



**SPE NEWS LETTER**  
APR, 2021 | Issue No. 2/2021



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

FF-48, AVISHKAR COMPLEX, OLD PADRA ROAD, VADODARA-390 007.

PHONE : (0265) 232 2355

[spevadodara01@rediffmail.com](mailto:spevadodara01@rediffmail.com)

[social.spevadodara@gmail.com](mailto:social.spevadodara@gmail.com)

[www.spevadodara.in](http://www.spevadodara.in)

**9328658594**

**CORONA**

**VIRUS**

**Only "I" & "U"**

**can Break the Chain**



**#STAYHOME**

**#STAYSAFE**



**#GETVACCINATED**

**OFFICE BEARERS & EXECUTIVE COMMITTEE MEMBERS FOR 2020-21**



Er. GV Akre  
Chairman



Er. SM Takalkar  
Vice-Chairman



Er. YV Joshi  
Secretary



Er. GP Shukla  
Jt. Secretary



Er. VB Harani  
Jt. Secretary



Er. NG Yadav  
Treasurer



Er. RS Shah  
Member



Er. SM Godkhindi  
Member



Er. NC Solanki  
Member



Er. Keval Velani  
Member



Er. SP Trivedi  
Member



Er. YK Sharma  
Member

**ADVISORY COMMITTEE MEMBERS FOR 2020-21**



Er. KN Rathod



Er. PA Shah



Er. DC Mehta



Er. JK Surti



Er. DV Patel



Er. HM Solanki



Er. KN Parikh



Er. NV Lathia



Er. Binal Modi



Er. Hetal Prajapati



Er. Himanshu Hathi



Er. Parag Parmar



Er. Umesh Parikh



Er. BC Majmudar



Er. YD Mehta



Dr. Ashutosh K Giri



**PATRONS**



**INVITED MEMBER**



Er. PH Rana



Dr. Shivani Sharma



Er. Nihar Raj



Er. HR Karandikar



Er. VJ Desai

**EDITORIAL BOARD**

Er. SM Takalkar Er. SM Godkhindi Dr. Ashutosh Giri

**SPECIAL INVITEE TO THE COMMITTEE**

Er. N Dinker  
Founder  
Chairman



**OFFICE ADMINISTRATION COMMITTEE**

Er. NC Solanki Er. KN Rathod Er. GP Shukla Er. VB Harani Er. SM Godkhindi

## **FROM THE CHAIRMAN'S DESK**



India's goal is to achieve 175 GW in renewable energy by 2022, including 100GW in solar energy. Over 90GW of total renewable energy has already been achieved and the balance is expected to be reached by 2022.

Solar power is amazingly fast developing sector in India. It will be interesting to know the development of solar energy about ten years back when the National Solar Mission was launched in India. Solar energy tariffs during the startup phase were as high as Rs. 15 per unit. Today, tariffs are less than Rs. 2.50 per unit because of the drastic reduction in the cost of solar equipment and has become the cheapest energy available for consumers.

To reach 40% (450GW) of total renewable energy by 2030, the GOI has launched many programmes for the development of solar energy and other renewable energy sources. The focus was on large-scale grid-connected and off-grid solar systems, land-based solar parks, roofs-tops for C&I and residential customers, canal roofs-tops, floating solar panels, etc.

Proper budgetary arrangements, proper regulatory policies and incentives are some of the initiatives the government has given. Unfortunately, COVID-19 and subsequent containment have slowed down many ongoing projects and few new projects have been delayed before taking off because there was not enough labour available. In addition, most of the equipment required for solar projects were imported mainly from China, which got delayed because of COVID-19 and tensions between India and China at the borders.

However, that phase is over now, and the developer began at full speed for makeup lost time. Due to the sincere efforts of the government, several Indian and foreign developers are now taking part in these projects. The government is now eager to develop domestic manufacturers to produce solar equipment in India through the Make In India and Atmanirbhar Bharat initiatives. The major steps taken by government recently are increase in custom duty from 25% to 40% on imports which has increased the import cost providing level playing field to Indian manufacturers.

