



## MD'S ADDRESS



Dear Friends,

I am sending this message amid a serious pandemic in Bengaluru. The state is under lockdown. Some of our teammates are affected. I wish them all a speedy recovery and hope India marches towards normalcy soon.

What I would like to appreciate is the spirit of Taurus team. They did the highest turnover last year ending March 2021 and currently the team is busy keeping the workflow on in full swing though all are working from home.

During the course of the last year, we did well in our STITAM services division as well. Apart from doing a good number of projects, new skill sets were also acquired. We did testing and commissioning of a GIS substation. This is indeed a very credible work. Current year

we intend to do many more projects. We would also be adding certified training as one of our services offered.

Currently our company has been majorly in the transmission line arena. This year onwards we would be penetrating into the substation area. We have added new technologies to address the substation market. We also have many new associations with leaders in the substation equipments testing market.

This financial year looks very promising and I look forward towards a healthy and wealthy year for all.

Thanks and Regards,

**M N Ravinarayan**, Managing Director



*Eid Mubarak*

## PORTABLE DISSOLVE GAS ANALYZER - KELMAN TRANSPORT X

Dissolved gas analysis (DGA) is the study of dissolved gases in transformer oil. It is also referred to as a DGA test. Whenever a transformer undergoes abnormal thermal and electrical stresses, certain gases are produced due to the decomposition of the transformer oil. When the fault is major, the production of decomposed gases are significant and they get collected in a Buchholz relay. But when abnormal thermal and electrical stresses are not significantly high the gasses due to decomposition of transformer insulating oil will get enough time to dissolve in the oil.

Hence by only monitoring the Buchholz relay it is not possible to predict the condition of the total internal healthiness of electrical power transformer. That is why it becomes necessary to analyze the number of different gasses dissolved in transformer oil in service. Using DGA of transformer oil, one can predict the actual condition of the internal health of a transformer.

It is preferable to conduct the DGA test of transformer oil in a routine manner to get historical information about the internal health of a transformer over its lifetime. In a DGA test, the gases in oil are extracted and analyzed to determine the quantity of gasses in a specific amount of oil. By observing the percentages of different gasses present in the oil, you can predict the internal condition of the transformer.

Generally, the gasses found in the oil in service are hydrogen (H<sub>2</sub>), methane (CH<sub>4</sub>), Ethane (C<sub>2</sub>H<sub>6</sub>), ethylene (C<sub>2</sub>H<sub>4</sub>), acetylene (C<sub>2</sub>H<sub>2</sub>), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>) and oxygen (O<sub>2</sub>).

The Kelman TRANSPORT X is a compact portable Dissolved Gas Analysis (DGA) system which can be used to analyze oil samples for

all dissolved fault gases and moisture. If abnormal levels are detected, it further provides a diagnostic using various IEEE/IEC approved interpretation rules.

It uses PAS (Photo Acoustic Spectroscopy) technology designed for stability without calibration. This method eliminates consumables, carrier or calibration gas and frequent recalibration not required. This is a vital piece of equipment when more frequent oil tests need to be performed on aging transformers or when an immediate on-site diagnostic is required following an alarm from a single gas DGA monitor.

It can measure individually all 7 fault-gases (H<sub>2</sub>, CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>2</sub>, CO, CO<sub>2</sub>) plus water content (moisture) from a manually taken oil sample. Provides all results and a diagnostic based on several methods in less than 30 minutes. No moving parts, no pumps and no extra piping required. It has the ability to go from high gassed samples (such as tap changers) to low gassed samples (such as main tanks) with no contamination of results. It provides wide detection range with excellent accuracy for all seven fault gases (typically 1-50,000 ppm). Extremely easy step-by-step operation and color screen with touch control for operation and results display. It can store up-to 20,000 records stored in internal memory as well as embedded thermal printer for hard copy of results.



Prepared by **Mr. Nijin Paul**, Product Engineer



There are well regulated norms governing air and water pollution which are enforced by state pollution control boards on any industry and business operating within India. Unlike pollution which is visible in atmosphere and water bodies, today there is an increasing amount of pollution being emitted by industries and business on the Power sector front. This pollution caused by harmonics is not visible and is a

reason for a large financial impact on the Transmission & Distribution (T&D) network and also on other consumers connected to the grid.

