

HAPPY GANESH CHATURTHI



CEEAMA E-NEWS

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From the Secretary's Desk



Dear All,

First of all I wish all of you a very Happy Ganesh Chaturthi !!

I am writing this to all of you as a secretary of CEEAMA, In recent GC meeting was held a few week back. In the meeting all the preparation and achievement for CEEAMAT-

ECH 2019 was reviewed. The progress is seen. I appeal all of you to use your good offices to help CEEAMA, our organization to book the entire stalls.

Date for AGM of CEEAMA is fixed on 29th September, 2018. The AGM venue is Chembur Gymkhana Chembur, Mumbai. The time is 4.30 PM. A formal notice of AGM will reach all of you in due course of time. I want everyone to mark this date in their schedule for CEEAMA Annual General Meeting. I appeal all of members to convey their names to Me or Mr. Prasad Arolkar for transport arrangement from their destination to Mumbai and back. Members shall be in sufficient no's to arrange the transport. A get together of all members is proposed at Mumbai after AGM. I request all of member to attend the same.

CEEAMA has decided to held the knowledge sharing programs at Mumbai and Pune. I request all of you to suggest the topics for such programs. In all 4 topics will be short listed in forth coming AGM. The programme schedule will be prepared and informed to all members. Our associate members are welcome to suggest topics and subject of consultant's interest.

CEEAMA is looking for young talent to work in CEEAMA Governing Council. Interested members are advised to contact secretary immediately for further discussion.

CEEAMA is arranging a get-together of members in Mumbai/Pune/Aurangabad/Kolhapur/Nashik. The final programme will be chalked out and will be informed to all concerned. Let's come together and discuss the future direction of CEEAMA.

I conclude with a appeal to increase the membership of CEEAMA in all categories.

With warm regards,

Suhas Keskar

Hon. Secretary

CEEAMA

What is New?

Intelligent Transformer by Siemens Paves the Way to the Internet of Energy

The Internet of Energy is on its way: Just like the networked systems and machinery in the industrial sector – known as the Internet of Things (IoT) – more and more elements in the energy industry are being equipped with new, digital functions. Siemens is pioneering this development: The Energy Management (EM) Division recently introduced the world's first digital transformer. From local grid transformers to high-performance power transformers, Siemens will deliver all future models equipped per default with intelligence and connectivity. This will optimize the operation of electricity grids, allowing utilization to be planned ahead and opening up new servicing and maintenance models, which in future will be implemented via apps and data transfer to the cloud.

According to Siemens experts in the energy sector, Sensformer – as the digital transformer is called – will trigger an innovation boost similar to the replacement of the mobile phone with the smartphone.

In principle, Sensformer with sensors and connectivity device represent a new product class of transformer. The Sensformer comes pre-equipped with sensors that measure the oil level, oil temperature and the winding current on the low-voltage side in real time. A GPS transmitter determines the exact position of the Sensformer. All the data generated by the sensors are transmitted to the cloud via the Sensformer connectivity device. Data is transferred using the GSM communications standard or via the Ethernet.

In addition to their primary task of transforming voltage, Sensformers will then also be able to act as information hubs for the power grid operators, who are in need of new solutions to fuel the three D's of energy supply: decarbonization, decentralization and digitalization. The power industry is currently undergoing an epochal change: The ambitious goal of drastically reducing carbon dioxide emissions to counteract climate change can only be achieved by significantly increasing the production of electricity from renewable energy sources. This goes hand in hand with the decentralization of power generation.



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Auto Cluster, Chinchwad, Pune

For more details Kindly Contact: ceematech@fairact.in

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The strongly fluctuating loads associated with the unpredictable generation of renewable energy influence the loads on the transformers and if the loads are heavy - the transformers can overheat. The Sensformer can now communicate this status by measuring the oil temperature and winding current and sending the results to the cloud. Improved load distribution will help prevent damage, including blackouts. Even if a Sensformer were to break down, its location can be quickly identified. This is especially important in remote areas so that the service technicians can be immediately dispatched to carry out repairs, thereby minimizing the risk of a blackout.

Source: <https://www.siemens.com/innovation/en/home/pictures-of-the-future/energy-and-efficiency/the-future-of-energy-sensformer.html>

Contributed By Mangesh Shirgaonkar

Article

Harmonics – Transformer Loss assessment using Blended Analysis

Recently we resolved one case of harmonic mitigation, transformer utilization and guiding client on correct investments resulting in recurring reduction in operating cost.