The Government has approved the MNRE's proposal for the implementation of a production-linked incentive (PLI) to add 10GW of domestic manufacturing capacity for high--efficiency solar photovoltaic modules. MNRE has also proposed to allow net metering scheme up to 500kW for grid connected renewable energy that will make solar project more attractive as developer can sale this energy at respectable tariff, as the result several MSMEs, C & I and residential sectors will be encouraged to install their own generation.

It is clear that the renewable energy source will increase and that it will occupy a large part of the total energy produced in the country. As this energy is intermittent in nature energy storage has become a vital part of renewables. Several storage systems are in use like Battery storage, Pumped storage, compressed air storage etc. Lithium-ion is proving to be the most efficient storage system today, although it is costly. The energy storage system is becoming the most important business today, ensuring grid stability and reliable and improved power quality. Next most effective storage solution is Hydrogen and fuel cell where the renewable energy will be utilized to produce green hydrogen that will be used for fertilizer industry and energy storage for utilities and EV sector. India has proposed National Hydrogen Mission for the purpose.

Considering the scale of solar energy projects with a minimum lifespan of 25 years, operation and maintenance play a vital role. The new trend in O&M activities is automation covering efficient remote monitoring and maintenance with minimal manual work. The main areas of interest are cleaning modules with and without water, solar trackers, energy management, etc.

The need for skilled workforce of technicians and engineers is enormous and needs to be effectively addressed. A sound knowledge of technology and manpower training is necessary and SPE(I) Vadodara Chapter is keenly working and implementing expert program in this area.

Thanking you,

**Er. GV Akre**

## **EDITORIAL:**



### **Dear Readers,**

The word “Contract” and “Contractor” is so much common that even a layman or a casual labourer is also attracted to it. My father was in Railways and till I graduated I was under the shadow of

Railway’s working. Even most of my educational expenses were met by my father through the Freeships & Scholarships of Railways. I remember that most of the routine work of maintenance and construction was done departmentally. I used to visit various workplaces of railways with my father during my childhood. There were workshops, artisans and labourers to support the departmental works. The contracts & contractor were required for very big projects like construction of new lines, bridges, new stations etc. The small-scale construction and maintenance were done departmentally through regular & casual workforce.

When I joined GEB in 1972 as a Junior Engineer, I saw the same thing. We had workshops for vehicle maintenance, Fabrication of Power Distribution line material, Distribution transformer repairs etc. Each power station also had similar facilities. The Rural electrification, substation construction & extension were done through department sponsored workforce taken on Nominal Muster Roll (NMR). All the material was procured by the department and issued to the engineer-in-charge. Even other Government & Semi-government departments like PWD, ONGC, Irrigation etc. followed the departmental work culture. The practice was working well. However, like every system this system also suffered from drawbacks. This included using casual labourers for personal work by the officers, improper accounting and misappropriation of material, agitation by the temporary workforce for permanent employment etc. Besides there was no legal protection to the workers and officers against any untoward incidence.

Blockage of funds for procurement of material & transportation of material through departmental vehicles was another issue. Thus, the contracting system was introduced by many departments. Even the maintenance work which was done departmentally also went into the folds of the

contractors. The advantage of this transition was cutting down the cost of permanent establishment, reduction in labour laws & unions related issues and reduction in blockage of funds. Over last couple of decades even vehicles are being hired to prune down the cost and misuse.

With this move, the number of un-organized labourers started swelling & the strength of permanent employees started dwindling. The EPC contract system has given a second blow to this situation. The engineering work which was being done and or verified by the permanent employees, has become a history now. Like every contractor, the EPC contractor will also try to cut the corners and maximize the profit. The utility or the owner has to be on an alert to get the quality equipment /material & the construction done. However, as of now, this practice of contracting for new work is very popular. The maintenance contract is another part of decentralization of the activities of government departments.

The latest to join the club of decentralization is Public Private Partnership (PPP) model. Here all the responsibility of EPC and the cost of construction and 35 years of maintenance rests with the contractor. The first model of toll roads has been highly successful. Now the transmission lines and the substations are also being constructed on PPP model. The utility pays a fixed monthly concession amount to the special purpose vehicle (SPV) entity. This is like buying a house on EMI.

