Athavale	LM	2441	Viththalbhai P Vekaria	LM
2435	Vilok S Kasture	LM	2442	Vinodrai G Dadhanania	LM
2436	Neetu (Ms) V Kasture	LM	2443	Mukeshbhai A Patel	LM
2437	Nikhil V Menon	LM	2444	Rucha (Ms) S Bedarkar	LM
2438	Nishith J Shahu	LM	2445	Sonam (Ms) A Chauhan	LM

MEMBER IN NEWS



Er. Babubhai K Rakholia, LM, SPE(I) Vadodara has been granted a Patent for an invention entitled “**LINE INSULATOR STRING FLASH OVER CUM REPORTER**”.

Congratulations to **Er. Rakholia** on his achievement

REMEMBERING FOUNDER CHAIRMAN ER. N. DINKER



Er. N. Dinker, **Founder Chairman** of SPE (I) Vadodara **Chapter** left for his heavenly abode on **25 Feb 2024**. He was 88. He had joined Erstwhile Gujarat Electricity Board as a Deputy Engineer and retired as a member (Technical). Most of his career spanning more than 3 decades, he worked for Load Despatch Centre Jambuva. He was always regarded as a best controller of Power System of Gujarat.

While he was holding the post of Member (Tech.) in GEB, he was requested by the Central Board of Irrigation and Power (CBI&P) to open a Chapter of the Society of Power Engineers (India) in Vadodara.

In turn **Er. N. Dinker** entrusted the work of initiation of Chapter to the undersigned. **Er. Dinker** whole heartedly supported the budding Chapter of SPE in Vadodara.

He used his good offices with the management of GEB as well as those with other stake holders like Contractors, Suppliers & Industry and helped the Chapter in developing initial Corpus. He was instrumental in roping in Senior and Junior cadre engineers of GEB for

the enrolment as a member of SPE (I) Vadodara.

He had shared the dais with **Er. Koelho** (the then Chairman GEB), **Er. Nanubhai** Amin (Chairman, Jyoti Limited) and officials of CBI & P, on the inaugural function of the Chapter on **03 Oct 1996**.

Even after retirement, people respected him throughout Gujarat. He used his good will for the development of Vadodara Chapter of SPE. He was always present for the evening Lecturers, Seminars and Workshops organised by the Chapter, unless he was pre-occupied. He had a good sense of humour and contributed articles in SPE Newsletter (House journal of SPE Vadodara).

He had special liking for cultural events organised by the Chapter. He used to attend all of them without a miss.

His command in English language was par excellent. He, as a founder Chairmen of the Chapter lead the committee members from front for 13 years in a row.

Despite holding high post in GEB, he was down to earth and available to everyone. During his tenure as a Member (Tech.) in GEB he used to send birthday greetings to all the HO staff member irrespective of their status and cadre in which they were working.

Being a Secretary of SPE (I) Vadodara Chapter, I had developed a special bond with him. Last, we all had seen him on **07 Dec 2023** during a Conference on Civil Engineering organised by the Chapter in FGI Auditorium. In spite of his deteriorating health, he was jubilant. He met everyone and exchanged pleasantries on that day.

In his death, the SPE(I) Vadodara has lost a well-wisher and an active supporter. May God Give peace to the departed Soul & give strength to his family members to bear the impact.