Power analyzer recording and software simulation was used in BLENDED form to arrive at various options with consequences.

Setup

33/.433kv 3150 KVA transformer, 2000KVA contract demand, 1200KVA Bill MD.

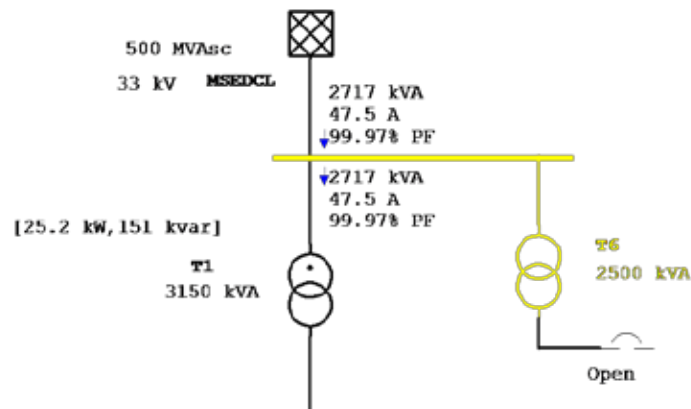
Plant is involved in rubber-based transmission belt manufacturing.

Largest load 750kw mixing mill with DC Motor and drive. Repetitive Peak loading was 2600 kva with 14% voltage and 36% current distortion as DC drive was using 6 pulse rectifiers. Loading pattern shows 3 mins peak in every 5 mins. Billing MD misguided electrical contractor and top management and they wanted to add new proposed mill of same capacity on same transformer. Electrical maintenance manager was not convinced and requested a power audit as he was constantly observing "cyclic hum and vibrations" from transformer and busduct.

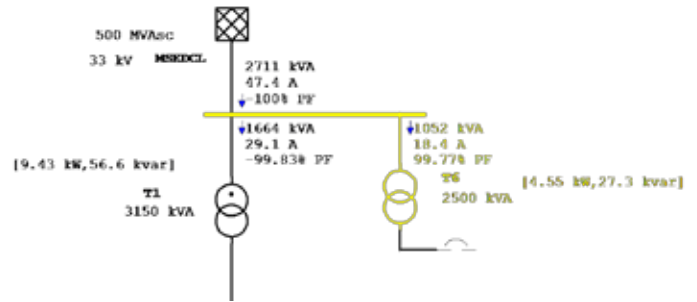
Site measurements carried out with a power analyzer and the system was simulated in Etap.

Observations

3150 KVA transformer already loaded up to 67% and is handling 36% distorted current with K factor of 10. The voltage distortion observed was 14% compromising power quality available for other loads. It was noted that Economically feasible harmonic mitigation will reduce current harmonic distortion reasonably but may not release much KVA to accommodate proposed load.

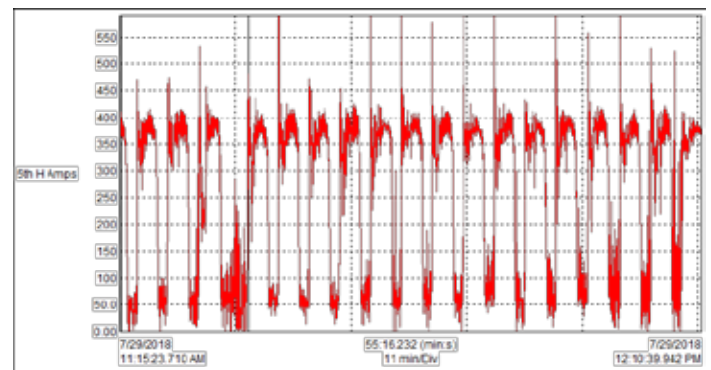


Existing and New Load on OLD 3150 KVA transformer.
Transformer Load=86% Transformer Loss = 25.2KW



Existing and New Load on OLD 3150 KVA transformer.
Transformer Load=53% and 42%
Transformer Loss = 9.43+4.55 = 13.98KW
This indicates saving of 11KW
- 11KW x 20Hrs x 300Days x 8Rs = Rs. 528000 per year

5th harmonic load current observed in present conditions was as follows:



This 450 Amps 5th harmonic current produces high frequency voltage drop across transformer impedance and further increases voltage distortion.