The increasing need for energy efficient products is resulting in wide spread adoption of variable frequency drives (VFD) to run motors, SMPS (Switch Mode Power Supply) to run electronic equipment, LED & CFL lamps for lighting and high efficiency inverter technology solutions. All these technologies are helping reduce our power bill by 30-50% compared to previous technology. But, the unfortunate by-product of all this automation is that all these technological products draw current from the mains / grid in a chopped manner even when the applied voltage is sinusoidal. These harmonic currents required by the new high efficiency products are being supplied by the grid.

### What do you mean by Harmonics?

Harmonics are generated by electronic equipment which draws current in a "chopped manner". The current drawn by these non-linear loads are called harmonic currents. These harmonic currents flow through various impedances from generation source to the load, resulting in voltage distortion. These harmonic voltages create more harmonic currents even in linear loads.

Harmonics is a sort electrical pollution, which not only affects us but it also affects the grid and other consumers connected to the same grid

The cables and transformers through which the harmonic currents flow is designed for carrying fundamental frequency current (50Hz in India) and the harmonic current results in additional losses and leads to heating of the cables and

transformers. All the T&D cables and distribution transformers en-route will have the additional heating and also reduction in their KVA handling capability to support the harmonic current required by the VFDs.

According to Power Grid, they have been observing increasing harmonics pollution across India which is arguably reducing the T&D capacity by 3-7%. Imagine if this can be avoided, we can defer addition of several GW of new power plants costing several thousand crores.

Apart from the increase in losses and heating or burning of cables and transformers, harmonics can cause a variety of problems within the harmonic generating facility itself like premature failures of power factor correction capacitors and nuisance tripping of breakers. Electronic card failures increase especially when the voltage harmonic distortion is high due to harmonic currents drawn by the facility or the incoming mains voltage has higher distortion due to other consumers on the same utility line drawing more harmonic currents.

Recognising harmonics as a problem, IEEE published the Standard 519 in 1992 which was updated in 2014 where it recommends the harmonic limits for different types of power consumers. It further proposes a shared responsibility for harmonic control between the utility or operators (incoming mains harmonic voltage distortion limits) and consumers or users (harmonic current emissions limit to the grid). This standard was referenced in the Central Electrical Authority (CEA) guidelines on harmonic limits for bulk consumers in India.

In fact, IEEE 519-2014 now specifies voltage distortion limits for even low voltage <1kV systems, highlighting the importance of maintaining harmonic limits at all T&D voltage levels. Harmonics not contained within the facility producing it, can have a huge impact on the grid and ultimately all grid consumers and DISCOMs have to pay for this electrical pollution related losses and loss of capacity.

It is essential to monitor Harmonic for the consumers and DISCOMs on daily basis to ensure it is not exceeding the limit specified by the IEEE and CEA.

MULTI Digital Harmonic Tester (HWT-301) is a portable clamp meter capable of measuring Current and Voltage harmonics instantly upto 25th Harmonics. It is been used by the maintenance department of industries at the VFD panel and DISCOMs at the secondary side of CT and PT to measure the Harmonics as shown in the given picture. The regular use of HWT-301 will help the facility and utility management to measure and monitor the Harmonics instantly and regularly and take the corrective action before its leads to a severe fault/loss.

Prepared by **Mr. Naushad Ansari**, Senior Engineer

## MENTAL SAFETY DURING PANDEMIC

Social Isolation. Work-from-home burnout. Public health-related stress. Political upheaval. If the year 2020 has taught us anything, it's that mental health matters a lot and has become a central issue for many of us. But after all these years of human evolution, it hasn't necessarily become easier to talk about. Through the pandemic, these issues became more common and thus more relatable than ever. While mental health doesn't always feel easy to talk about, a longstanding historical stigma against open discussion of mental health issues is waning. Indeed, being straight about what you're going through helps normalize and destigmatize the problems which most people are going through.