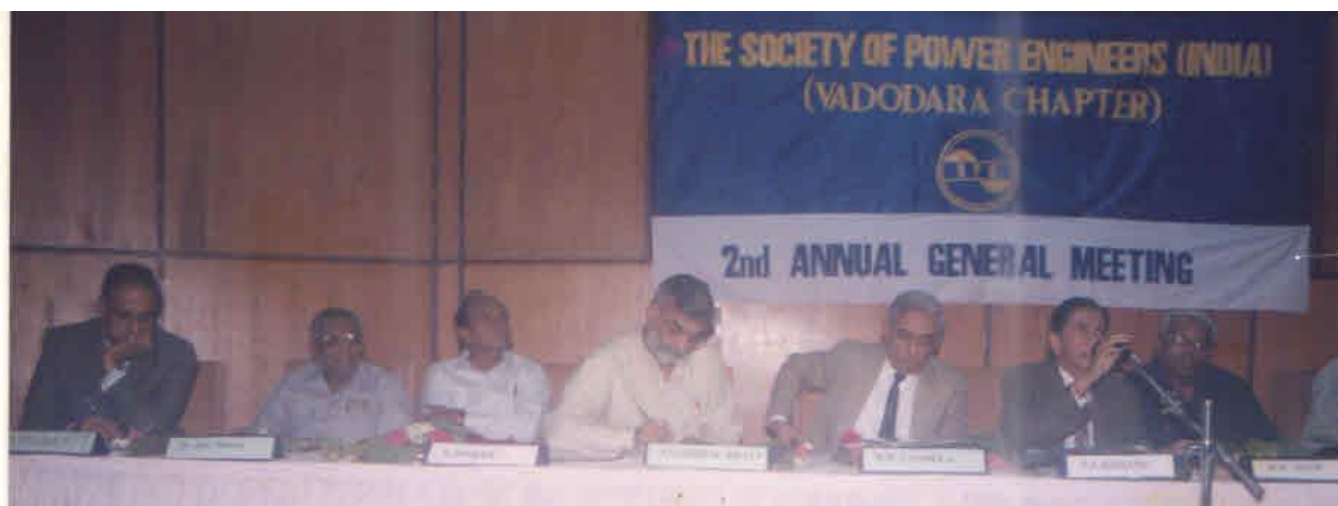
Er. SM Takalkar

Former Vice-Chairman
& now a Patron Member

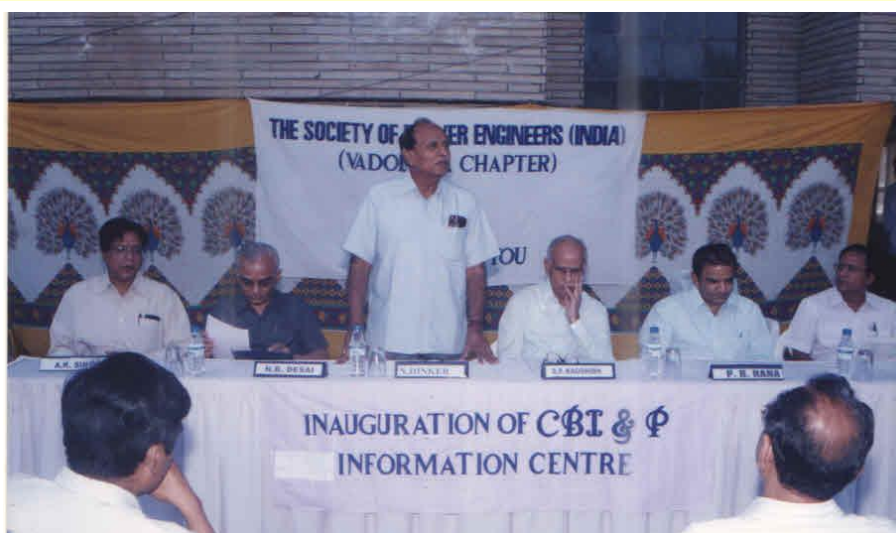
**SAY NOT IN GRIEF HE IS NO MORE BUT IN THANKFULNESS HE WAS
SWEET MEMORABLE EVENTS WITH FOUNDER CHAIRMAN N. DINKER**



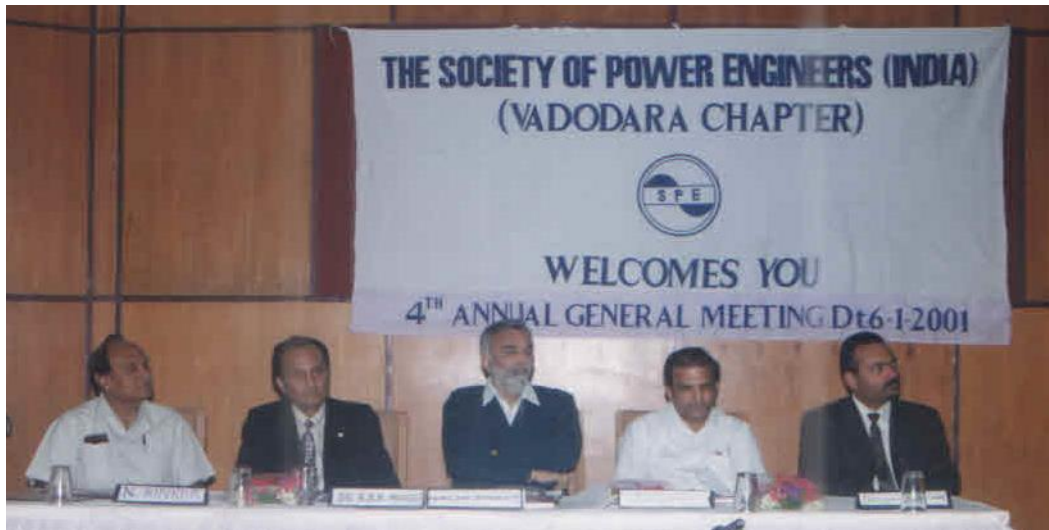
Inauguration of **Vadodara Chapter of The Society of Power Engineers (I)** on **03 Oct 1996** by lighting Holy Lamp by the then Chairman of erstwhile GEB **Shri Coelho** and Chairman of Jyoti Ltd. **Er. Nanubhai Amin**
(L to R) **Dr. Ramamoorthy**, Director-ERDA
Er. N Dinker,
Er. Nanaubhai Amin,
Shri Coelho, **Er. CVJ Verma**, Secretary-CBIP
Dr. KK Thakar, Founder Vice-Chairman.



(L to R) **Dr. Ramamoorthy**, **Dr. BG Desai**, **N. Dinker**, **Shri Nalin Bhatt**, the then Chairman of erstwhile GEB, **Er. KK Waghela**, **Er. PJ Damani**, **Er. PM Shah** during AGM