This model has become so popular that public places like Central Bus Station and Railway stations are also included for development on PPP model. The best example is Central Bus Station of Vadodara (Near Railway Station). In spite of being used by the large number passengers every day, it is neat & clean. This Bus Station has shopping malls, theatre and a three star hotel. Security arrangements are also excellent. As a matter of fact, there is always a chain of contractors below each main contract and larger cross-section of populations is attached to it.

To summarize, it can be stated that the work culture and contracting system is undergoing a metamorphosis. Let us accept it as a call of time.

**Er. SM Takalkar**  
**Vice-Chairman**

## CHAPTER'S ACTIVITIES



➤ On 20 Feb 2021, Chapter organized a Webinar on “Control of Power Quality in Distributed Power System at Isolated Locations”.



Expert speaker Er. (Dr.) Ashutosh K Giri, Asst. Professor, Govt. Engg. College-Bharuch talked on following:

1. Energy Scenario
2. Introduction of Distributed Power Systems in Isolated Mode
3. Power Quality issues in such systems
4. Different topology of a practical distributed power system
5. Control Strategy for real and active power control

5. Simulation results
6. Experimental results etc. Some other research perspective.

In the beginning, Er. YV Joshi, Secretary-SPE(I) Vadodara presented welcome address.

Er. (Dr.) Shivani Sharma, LM-SPE(I) Vadodara was the Moderator of the Webinar.

Dr. Ashutosh K Giri received his Bachelor of Engineering (Electrical) from College of Technology, GB Pant University of Agriculture and Technology, Pantnagar, Uttarkhand in 2002. He did his Masters in Electrical Power System from LD College of Engineering, Ahmedabad in 2005 and earned degree of Ph.D. from Sardar Vallabhbhai National Institute of Technology, Surat in 2020.

Er. YV Joshi  
Secretary

## Technology Trends In Transformer Bushings

Pramod Rao, Keyur Shah, Nirav Patel, YV Joshi  
(YASH HIGH VOLTAGE)

### Preface:

Reliability Expectations from Transformer Bushings have gained significant attention by end users in view of experience of catastrophic failures, loss of power for long time, higher downtime of several weeks, financial losses & urgency to restore the system on failure etc. In the event of Failure of Transformer Bushings, sometimes it causes severe irrecoverable damage to transformer and nearby equipment due to catastrophic failure resulting in fire.

This technical paper evaluates the Trends in Transformer Bushing Technology which predominantly addresses & focuses on the prevention of Catastrophic Failure of Transformer Bushings / Catastrophic Failures because of Transformer Bushings.

### INSULATION SYSTEMS – CONDENSER CORE OF TRANSFORMER BUSHINGS:

Internationally, 36kV to 800kV class Air to Oil Type Transformer Bushings, are typically condenser graded; however, in India Ungraded Bushings are still majorly used for 12kV to 36kV Voltage Levels.

The transformer bushings are being identified based on insulation system used for it. The various types of insulations are being addressed here under.



(1) **SRBP/RBP: Resin Bonded Paper Insulation:**

First use of this insulation system has been reported in 1913 & this was used for Bushings up to 245kV Class. However, in view of major failures caused by Partial Discharges (PD), this insulation system is no longer in use. But still there are several bushings reported to be in service around the world.

(2) **OIP – Oil Impregnated Paper Insulation:**

Transformer Bushings with OIP Insulation System in use since 1950 & the manufacturing of 800kV Bushings is reported to be started in 1960s. OIP insulation system is of Thermal “A” class which is suitable for operations up to 105°C. Beyond this temperature it is liable to catch fire due to low fire point of oil used for impregnation.

(3) **RIP – Resin Impregnated Paper Insulation:**

Bulk commercial use of RIP for Transformer Bushings is reported since ~ 1970s. This is truly a solid insulation system & has become popular as it does not contain oil, which is reported to be main cause of fire / catastrophic failures in OIP Bushings. These Bushings are suitable for operations up to 120°C. However, their failure is of non-catastrophic nature. RIP Bushings are popular & have seen increased usage since 2000, as it does not cause explosive failures like OIP Bushings and are seeing an increased usage by Indian utilities.