It's normal and understandable that folks are experiencing fear within the context of the COVID-19 pandemic. Added to the fear of getting contracted by the virus during a pandemic like COVID-19 are the numerous changes to our daily lives as our movements are restricted in support of efforts to contain and hamper the spread of the virus. Faced with new realities of performing from home, temporary unemployment, home-schooling of youngsters, and lack of physical contact with other family relatives, friends and colleagues, we must take care of our mental, as well as our physical health during this pandemic.

The COVID-19 pandemic has had a serious effect on everyone's lives. Many folks face challenges that will be stressful, overwhelming, and cause strong emotions in adults and youngsters. Public health actions, like social distancing, are necessary to scale back the spread of COVID-19, but they will make us feel isolated and lonely and may increase stress and anxiety. Learning to affect stress healthily will cause you to, the people you care about, and other people around you become more resilient.

### Stress can cause the following:

- Increase the feelings of fear, anger, sadness, worry, numbness, or frustration
- Changes in appetite, energy, desires, and interests
- Difficulty concentrating and making decisions
- Difficulty sleeping or nightmares
- Physical effects like headaches, body pains, stomach problems & skin rashes



- Worsening of chronic health problems
- Worsening of mental health conditions
- Lead to increased use of tobacco, alcohol, and other substances.

It is completely normal to feel stress, anxiety, grief, and worry during the COVID-19 pandemic. Below are the following ways as recommended by Centres of Disease Control and Prevention (CDC) in which you'll help yourself and others to manage stress.

- Take breaks from watching, reading, or taking note of news stories, including those on social media. It's good to be told, but hearing about the pandemic constantly is often upsetting. Consider limiting news to only a few times each day and disconnecting from phone, TV, and computer screens for a short time.
- Take care of your body.
  - ◆ Take deep breaths, stretch, or meditate
  - ◆ Try to eat healthy, well-balanced meals.
  - ◆ Exercise regularly.
  - ◆ Get plenty of sleep.
  - ◆ Avoid excessive alcohol, tobacco, and substance use.
  - ◆ Continue with routine preventive measures as recommended by your doctors, healthcare providers.
  - ◆ Get vaccinated with a COVID-19 vaccine whenever it is available nearby you.
- Make time to unwind. Try to do some other activities you enjoy.
- Connect with others. Have some conversation with people you trust about your concerns and the way you're feeling.
- Connect with your society- or faith-based organizations. While social distancing measures are in situations, try connecting online, through social media, or by phone or mail.

Taking care of yourself can better equip you to require care of others. During times of social distancing, it's especially important to remain connected together with your friends and family. Helping others to cope up with stress through phone calls or video chats can assist you and your loved ones feel less lonely or isolated.

Prepared by **Mr. Turjoy Dasgupta**, Technical Engineer

## PHOTO GALLERY - MEN AT WORK

### NEW SKILL SET ACQUIRED BY OUR TEAM – TESTING & COMMISSIONING OF GIS SUBSTATION



# ANNUAL DIGITAL MEET - 2021



## NEW ASSOCIATIONS - CREST

Recently Taurus has signed an MOU with CREST – Pioneer in the Industry that specializes in developing & delivering superior test systems for Circuit Breaker Analysis to sell CREST products in India.



*On field testing of switchgear,  
Re-created by the Creators...*

**Circuit Breaker Operational Analyser**

Crest Test Systems is a pioneering group in the industry that specializes in developing and delivering superior Test and Measurement solutions to various industries.

It has an experience of two decades in high-speed and high integrity data acquisition and control, and communication protocols between embedded hardware and personal computers.

With its multi-disciplinary engineering skills it has had the privilege of giving Test and Measurement solutions to industrial giants in the Power Sector, Metros and Railways, Automotive Industry, and a number of Test & Certification Labs.