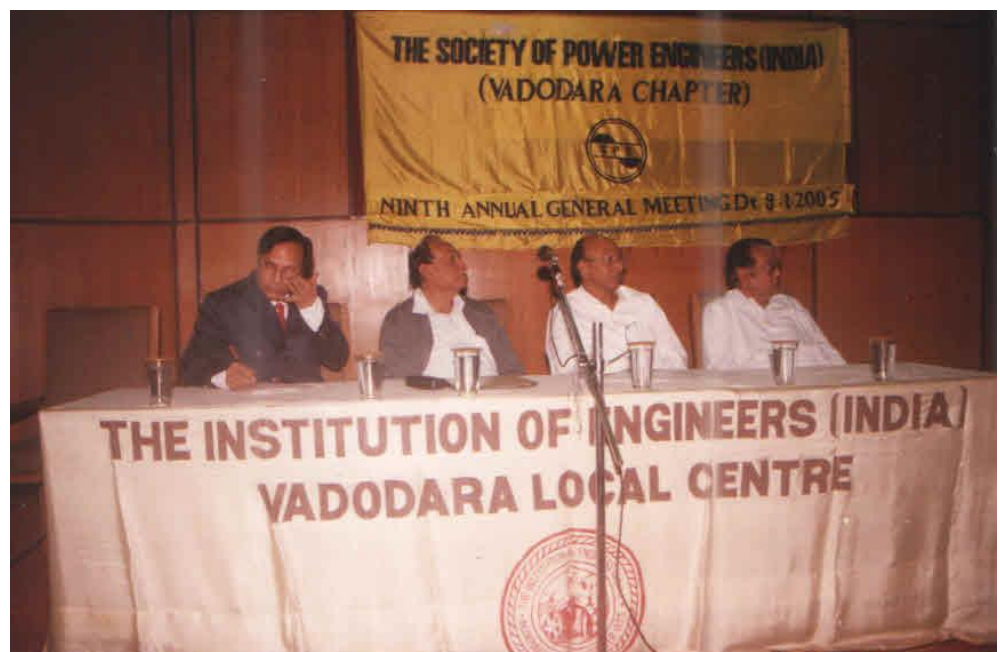


Inauguration of **"CBI&P Information Centre"** at **SPE(I) Vadodara Chapter's office**.
L to R **Prof. AK Singh**,
Er. NB Desai, **Er. N Dinker** addressing the gathering present at the event,
Er. SP Kaushish,
Er. PH Rana, **Er. SM Takalkar**



4th AGM

L to R
Er. N Dinker,
Dr. BSK Naidu,
Er. Nalin Bhatt,
Er. PH Rana,



9th AGM

L to R
Er. SM Takalkar
Er. N Dinker,
Er. GV Akre,
Er. GJ Bajaj



Inauguration of
Seminar
organized to
mark completion
of “100 years of
**Power
Transmission
in India**” by
lighting Holy
Lamp by Er. SM
Takalkar.
Er. N Dinker



Inauguration of
**“Workshop on Thermal
 Power Plants”** by lighting
 Holy Lamp by
 Er. Nalin Bhatt &
 Dr. Anil Kane
 Er. SM Takalkar extreme
 left,
 Er. N Dinker extreme right
 (Celebrating 100 years of
 Power Generation in India)

Er. N Dinker delivering
Welcome Speech
 during
Seminar on
**“Application of Power
 Electronics in Power
 System”**
 L to R
 Er. NV Rede,
 Dr. Ramamoorthy,
 Er. KK Bhatia,
 Er. GJ Bajaj, Er. N Dinker

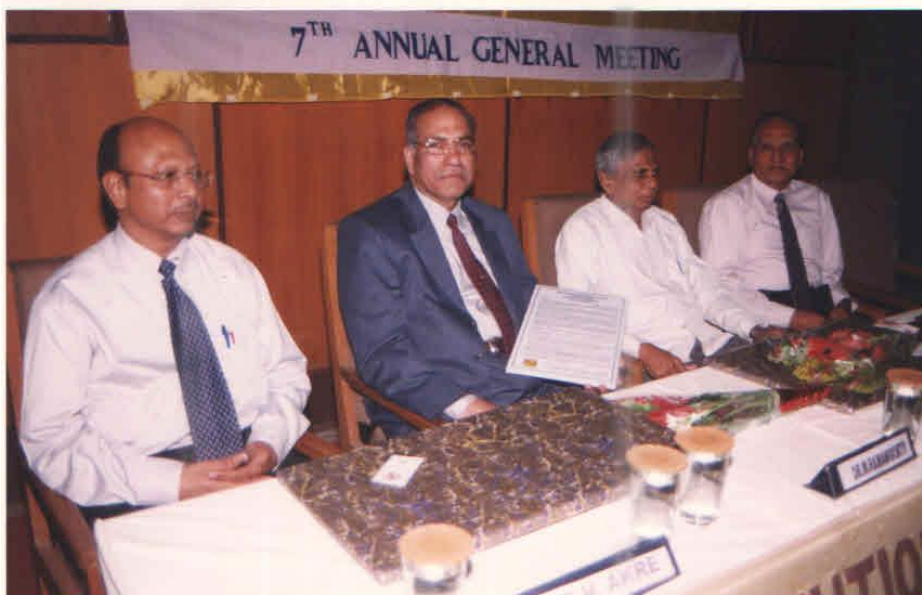


Er. N Dinker delivering
Welcome Speech
 during
Evening Talk on
**“Neno-technology &
 Microbiotics in Health
 & Diseases”** by
Dr. CS Buch, MD



Er. N Dinker greeting the **Sponsor** with flower bouquet during **Seminar** organized at Surat.
Er. SM Takalkar looks on

Er. N Dinker felicitating the **Sponsor** with memento during **Seminar** organized at Surat.



7th AGM
L to R
Er. GV Akre
Dr. Ramamoorthy
Dr. BG Desai
Er. N Dinker



April Fools' Day also called All Fools' Day is celebrated every year on 1 April by playing practical jokes and spreading hoaxes. The jokes and their victims are called April Fools. People playing April Fool Jokes expose their prank shouting April fool. Some newspapers, magazines, and others published a report on fake stories, which are usually explained the next day or below the news section in small letters. Although popular since the 19th Century, the day is not a public holiday in any country.

What is April Fool Day? It is commonly believed that in medieval France. New years were celebrated on April 1st. Then in 1562, Pope Gregory introduced a new calendar for the Christian World changing New Years to January 1st. With no modern communications, news travelled slowly, and new ideas were often questioned. Many people did not hear of the change, others chose to ignore it, while some merely forgot. These people were called fools. Invitations to non-existent 'New Year' parties were sent and other practical jokes were played. This jesting evolved over time into a tradition of playing pranks and jokes on 1st April every year.