(4) **RIS – Resin Impregnated Synthetics:**

This is a relatively a new development in bushing technology. Bushings with RIS Insulation System have undergone a successful service experience of ~7 years. Since, it does not contain insulating paper, it is gaining popularity as RIS does not have adverse effects of Moisture Ingress as reported in OIP & RIP Bushings. It is the latest in dry bushing technology and offer all the distinct advantages of RIP, due to much higher resistance to moisture absorption in event of inadvertent exposure to ambient, as it is a paper free synthetic insulation.

(5) **RIF – Resin Impregnated Fiber glass:**

This insulation system is reported to be introduced to market in 2003. Again, like RIS,

this insulation system does not contain paper. RIF is different than RIS in the Technology by use of fiberglass for manufacturing the condenser core. In RIF, it is reported that in view of limitations on manufacturing, we cannot use higher number of grading foils (like RIP/RIS) and hence RIF Bushings are non-fine graded bushings.

Today, SRBP / RBP Bushings are no longer manufactured. OIP Bushings continue to be manufactured. However, with RIP / RIS Bushings gaining popularity due to distinct advantage of being oil free, it does not cause disruptive failure and fire, owing to which many utilities are adopting RIP/RIS bushings up to 420kV for new transformers, as well as some progressive utilities have also adopted retrofitting of old OIP bushings with newer RIP/RIS bushings for their existing transformers to increase overall reliability and life cycle of transformers. The manufacturers are now available in India having established localized production and supply of RIP/RIS bushings up to 420kV.

### PRODUCT / PROCESS TECHNOLOGY

**OIP Bushings:** Hence exploration on use of Synthetic Ester oil for OIP Bushings continues for improved reliability.

### NEW TECHNOLOGY TRENDS

Conventional Mineral Oil (Transformer Oil) is still popular in manufacturing of OIP Bushings. The failure mode analysis of OIP Bushings indicates that Oil Degradation due to Moisture Ingress (in view of Leakages) & Chemical Degradation of Oils are the main root causes



Further to RIS technology to avoid use of oil, being pro-fire, now there is new technology developed called **EIP (Ester Impregnated Paper)** as Insulation for Bushings. However, the proven record of Service experience is expected to be available in coming 5-6 years.

Also attempts are being made to develop **EIS (Ester Impregnated Synthetics)** Insulation Technology, thus making it truly oil and paper free bushing. Catastrophic / destructive failures have been reported in OIP

Bushings with Porcelain Insulators being used for Air End & Oil End Insulators. To minimize / eliminate damages caused internal to the transformer by disruptive failures, almost all OIP Bushing Manufacturers are now using shatterproof Resin Moulded Oil End Insulators in place of Porcelain Insulators.

Few Manufacturers have also launched OIP Bushings with Polymeric / Composite Insulators in place of porcelain insulators, to make the bushing more robust and eliminating risks of porcelain damage during transit/storage or commissioning/operation thus even making the Air End Insulator Shatter proof.

**RIP / RIS Bushings with** polymeric Air End Insulator.



There are two construction types, in first type Hollow Composite Insulator is used with Resin Based Foam material being used as the filler material between RIP / RIS Condenser Core & Insulator ID. Some manufacturers also use jelly in place of foam, however more popular is Resin Based Foam Material.

In the second type, Silicon Insulators are formed by direct moulding of Silicon Sheds on RIP / RIS Cores.

More efforts are being undertaken by most of the manufacturers around the world, to increase & multiply the Manufacturing Capacity of RIP / RIS Bushings, while maintaining lower level of process rejections.

### STORAGE OF BUSHINGS

**OIP Bushings:** The OIP bushings are being transported horizontally while they are being covered with plastic and stored in cool and dry sheds in upright position on stands.



**RIP Bushings:** If Bushings are not safely stored, there are observations of moisture ingress on surface of oil end of condenser cores. This can cause increased Tan Delta value. Thus, in India, RIP Bushings dispatched by majority of manufacturers with Oil Filled Container assembled on

Mounting Flange to protect Oil End Side of Condenser Core.