**CB Operational Analyser with DCRM Dynamic Contact Resistance Meter**



**Contact Resistance Meter**



**CB Time Interval Meter**



## WELCOME NEW TAURUS COLLEAGUES



**NANDINI M S**

Assistant Manager - HR  
Head Office



**GOURAV KHATRI**

Sr. Engineer- Presales  
Delhi



**D CHAITANYA**

Technical Engineer  
Vijayawada



**PRATHIMA K GOWDA**

Admin Executive  
Head Office



**RANJAN C**

Executive - Commercial & Finance  
Head Office



**Rohit Deshpande**

Sales Manager  
Mumbai

## BEST PERFORMER OF YEAR 2020-21



**SHIVARAJ**  
Employee of the year  
2020-21



**RAJESH**  
Best Performer in  
Sales



**AMIM**  
Best Performer in  
Pre-Sales



**ANBU**  
Best Performer in  
Operation



**AKARSHA**  
Best Performer in  
Technical



**SANJEEV**  
Best Performer in  
CRM & Service



**VARUN THYAGI**  
Best Performer in  
STITAM



**PRAJITHA**  
Best Performer in  
Accounts



**VINAYA**  
Best Performer in  
Bid Management



**BHARATH**  
Best Performer in  
Digital Marketing



**THIPPESWAMY**  
Best Performer in  
Commercial

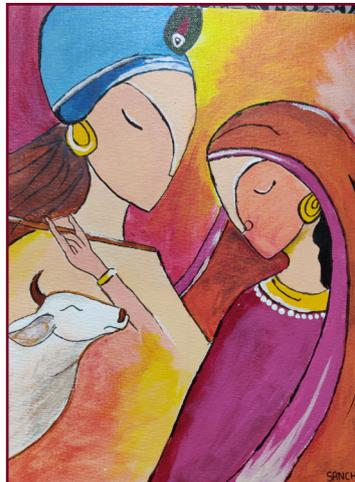


**SANDYA**  
Best Performer in  
Support-Back end office

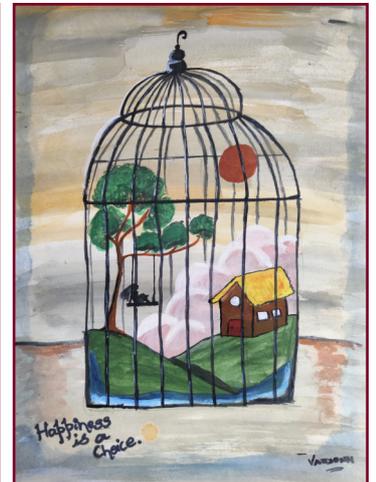
## HIDDEN TALENT



By Sanchit



By Varshini



## BIRTHDAY WISHES THIS QUARTER

M N Ravinarayan	07 May	Varun Tyagi	21 June
Rama Murthy	13 May	Shivaraj TS	20 June
Nijin Paul	19 May	Sanchit Srivastava	30 June
Zohair Hazan	30 May	Akarsha D C	09 July
Papai das	01 June	Prathap	20 July
Prajitha Kamal	09 June	Shridhar	23 July
Md Amim Shahbaz	15 June	Pankaj kakoti	23 July
Gopal	17 June	Gowtham Gowda	28 July



## FROM EDITOR'S DESK



### Dear Readers,

Let me start by stating a couple of quotes, that "Life is a specific number of breaths, There is no beauty more exquisite than intellect and no treasure more usefully than wisdom".

Last year due to the effects of the Corona virus pandemic worldwide, there was recession and speculations in the market, because of which it seemed like we are in a fight with one hand tied behind our backs.

As you all know even during these hard times we came out swinging.

We need to keep up the good fight and do better.

Taurus as you know stands for its steadfastness, dependability, commitment and support

Taurus as always, plans to introduce new technologies this year, through various inventions or innovations.

This year we have planned to take Taurus online presence many notches higher.

Also this year Taurus will be introducing various online training programs.

Taurus will also be starting certification courses for Taurus products.

During these tough times, it's important to reach out to the ones you love. This will not only show that you care, but will assure them of the reminder that they're not alone during this global pandemic. Reach out to someone going through grief, loss, or illness and all you have to say is that "I hope you and your family are staying safe".

By **Zohair Hazan**, Business Development Head

## TAURUS HOLIDAY LIST

01/05/2021	SATURDAY	MAY DAY	13/10/2021	WEDNESDAY	SAPTAMI
14/05/2021	FRIDAY	EID UL FITR	14/10/2021	THURSDAY	ASTAMI
10/09/2021	FRIDAY	GANESH CHATURTHI	15/10/2021	FRIDAY	VIJAYADASHAMI
02/10/2021	SATURDAY	GANDHI JAYANTHI			



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