એપ્રિલ ફૂલ ડે નો ઇતિહાસ: ૧ એપ્રિલ ના રોજ ફૂલડે એટલે કે “એપ્રિલ ફૂલ ડે” સમગ્ર વિશ્વમાં ઉજવવામાં આવે છે. આ દિવસે લોકો તેમના મિત્રો, નજીકના લોકો અથવા પરિવારના સભ્યોને મુર્ખ બનાવીને આ દિવસની ઉજવણી કરે છે. લોકો સાથે મજાક કર્યા પછી, તેઓ ઉત્સાહમાં એપ્રિલ ફૂલ ડે ની બુમો પાડે છે. પહેલા આ દિવસ ફ્રાંસ અને કેટલાક અન્ય યુરોપિયન દેશોમાં જ ઉજવવામાં આવતો હતો. પરંતુ ધીમે ધીમે સમગ્ર દેશોમાં એપ્રિલ ફૂલનો દિવસ ઉજવવા લાગ્યો.

એપ્રિલ ડે શા માટે ૧ લી એપ્રિલ ના રોજ ઉજવવામાં આવે છે? તેના કોઈ નક્કર પુરાવા નથી. પરંતુ તેના વિષે ઘણી વાર્તાઓ પ્રચલિત છે. જેમાંથી એક મુજબ એપ્રિલ ફૂલ ડે ની શરુઆત ૧૩૮૧ માં થયેલ. એવું કહેવાય છે કે તે સમયે રાજા રીચાર્ડ જીતી અને બહેમીયાની રાણી એને જાહેરાત કરી કે તેઓ ૩૨ માર્ચ ૧૩૮૧ ના રોજ સગાઈ કરવા જઈ રહ્યા છે. સગાઈ ના સમાચાર સંભાળીને જનતા ખુશ થઈ ગઈ. પરંતુ ૩૧ માર્ચ ૧૩૮૧ ના રોજ લોકો સમજી ગયા કે ૩૨ માર્ચ બિલકુલ આવતી નથી. આ પછી લોકોને સમજાયું કે તેઓ ને મુર્ખ બનાવવામાં આવ્યા છે. એવું કહેવાય છે કે ૩૨ માર્ચ એટલે કે ૧લી એપ્રિલને ફૂલ ડે તરીકે ઉજવવામાં આવે છે.

ભારતમાં તેની શરુઆત ક્યારે થઈ? સમગ્ર વિશ્વમાં ૧લી એપ્રિલના રોજ એપ્રિલ ફૂલ ડે ઉજવવાની અલગ અલગ રીતો છે. ઓસ્ટ્રેલીયા, ન્યુઝીલેન્ડ, ઈન્ડોનેશિયા અને આફ્રિકન દેશોની વાત કરીએ તો ત્યાં માત્ર ૧૨ વાગ્યા સુધી જ ઉજવવામાં આવે છે. તે જ સમયે કેનેડા, અમેરિકા, રશીયા અને અન્ય યુરોપિયન દેશોમાં ૧ એપ્રિલના રોજ સમગ્ર દિવસ દરમિયાન એપ્રિલ ફૂલ ડે ઉજવવામાં આવે છે. કેટલાક અહેવાલો અનુસાર, આ દિવસની શરુઆત ભારતમાં અંગ્રેજો દ્વારા ૧૯ મી સદીમાં કરવામાં આવી હતી. આજના સમયમાં ભારત માં પણ આ દિવસે લોકો મજાકમસ્તી કરતાં હોય છે.

Compiled by
Er. PA Shah & Er. JK Surti

PAST MEMORIES WITH FOUNDER CHAIRMAN ER. N. DINKER

Er. N. Dinker was a very honest, sincere, dedicated and hardworking person. His motto of life was “**Simple living and High Thinking**”. He never lost his temperament whenever we entered his cabin. When I was living at Muktinagar, Vadodara, I had opportunity to see him at his home.

After retirement, **Er. N Dinker** along with **Er. SM Takalkar** came to my cabin when I was **Addl. Chief Engineer (Tr.) GETCO, Mehsana**. I offered my chair to sit him there. But he very politely refused to sit on the chair of Additional Chief Engineer (Tr), GETCO, Mehsana. He simply advised me that the chair was not meant for any retired person. He compelled me to sit in my chair and then after further discussion was held. This incidence brought me closer to him.

In fact, we have lost a noble person.

My heartfelt condolences to his family members.

I pray for the soul to attain Moksh.

Er. PB Shukla
Life Member

I knew **Er. Dinker** for his contribution to the development of Load Despatch Centre at Jambuava. I was fortunate to participate in a Training-cum-Seminar on use of “**Clip on Meter**” conducted by him many years back. His explanation & demonstration was excellent.

He gave details of the equipment which was considered as a handy tool to record the current passing through a coated conductor. He was very simple and down to earth individual.

Prayer to almighty for peace to the departed soul.

Er. YK Sharma
Former Jt. Secretary

Er. N Dinker as a **Founder Chairman** of Vadodara **Chapter** of Society of Power Engineers (I) and I, being a founder LM and founder EC member my journey of SPE(I) Vadodara commenced way back on **03 Oct 1996**, foundation day of SPE(I) Vadodara **Chapter**.

Thereafter, in 1997, he and **Founder Secretary Er. SM Takalkar** proposed to launch SPE Newsletter. I was fortunate enough to be selected as the first & maiden Editor of SPE Newsletter a quarterly house publication. I could successfully carry out this duty till the year 2000 only because of the inspiring guidance and direction of the above legendary duo and with the help of **Er. HR Karandikar** and **Er. Varsha Vithlani**.

During these four years of Editorship, I came across the vast general / engineering knowledge possessed by him. He also possessed a rich and healthy vocabulary in English & Sanskrit language which was reflecting in his general/ engineering articles and his regular popular columns in newsletter like “**Random Thoughts**”, “**Thought of the Day**” and “**Laugh a While**” etc. His valuable contribution towards SPE and its Newsletter was enormous and unparallel.