### CONDITION MONITORING DEVELOPMENTS / TRENDS:

- (1) **Capacitance & Tan Delta Measurements at 50Hz:** Now all over India, this test has been carried out at a certain periodicity, however the limiting values differ from one utility to another utility. It is expected that the end users will develop more data base & analyse the data effectively which will lead to preventive actions on defective bushings. Many Technical articles are recently published by CIGRE which are of extreme use in such analysis. As a result, it is found that the temperature dependence of Tan Delta of OIP & RIP Bushings is now well acknowledged by many end users and is getting effectively used in analysis of results.

Since the major usage of RIP / RIS Bushings has started over last 3~4 years, the technological aspects such as relatively higher variation in Tan Delta with Temperature for RIP / RIS Bushings (due to intrinsic properties of Resin Material) are now getting acknowledged and accepted.

- (2) **DFR (Dielectric Frequency Response) & FDS (Frequency Domain Spectroscopy):** These measurements are now gaining popularity. The DFR Measurements of Capacitance & Tan Delta between 15kHz to 400 kHz is being carried out. Many end users have started specifying the DFR Measurements on Bushings by the Transformer Manufacturers. The DFR measurements have been found to be extremely useful in detecting Moisture Ingress in OIP Bushings during service. Whereas the DFR Measurements have been found to be useful for RIP Bushings at the pre-commissioning stage to detect issues related to moisture absorption in storage.
- (3) **DGA (Dissolved Gas Analysis) of Oil Sample from OIP Bushings:** Some customers in India have started practicing the DGA on Oil Samples drawn from Bushings, to confirm the abnormality if any, detected by Tan Delta measurements at 50Hz & also by DFR. The DGA is expected to be more used for 245 & higher kV class, to identify and remove defective bushing in in time, thus

#### (4) Online Health Monitoring Devices:

Such devices are in use internationally for past more than 40 years. However, in India, these have been used by some end users on trial basis. These devices have not become popular in India because of extremely high costs. The devices which are becoming popular inter-nationally are those devices which detect both Change in Capacitance & Change in Tan Delta.

#### SUMMARY:

- RIP & RIS Bushings will be more popular in near future based on increasingly establishing service experience globally. However, Reliability enhancement of OIP Bushings are expected to continue to be further explored & developed.
- Many utilities in India are following global utilities to specify dry type RIP/RIS technology bushings for new transformers to increase transformer safety and overall product life cycle. Some utilities have also started to retrofit / replace existing OIP bushings on old trans-formers, with RIP/RIS technology

- Monitoring of OIP Bushings, already in service, will be more effectively carried out by end users, based on Trend Analysis of Tan Delta, DFR Measurements, DGA Analysis of Oil Samples and this is expected to lead to prevention of Catastrophic Failures.
- Online Health Monitoring devices are likely to be more used at Critical Installations. Bulk or Major usage of Online Health Monitoring Devices depends on the reduction of price of such devices when compared with prices of Bushings.

#### REFERENCE LITERATURE:

- CIGRE: Doc No. 755 (2019) – Transformer Bushings Reliability.
- CIGRE: Doc No. 445 (2011) & Doc No. 642 (2015) – Transformer Maintenance & Transformer Reliability Survey.
- IEEE C57.143 -2012- Guide for Application for Monitoring Equipment – Transformers & Components
- Advanced Diagnostic Tests on High Voltage Bushings by Dr. Michael Kruger, Omicron Austria.