Recommendations:

- Ideal situation would have been using DELTA/DELTA/STAR transformers and 12 pulse DC drives for both 750KW DC drives. This was not possible as OLD drive was in use and new machine with 6 pulse drive was already shipped.
- We recommended hybrid harmonic mitigation involving combination of fixed, thyristor switched, detuned passive filters and active filters for harmonic mitigation and power factor correction.
- As a best solution, we recommended a **DELTA/DELTA/STAR converter** grade transformer of 2500KVA rating and advised client to shift both DC drives on this transformer. This will reduce transformer primary side current distortion – when both the drives are working simultaneously.

Conclusion:

System Simulation helped in calculating transformer loss more precisely and document the savings. While reduction in losses offering good payback is a motivator to client for investing in transformer, other benefits achieved are

- 1) Reduction in voltage distortion
- 2) Reduction in harmonic currents through transformer and other linear loads.
- 3) Increase in life span of all electromagnetic equipment in the plant.

Simulation was also used to decide distributed filter installations of FIXED type with various downstream feeders. This helped in reducing cost of harmonic mitigation solution. The approach helped in reducing requirement of Active Harmonic filters (AHF) to achieve required results. Reduction in AHF reduces initial cost and recurring cost on their maintenance.

A comprehensive, unbiased approach in harmonic mitigation using BLENDED techniques leads to a cost-effective solution for the benefit of project and investors.

Prepared by:
Narendra Duvedi



(A Govt. of Maharashtra Undertaking)

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CE/Testing/NET/ABT Meter/ 9692

Date: 26/04/2018

CIRCULAR

Sub: Utilization of existing installed ABT meter (SEM) as Net Meter for Solar Roof-top projects.

As per the provisions of MERC Net Metering regulations 2015-"Net Meter" means an energy meter as defined in the Electricity Supply Code which is also capable of recording both the import and export of electricity, or a pair of energy meters, one for recording the import and the other for recording the export of electricity, as the case may be. The Net Meter shall conform to the standards specified by the CEA for installation and operation of meters. If the Eligible Consumer is within the ambit of Time-of-Day ('ToD') Tariff, the Net Meter installed shall be capable of recording ToD consumption and generation.

Now a days it is observed that many of the HT consumers particularly the consumers who had previously opted for Open Access and now availing MSEDCL's supply and has installed rooftop Solar power plant are insisting for allowing them to utilize the existing installed ABT meter (SEM) as Net Meter.

In this connection, it is observed that the technical specifications of Net Meter and Special Energy Meter (SEM) are mostly same with minor differences. Both the meters are TOD trivector meters having Import-Export facility. The difference is observed in the Demand Integration Period and the load survey time interval; for SEM it is 15 min and for Net-Meter it is 30 min. However, the net-metering facility involves settlement / set off of solar energy banked with MSEDCL on unit basis only.

In view of above the competent authority has accorded approval in the matter as below:-

"In case of Solar roof-top projects in r/o MSEDCL's Consumer, if the existing installed meter is ABT compliant Special Energy Meter (SEM) then the same shall be permitted to utilize as 'Net Meter', as per the request of the consumer."

This circular shall come in force with effect from the date of issuance. This circular is available on MSEDCL website i.e. www.mahadiscom.in . So hard copy of the same shall not be issued.

(Shri Kishor Shegokar)
Chief Engineer (Dist/Testing)

CEEAMA Activity

ECAM Exhibition 2018:

Show was organised by Electrical Contractors Association of Maharashtra - Pune Region, and supported by CEEAMA.

Some Glimpse from the Seminar



Felicitation of Mr. Anil Bhandari - Hon. President of CEEAMA by Members of ECAM.



Mr. Suhas Keskar - Hon. Secretary of CEEAMA sharing his thoughts on the day of Inauguration.



2nd Day Panel Discussion - Mr. Suhas Keskar - Hon. Secretary of CEEAMA Mr. Vinayak Vaidya - Director of CEEAMA and Mr. Narendra Duvedi in discussion with Members of ECAM.



CEEAMA BOOTH

Mark Your Diary

Annual General Meeting

Date : 29th September 2018

Time : 4.30pm

Venue : Chembur Gymkhana, Mumbai

BECOME A MEMBER A TODAY!

CEEAMA is a section 25 "Not for Profit Company" registered with Registrar of Companies

For more details Kindly Contact: Admin@ceeama.org or Visit www.ceeama.org