I am also grateful to him and **Er. Takalkar** for giving me various ample opportunities to conduct big and important events of SPE(I) Vadodara from time to time. Because of his valuable and useful tips, I could cultivate my anchoring to higher and higher level.

Over & above his qualities and expertise, he was a very good human being. Despite his coveted post in GEB and SPE, he was a noble, humble and down to earth person. Any employee/ member could visit him personally at his office/ residence without any formality. I used to visit him personally at his residence for SPE work.

Lastly, I met him few months back at Reliance mall where he came for domestic shopping. It was an affectionate meet though he had hearing problems.

With his departure, GEB, SPE and engineer fraternity have lost a legendary personality and a gem of a person. over and above great loss to his family.

My heartfelt tribute to him.

શ્રી દિનકર(સૂર્ય) નો અસ્ત ભવે થયો હોય પરંતુ તેઓએ ફેલાવેલા જ્ઞાનપ્રકાશ અને કાર્યપ્રકાશ દ્વારા SPE હર હંમેશા ઝાળાળતું રહેશે!

Er. MG Mehta
Life Member

I started my career under **Er. N Dinker** Saheb in 1964.

He was posted as Executive Engineer in Petlad Division, though he was Deputy Engineer at Head Office. Shri HM Patel the then Chairman of GEB posted **Er. N Dinker** overnight due to some Communal atmosphere.

He nicely managed the situation and proved his metal.

He was very Honest and thorough Gentleman. Technically very sound. He had best Control over the English Language. A man of High Principle and Ethics. He enjoyed very Harmonious relationship with all the officials at HO.

He was the Pioneer Engineer of the Load Despatch Centre started in Jambuva. It was the initial period of the Load Management based on the Frequency Correction.

It is a History of the Board that he was promoted - on - the - same - Portfolio - from Executive Engineer to Chief Engineer.

He was the **Founder Chairman** of the Society of Power Engineers(I) Vadodara **Chapter**, today on the top of all the Chapters in India.

I pray almighty for peace to the departed soul.

Er. MC Gandhi
Life Member

We about 30 trainee engineers from Dhuvaran TPS were deputed to LD Centre, Jambua for 1-Day training programme. **Er. N Dinker** was there as CE (LD).

He explained in detail the Gujarat Power System Network. He was very enthusiastic and took personal interest to explain the entire working system of LDC to trainee engineers.

All trainees were grateful to **Er. Dinker** Sir.

Er. AP Karode
Life Member

Shri Dinker saheb was one of the main mentors during my engineering career in LDC, Jambuva. Fond memories of love and affection from **Dinker** Saheb and respected **Maltiben** to me and my family will always remain with us.

I know that many others in GEB family and especially in engineering fraternity, will have similar memories.

May his soul rest in peace.

Er. DS Sheth
Life Member

Right from 1985, **Shri Dinker** saheb molded me. Today whatever I am, it is due to his knowledge sharing, inspiration, motivation, and fatherly support all the way, not only limited to professional career but personal family life too. Such a humble down to earth noble person is very rare to come across.

I shall always remember him with gratitude.

Er. BB Mehta
Life Member

Shri Dinker saheb was kind, noble, honest, sincere and knowledgeable person. His attitude with everyone was kind, helping and caring. I had a chance to work with him for a long period. He helped me a lot and guided me. He supported me like anything. He has big role in shaping my career.

Load Despatch was his heart and its staff was his family members. He nourished them like a head of family.

Er. AN Makwana
Life Member

COMING EVENTS

2-Day Workshop on “**Partial Discharge Monitoring for Power Transformers, Gas Insulated Switchgear, Cable and Rotating Machines**” jointly organized by **CBIP, ERDA and SPE(I)** on **25 & 26 Apr 2024** at Grand Mercure Vadodara Surya Palace.

Role of Civil and Structural Engineers in Reliable and Environment Friendly Designs - particularly for Power Plants

Er. SM Takalkar
MD, TPEC

Dr. SK Damle
Consultant & former Professor of Civil Engg.
FTE, MSU, Vadodara

1.0 INTRODUCTION

1.1 Any industry has a very core and dynamic role for a Civil Engineer. From the layout and planning of the complete industry till the completion of a project, let alone the Erection of a power plant, is all done by Civil Engineers. Layouts, structure designing, Erection of critical and non-critical structures, like chimneys, Turbine Generator deck, Generator foundation, cooling towers, ash decks, compressors foundation, and infinite other structures are all developed by civil engineers.

It's an ongoing concept as you start power generation with minimalistic resources and keep on upgrading yourself in phases. Thus, unless the complete project is delivered and the whole of the Erection job is finished, Civil is pretty much in the core team.

Sustainable structural engineering is a practice that requires structural engineers, just like any other profession in any other industry, to minimize environmental pollution. This include reducing construction materials, minimising waste, minimum energy use in finished construction outputs, encouraging use of recyclable and renewable materials, and ensuring minimum damage to the natural eco system.

2.0 STRUCTURAL ENGINEERING ACTIVITIES:

2.1 The Structural Engineering activities in any project revolves round the following:

- Construction activities in sites that risk destroying Flora & Fauna
- Consumption of energy during construction
- The heavy plant machinery which relies on carbon fuels.

- Energy content within construction materials, and Buildings' energy requirement during the usage phase

2.2 Today, construction projects account for 40% of carbon emissions and 36% of the energy used globally. Sustainable structural engineering practices are more critical now than ever due to concerns over global warming, rising sea levels, as well as changing weather patterns.