### **ACKNOWLEDGEMENT**

**Following members have donated towards Silver Jubilee Celebration of SPE(I) Vadodara Chapter (continued from Sr. No. 38)**

<u>Sr. No.</u>	<u>Member's name</u>	<u>Donation (Rs.)</u>	<u>Sr. No.</u>	<u>Member's name</u>	<u>Donation (Rs.)</u>
39	Er. BN Raval	11,000	52	Er. KC Yadav	2,100
40	Dr. Shivani Sharma	11,000	53	Er. MC Gandhi	1,505
41	Er. PR Mehta	5,001	54	Er. KR Jani	1,501
42	Er. (Late) RA Jani	5,001	55	Er. RA Surati	1,111
43	Er. YV Joshi	5,001	56	Er. AP Karode	1,111
44	Er. ND Makwana	2,555	57	Er. Rajnikant J	1,111
45	Er. BP Dave	2,511	58	Er. KN Parikh	1,100
46	Er. VJ Desai	2,501	59	Er. YD Mehta	1,100
47	Er. GJ Bajaj	2,500	60	Er. MH Vyas	1,100
48	Er. N Dinker	2,500	61	Er. JK Thakkar	1,001
49	Er. PK Mahani	2,100	62	Er. RR Tewar	1,001
50	Er. JN Pancholi	2,100	63	Er. DB Dalal	1,000
51	Er. Manoj Kumar	2,100	64	Prof. AK Singh	1,000



**Donations received towards Advertisement in the Souvenir commemorating  
Silver Jubilee of SPE(I) Vadodara Chapter**

<u>Sr. No.</u>	<u>Donor's name</u>	<u>Donation (Rs.)</u>	<u>Sr. No.</u>	<u>Donor's name</u>	<u>Donation (Rs.)</u>
01	Torrent Power	46,250	06	PC Patel	10,000
02	GETCO	20,000		Mahalaxmi Industries	
03	M/s Voltanp Transfoirmers	20,000	07	New Honeywell Engg.	5,000
04	Roha Dyechem (P) Ltd. Mumbai	20,000	08	M/s Design Group Project	5,000
05	Rumika Engineering	10,000	09	EI Technologies Bengaluru	5,000

**SPE (I) Vadodara Chapter expresses its gratitude to the Donors for donating Wholeheartedly**

**GOOD GESTURE**

**Temporary Loan from EC & AC Members  
of SPE(I) Vadodara**

Income of SPE(I) Vadodara was severely affected due to prevailing situation on account of COVID-19. To cope up with regular fixed expenses, it was unanimously decided in the EC meeting held on 28 Oct 2020 and in Monthly meeting of EC & AC members on 08 Nov 2020 that all EC & AC members will offer a "Temporary Interest Free Refundable Loan" of Rs. 5,000 to SPE(I) Vadodara for a short time.

Out of 28 members (12 EC & 16 AC members) following 15 members came forward to help out SPE(I) Vadodara from this unforeseen financial crisis.

1. Er. GV Akre Chairman
2. Er. SM Takalkar Vice-Chairman
3. Er. SM Godkhindi Secretary
4. Er. NG Yadav Treasurer
5. Er. YK Sharma Jt. Secretary
6. Er. RS Shah Executive Member
7. Er. NC Solanki Executive Member
8. Er. SP Trivedi Executive Member
9. Er. AN Makwana Executive Member
10. Er. VB Harani Advisory Member
11. Er. DV Patel Advisory Member
12. Er. NV Lathia Advisory Member
13. Er. HM Solanki Advisory Member
14. Er. PM Mohite Advisory Member
15. Dr. Shivani Sharma Advisory Member

This amount is refunded to all concerned in second week of Mar-2021.

For the information of the readers, the governing body of the Chapter has exhibited this gesture third time. During the initial years of inception of the Chapter (1997-98) there was a paucity of liquidity for purchasing the present accommodation. The then members of the governing body (Some of them are active members even today & others have left for their heavenly adobe) decided to raise about INR 50,000 as a loan. The members of governing body and many other members contributed a loan amount ranging from INR 1,500 to 3,000 (this was a big amount then). After The purpose was fulfilled, many of them preferred not to take back loan amount and requested the then office bearers to convert the loan amount to donation.

In a similar gesture in 2009 the Institution of Engineers(I) Vadodara Local Center wanted to renovate the Vasik Auditorium and requested SPE(I) Vadodara to lend a helping hand by advancing interest free loan to IE(I) Vadodara. Er. I.I. Pandya was the president of the local center then. Many of our members extended help and never demanded that money back. The amount was nearing INR 75,000.

## REMEMBERING ER. SANATBHAI JOSHI AN OBITUARY

BY

Er. SM Takalkar (Vice-Chairman)



**Er. Sanatbhai M Joshi**, former Executive Engineer of erstwhile GEB, passed away on **22 Feb 2021**. **Er. Joshi**, a well-known personality, is best remembered for his pioneering efforts in establishing and nurturing SPE(I) Vadodara Chapter.

He was a very active **Life Member of Society of Power Engineers (I) Vadodara Chapter**, who always cared for the Chapter while in India and USA.

The occurrence has sent shock waves along and across the power engineering fraternity of Vadodara. The Vadodara Chapter of SPE (I) is highly indebted to Er. Sanatbhai establishing the Chapter on firm footing. It is he, who roped in his friend Hiren bhai Patel, the then owner of Avishkar complex, and make him agree to give possession of the present premises with some initial payment & rest with the interest free installments. Er. Sanatbhai joined hands with me in putting the pieces together and establishing a system. Creating a General Ledger, systematically organizing events, finance management, membership drive etc. are some of the block building measures adopted by him. The development of the Chapter was his priority all the time.

Ever smiling, non-controversial and ego free characteristics made him a big asset to the Chapter

for almost 15 years from the inception, till he moved to USA. Though he was separated by thousands of KM, he was always keeping in touch with the members of SPE(I) Vadodara. Whenever he was in India, he never missed an opportunity to meet members of the Chapter and also used to attend all the events during his stay. He used to visit website of SPE(I) Vadodara and all the mails.

His career of about 25 years in GEB was spotless. He worked on various positions and handled very sensitive assignments during his tenure but always carried a clean image all through. So far as my personal account is concerned, we both worked together for almost 25 years till his departure to USA. We were junior engineers in Valsad district then Dy. Engineer & Executive Engineer in Head Office. Though our departments were different in Head Office, we were always together. His active involvement in GEB engineers' association and contribution while helping Er. G.J Bajaj as a treasure (for many years), is noteworthy. In addition to being a fellow Engineers in GEB, we had a family bondage as well. We knew each other's family very well and there were many occasions of get-together.

The present COVID-19 separated us physically early last year (2020) but telephonic talks continued. Though he suffered from some ailments and had to undergo several surgeries, he never allowed the ailments to dampen his zeal to work for others.

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

**Some Sweet memorable events with Er. Sanatbhai Joshi are covered in this issue.**

## **OBITUARY**



**Er. Bhagubhai K Patel**, former Member (Tech.) of erstwhile GEB and **Life Member** of Society of Power Engineers (I) Vadodara Chapter passed away on **17 Mar 2021**.

Er. BK Patel served erstwhile GEB in various capacities before being appointed as a Member (Technical) by Government of Gujarat.

He was a Down to Earth individual and believed in quick decisions.

He used to attend many events organized by SPE(I) Vadodara and always appreciated them. In his death SPE(I) Vadodara has lost well-wisher.

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



**Er. Ratilal A Jani**, Retd. Addl. Chief Engineer (Tr.) of erstwhile GEB and **Life Member** of Society of Power Engineers (I) Vadodara Chapter passed away on **09 Apr 2021**.

After completing his study in Electrical Engineering from MS University, Vadodara he served in Damodar Valley Corporation and Tata Steel. He joined erstwhile GEB as Deputy Engineer in 1961.

Er. RA Jani served in various capacities in the field Construction. He was involved in construction of first ever 400kV line and 400kV Asoj substation of GEB. He put down his papers as Addl. Chief Engineer (Tr.).

He was Omni present in the lectures and seminar organized by SPE(I) Vadodara. He was a well-wisher a supporter of the activities of SPE(I) Vadodara.

In his death SPE(I) Vadodara has lost a good supporter and well-wisher.

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



**Er. Abdulrehman M Chhipa**, Retd. Executive Engineer, GETCO and **Life Member** of Society of Power Engineers (I) Vadodara Chapter passed away on **26 Apr 2021**.