3.0 ROLE OF STRUCTURAL ENGINEERS IN ACHIEVING STRUCTURAL SUSTAINABILITY

3.1 Structural engineers plan, analyse, design, construct, inspect, monitor, maintain, rehabilitate and demolish temporary and permanent structures or structural elements. Structural engineers are required to design robust, durable, and stable structural elements.

3.2 To achieve structural sustainability in buildings and structural components, structural engineers should focus on the following:

- Consider technical, environmental, social, economic, and aesthetic aspects of the structures during the design, construction, use, and maintenance stages.
- Know the design function or purpose of the structure, such as municipal, educational, residential, coastal, historical, religious, commercial, institutional, multi-family power plants or mixed-use.
- Design with the mindset that the depletion rate of raw or natural materials is high and.
- Design for a sustainable structural material that consumes lesser energy,

emits minimized carbon gases and is durable and robust to perform the intended function. Structural materials include concrete, wood, steel, aluminium, plastics, and composites.

- Minimize the use of steel and concrete and maximize the use of materials with less environmental degradation.
- Design for sustainable structural elements such as beams, trusses, columns, arches, plates, shells, and catenaries. It involves practicing structural analysis of these structural elements to ensure that they are sustainable for the structure. For example, analysing the statically determinate and indeterminate structural beams under loadings.
- Design for maximum structural flexibility to enable future changes in the structural use of the building in its lifetime.'

4.0 THE AREAS OF CONCERN FOR CIVIL AND STRUCTURAL ENGINEERS:

4.1 The following are the concerns which structural and civil engineering must address in project.

- Quarrying for raw materials that risks polluting water sources (underground and surface waters)
- Manufacturing and transportation of construction materials, which influence carbon emissions. For instance, cement manufacturing contributes 2.8 Billion tons of carbon emissions to the environment. The current increase in construction activities and urbanization risk raising it to 4 Billion tons annually.
- Structural engineers in the United States use two basic structural materials: concrete and steel. Regrettably, concrete and steel use massive amount of energy to process and emit much carbon into the environment. These structural materials have inherent

benefits and will remain dominant structural systems. However, you can explore substitute structural materials. Sustainable structural engineering involves investigating construction materials with low environmental effects and use of locally available substitutes.

5.0 IMPROVEMENT IN STRUCTURAL LIFE-CYCLE PERFORMANCE

5.1 Structural engineers design most structures to reduce the initial project's cost instead of the entire project's life costs and based on agreed factor of safety. A classic example of structural failure is of Fukushima Nuclear Power Plant in Japan which was devastated in the unprecedented Earthquake of 9 on Richter scale in March 2011. The plant was designed for the usual factor of safety considering the observed earthquake levels over a proven time span and was not designed for this unprecedented level of 9 on Richter scale.

For instance, the cost of constructing a bridge is usually lower than the costs of maintaining and demolishing it yet engineers many times fail to consider the entire structural life design costs.

5.2 You can slightly increase the initial construction costs to reduce maintenance dramatically and allow for salvage or disposal at the ultimate structural life; as a result, you will reduce the structural life-cycle costs. When you reduce the life cycle costs, structures become more sustainable than other structural engineering practices. Sustainable structural engineering has focused on improving structural life-cycle performance and made it an objective to improve structures' economic and environmental performance significantly.

- Optimise the factor of safety without compromising the quality of deliverables. However, the factor of safety should be related to structure as a whole.

6.0 ROLE OF STRUCTURAL ENGINEERS IN POWER LINE DESIGN

6.1 It was understood that transmission lines were merely gigantic multiple-span suspension bridges made up of steel, concrete, wood, aluminium, and other materials that required surveying, site work, foundations, and of course project and construction management.



6.2 It is surprising to hear people even within our profession that think of transmission and distribution power lines as something that electrical engineers do. While there is obviously a lot of electrical engineering involved in our power grids, once the wires are sized for a transmission line, the rest of it is mostly structural. In fact, ASCE (American Society of Civil Engineers) is quite active in the transmission line industry. Under SEI, there are two Standards, ASCE-10 Design of Latticed Steel Transmission Structures and ASCE-48 Design of Steel Transmission Pole Structures.

6.3 In Indian Transmission line tower are designed as per IS 802 (Part-I Section 1&2). The loadings are factored to take care of all the possible combination of loading including climatic and conductor tensions.

6.4 Use of monopole structures is also being encouraged in power transmission,

7.0 CURRENT SUSTAINABLE STRUCTURAL ENGINEERING SOLUTIONS

7.1 Structural engineers can take several steps to control the environmental effects of the structural design and improve its value. The current sustainable structural engineering solution include the following;

- Minimizing the incorporated energy in construction materials
- Minimizing on-site waste
- Minimizing energy use of the finished construction product
- Utilizing recyclable and renewable structural materials
- Maximize the durability of the structural system
- Conserving the environment serves as the natural habitat before, during, and after the structural construction phase
- Improvement in life-cycle performance
- Specification of recycled materials
- Use of substitute materials.

Having informed decisions at each stage of a new construction project bring huge environmental influence, and applying sustainable construction approaches will minimize your company's negative influence on the environment. An example is the sustainable waste management approaches during the structure's usage. Additionally, green structures require less operating costs. Research claims that applying the latest sustainable structural construction technologies could deliver annual savings worth \$400 billion in global spending on energy. As a client, you must know that your specification for a new building or building modification significantly affects the project's specification and, consequently, the structure's operation costs.

7.2 For example, structural engineers who designed Traversina Bridge in Switzerland used locally available timber to maintain the bridge without additional support. The design makes the bridge sustainable, since

the design objective has helped establish a structure with improved environmental

performance and economic life cycle costs.



Fig.-1 Traversing Bridge showing the use of locally available timber to enhance its sustainability.

8.0 SPECIFICATION OF RECYCLED OR SALVAGED STRUCTURAL MATERIALS – CASE STUDY

8.1 The traditional construction method excavates raw resources and processes them into useful construction products. Structural engineers now look for alternative material sources. The built environment is estimated to contain more copper than their ore. Hence call you to consider mining the construction materials in the built environment.

Today's sustainable structural engineering recycles and salvages construction materials that former engineers sometimes extracted back from the earth. Salvaging and recycling solve growing waste disposal and landfill challenges.

The current sustainable structural engineers design and make concrete from waste products and salvaged materials. When making concrete for sustainable structural elements, you can use fly ash, waste products, and recycled aggregates to replace Portland cement and natural aggregates. We hope that future structural

engineers will make concrete primarily from waste products and salvaged materials since the resultant product has low initial costs and improved environmental and engineering performance.

Moreover, structural designers have also sought to maximize structural design flexibility to give room for future changes in the structural use of the building during its service life. An example is Stansted Airport Terminal, which provides maximum flexibility and uses recycled materials. Stansted Airport Structure uses steel, the best structural material for sustainable construction. Steel modules provide a long span that enables significant interior flexibility and building expansion for future needs. Lastly, if the user does not need the structure, the structural engineer disassembles the structural elements and reuses them to build another structure. Salvaging structural materials like steel is better than recycling because of the high energy needed for recycling.



Fig.-2 Stansted Airport displays the use of steel modules to provide long span and other design features that enhance its sustainability.

9.0 USE OF SUBSTITUTE MATERIALS

9.1 Structural engineers in the United States use two basic structural materials: concrete and steel. Regrettably, concrete and steel use massive amounts of energy to process and emit much carbon into the environment. These structural materials have inherent benefits and will remain dominant structural systems. However, you can explore substitute structural materials. Sustainable structural engineering involves investigating construction materials with low environmental effects. Structural Engineers work to build and implement structural elements made of paper. You can explore substitute materials specifically for structures with short life plans to attain engineering goals of economics and efficiency while minimizing construction environmental effects.

10.0 HOW STRUCTURAL ENGINEERS CAN ADOPT MORE SUSTAINABLE DESIGNS

10.1 How can structural engineers adopt more sustainable designs? Structural engineers can go deep to adopt more sustainable designs by minding:

- Sustaining living
- Zero waste
- Zero carbon

10.2 Structural engineers can mind sustainable living when designing residential structures for their clients. It involves putting effort into building structures without volatile organic materials (VOC) and sufficient water supply to promote:

- Motivation
- Good lifestyles,
- Workers' well-being and health.

10.3 Sustainable structural engineering practices that create a framework to consider consumers' health and happiness enable structural engineers to adopt more sustainable designs.

Structural engineers focus on waste reduction before, during, and after construction. However, you can think about ways to design for reuse or deconstruction. Deconstruction is the ability to retrieve a structure's elements for ready reuse. Structural engineers can use bolted joint connections instead of welded ones. Thus, you can maximize the chances to reuse the material to promote zero waste at the end of the structure's life. As such design of the structural system considers material durability, the usability of reversible connections, prefabrication of.

structural elements, and the use of the material of minimized lifetime incorporated energy. Zero waste structural design is one-way structural engineers can adopt more sustainable designs.

Structural engineers should focus on zero carbon emissions to adopt more sustainable designs and pay attention to locally available resources for construction materials, primarily recycled or reclaimed structural materials. When considering on-site materials for construction design, you can reduce carbon emissions from long-distance transportation. In addition, you also support the local economy. Examples of such locally available materials include using graded sand to make sand for constructing outdoor structural elements like pavements. Similarly, the application of reused steel qualifies to be a locally available material that promotes zero emission. Hence, you can consider achieving zero emissions to adopt more sustainable designs.

11.0 LONG-TERM CHALLENGES IN THE FACE OF STRUCTURAL ENGINEERING

11.1 Even though sustainable engineering provides solutions to minimize environmental pollution in the built environment, several long-term challenges face structural engineers. The challenges strike the profession in 3 main areas:

- Practice
- Research
- Education

12.0 THE STRUCTURAL ENGINEERING PRACTICE

12.1 Structural engineering practice encounters crucial problems in the attempt to provide construction sustainability, such as emerging policies and the economic nature of sustainable engineering practices. The construction industry rewards structural engineers based on the initial construction costs

instead of the project's life cycle costs. Sustainable structural engineering results in low life cycle costs after high initial costs. This makes structural engineers design and construct bridges and buildings with high life cycle costs and more environmental consequences. For instance, the low life cycle costs can drastically reduce spending (government and private sector) spending on structures. Therefore, effective policies allow structural engineers to account for disposal and maintenance costs and initial costs (entire life design) during structural design.

13.0 THE RESEARCH

13.1 Structural engineering is constantly focusing on evaluating and maintaining available structures. The increase in the invention of non-destructive structural testing approaches over the past few years proves the claim. It shows that structural engineers are busy improving built environment sustainability by extending the lifetime of available structures instead of building new structures. Therefore, structural engineers require new options for practicing sustainable construction. In addition, the structural engineering community needs new materials made from waste products to construct structures with lower economic costs and environmental impact. Ideally, a sustainable built environment would assist in absorbing excess carbon gases and using waste products from all other sectors to solve the landfill challenges. The objective of a sustainable built environment needs collaboration between practice, Govt. and learning institutions. Therefore, research in sustainable structural engineering must attach to design, policy, social and economic impacts.

14.0 CONCLUSION

14.1 Structural engineering practices consume a large share of natural resources.

However, with the developing issues about climate change and the depletion of naturally existing construction materials, there is a growing pressure on structural engineers to reduce the environmental impacts of their construction practices by practicing sustainable structural construction or green building.