Er. Chhipa was an expert transmission construction Engineer and a supporter of SPE(I) Vadodara. Even though he was residing in Ahmedabad he used to travel to Vadodara to attend important events including AGM & Elections. We will be missing him a lot

May Allah give peace to the departed soul & give strength to his family members to bear the impact.



**Er. Ashokkumar T Mistry**, Retd. Deputy Engineer, GSECL-Wanakbori and **Life Member** of Society of Power Engineers (I) passed away on **27 Apr 2021**. He was an active

Member of the Chapter

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





**Er. Premjibhai R Chaudhari**, Retd. Jt. MD, UGVCL and a good supporter of SPE(I) Vadodara Chapter passed away on **29 Apr 2021**.

Er. Chaudhari was an eminent Power Distribution Engineer and a good administrator. He retired as a Jt. Managing Director in UGVCL. He was a good supporter of the activities of SPE (I) Vadodara. He helped SPE in organizing seminars in South Gujarat.

He was a crusader against power thefts. During his tenure as a chief engineer south zone he brought a revolution in Surat city & south Gujarat by reducing the power theft and increasing the revenue of GEB.

In his death SPE (I) Vadodara has lost a Well-Wisher and a great supporter.

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



**Er. Pravinkumar O Kulshreshtha**, Retd. Addl. Chief Engineer, GETCO and **Life Member** of Society of Power Engineers (I) Vadodara Chapter passed away on **03 May 2021**.

Er. Kulshreshtha did his Graduation in Electrical Engineering from Dayalbagh Engineering College, Agra. He was also a Chartered Engineer.

After completing his study, he joined erstwhile GEB as Junior Engineer(O&M) at Limbdi Rural S/D in 1978. He worked in various disciplines such as Distribution, Transmission, Generation etc. and was elevated to Addl. Chief Engineer (Tr). He put down his papers as ACE(Zone), GETCO, Bharuch.

He was active member of SPE(I) Vadodara and used to visit Chapter's office regularly for a helping hand

In his death SPE (I) Vadodara has lost a Well-Wisher and an active member.

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

### MEMORABLE EVENTS WITH LATE ER. SM JOSHI



Late Er. SM Joshi (extreme left) at the registration counter during an event organized by SPE(I) Vadodara



Late Er. SM Joshi (3<sup>rd</sup> from left) at the registration counter during an event organized by SPE(I) Vadodara



Late Er. SM Joshi at the podium delivering a speech



Late Er. SM Joshi interacting with participants during an event organized by SPE(I) Vadodara in spite of his plastered right hand

Late Er. SM Joshi (3<sup>rd</sup> from right) looks on while lighting a lamp by Er. N Dinker, founder Chairman during an event organized by SPE(I) Vadodara



## હું કરું છું પ્રાર્થના

હું કરું છું પ્રાર્થના, મને પ્રેમ તારો આપજે  
કંઈ ખોટું કામ કરતો હોઉં, ત્યારે તું મને વારજે.  
જીવન એક સંગ્રામ છે, કોઈની જીત અને હાર છે,  
જાણું છું સંસાર આ તો, સુખ દુઃખનો ઓસાર છે  
હારથી હારી ના જાઉં, એવી હિંમત આપજે

.....કંઈ ખોટું કામ

તન બચે કે ના બચે, હું સર્વની સેવા કરું  
મનમાં રાખી ભાવના, હું નામને રટતો રહું  
હું તુજમાં ને તુ મુજમાં છે એવી શ્રદ્ધા આપજે

.....કંઈ ખોટું કામ

ધન મળે કે ના મળે, પણ ધર્મને હું જાણું  
તારો પંથ ચુકી ના જાઉં એટલું સંભાળજે  
એ છતાં ભૂલો પડું તો સાચે રસ્તે વાળજે

.....કંઈ ખોટું કામ

મોક્ષની ચિંતા નથી હું રાતદિન ભક્તિ કરું  
તારું નામ ભૂલાય નહીં ભાવના એવી ધરું  
ડગમગું નહીં હું કદાપિ શ્રદ્ધા એવી આપજે

.....કંઈ ખોટું કામ

Poem by Er. YD Mehta, LM & Advisory Member of SPE(I) Vadodara

THE END