14.2 Revised construction policies can change the minimum required levels for designing and constructing a structure

today. A structural engineer needs to know the meaning of sustainability, its importance in improving the well-being of the built and natural environment, and the steps that the construction industry takes to improve the environmental impact of construction activities on society. Therefore, you must advance your construction technology to provide structures with reduced energy needs and embodied energy.

Simple Way to understand Kinetics Power Factor & Electrical Power Factor

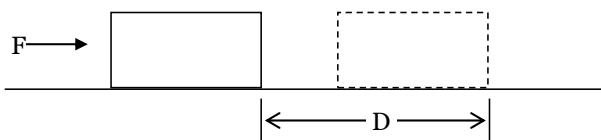
Work done is the result of energy spent.

Therefore, Energy = Work done
(neglecting losses.)

Application of force moves object in its direction.

Consider light weight object on plain surface as bellow.

Application of horizontal force F moves object by distance D



Energy spent = Force applied ×
Consequence of it = Force × Distance =
Work done

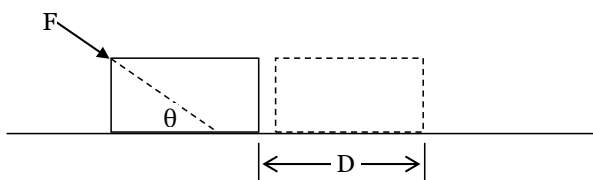
Power is rate of energy supplied or work done.

$$\text{Power} = P = \frac{\text{Work done}}{\text{Time}} = \frac{\text{Force} \times \text{Distance}}{\text{Time}} =$$

$$\text{Force} \times \frac{(\text{Distance})}{\text{Time}} = \text{Force} \times \text{Velocity}$$

Finally, $P = F \times V$

When force applied is at angle θ as under.



Force F is split in two components as under.

$F_x = F \cos \theta$ is in the direction of displacement.

$F_y = F \sin \theta$ is at right angle to direction of displacement.

Power of component $P_x = F_x \times D = F \cos \theta \times D = FD \cos \theta$

Component P_x contribute in work is useful power.

Power of component $P_y = F_y \times 0 = 0$ No movement in the direction of force component F_y

Component P_y does not contribute to work is useless power but adds friction(losses).

Similarly in the Electrical System

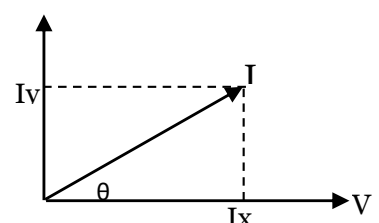
Application of Electro Motive **Force** (EMF) in the circuit cause **movement** of Electrons. EMF is Voltage V and Rate of flow of electrons is Current I

Electrical Power = Electrical Force V × Rate of flow of electron I along with the force V

Direction of the current I, is the same as voltage V in DC system or Unity PF in resistive AC circuits.

Power = Voltage × Current = $P = V \times I$

When direction of the current I at angle θ from voltage V in mixed RL or RC



or RLC AC circuits.

Current lags voltage in inductive circuit.

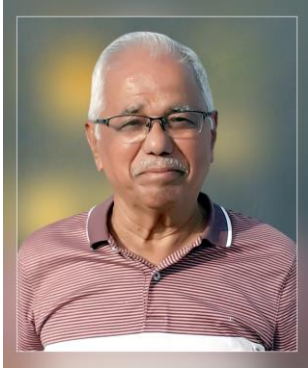
Current leads voltage in capacitive circuit.

Power $P_x = VI \cos \theta$, contributes to work, is useful active power.

Power $P_y = VI \sin \theta$, does not contribute in work, is useless reactive power adding losses.

Contributed by
Er. ND Makwana
Former Secretary

OBITUARY



Er. Arvind C Takalkar, Life Member of SPE(I) Vadodara **Chapter** left for his heavenly abode on **10 Jan 2024**. He is a cousin of Er. SM Takalkar (Patron Member).

He was very amicable

by nature. He was attending most of the programs organized by the chapter. He was a fond reader of SPE Newsletter.

May God give peace to the departed soul and give strength to his family members to bear the impact.



Er. Jyotendra B Shah, Life Member of SPE(I) Vadodara **Chapter** left for his heavenly abode on **24 Feb 2024**.

He joined erstwhile GEB as a Junior

Engineer and retired as a Chief Engineer (Tr) in GETCO. He was considered to be an expert in construction of Transmission Lines and Substations up to 400kV.

He participated actively in the programmes /events of the Chapter and also helped in the development of the Chapter. He was very amicable by nature and always tried to help others in a way he could do. During the

devastating earthquake in Kutchh on 26 Jan 2001, he was ordered to move to the affected areas. Without caring for his family, he rushed to Anjar very fast. The entire power system was in shambles. He connected four 12V batteries of jeep/car in series and created 48 Volts to give supply to PLCC and sent frantic messages about the damage and called for rehabilitation teams fully prepared with food, water, tents, tools & tackles as nothing was going to be available locally immediately. His meticulous planning and support from local engineers could restore power supply in 55 hours in urban areas of Kutchh. This was possible due to his long standing experience in construction and design of Transmission network.

May God give peace to the departed soul and give strength to his family members to bear the impact.



Er. Rameshbhai A Surati, Life Member of SPE(I) Vadodara **Chapter** left for his heavenly abode on **08 Mar 2024**. He participated actively in the programmes / events of the **Chapter**.

May God give peace to the departed soul and give strength to his family members to bear the impact.

Disclaimer

The views expressed in this newsletter are solely of the author and do not necessarily reflect the views of the editorial committee and Society of Power Engineers (I), Vadodara