



## Case Study-I

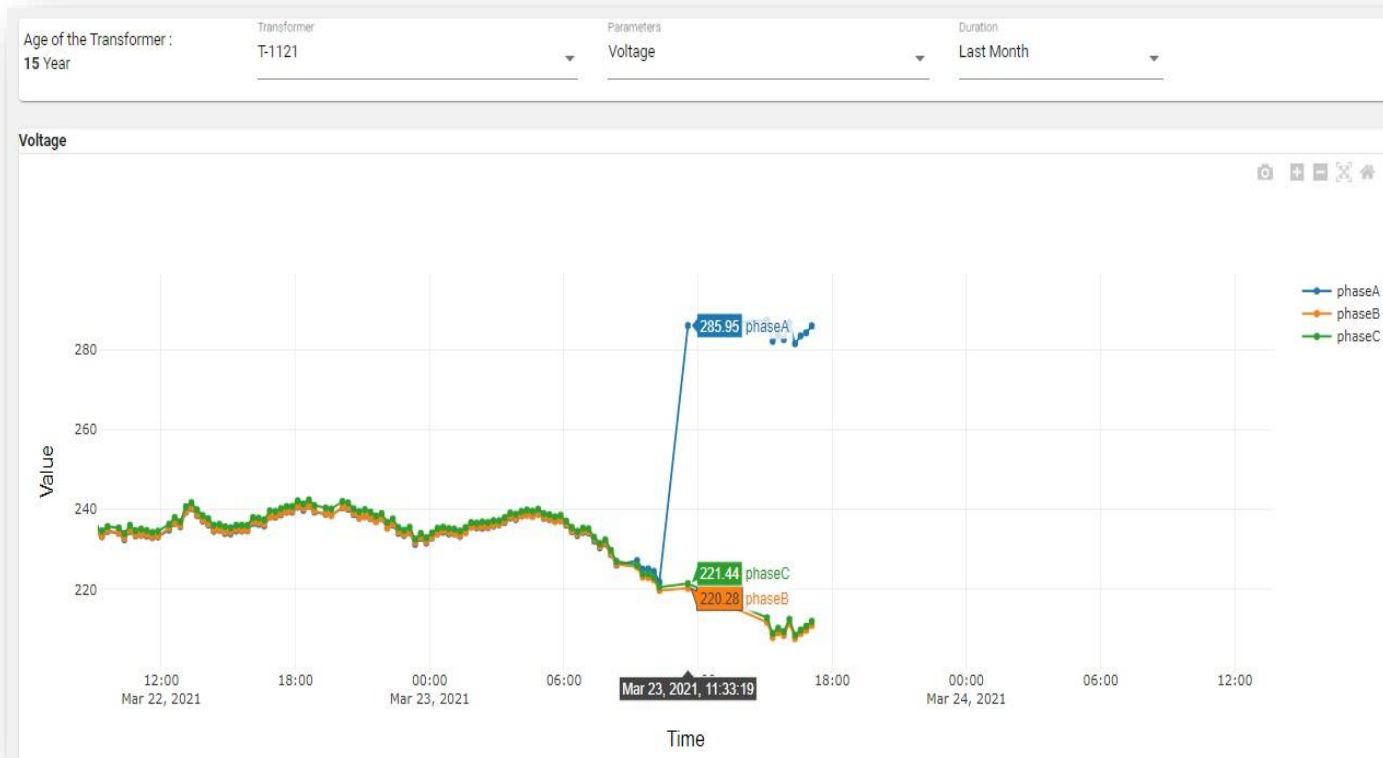
•Transformer id: -	<b>T-1121</b>
•Transformer Make:-	<b>Kirloskar Electric company Ltd.</b>
•Rating of X'mer:-	<b>750 KVA</b>
•Maximum rated load current: -	<b>1000 Amps.</b>
•Customer name: -	<b>Visen industries</b>

With the help of the KRYFS BOLA device, the customer's maintenance team could disconnect their transformer on time before any major damage. Although, the customer paid Rs. 1,50,000/- to repair and Rs. 10,000/- per day for a week as rent for an old Transformer, this could have been the worst, if it wouldn't have detected proactively by the BOLA device. It could have damaged the transformer and might have to replace it with a new one. Also, it would have attracted more cost towards the rent as transformer manufacturing takes at least 8 weeks.





# Case Study-I



Transformers Rph to N voltage goes high, i.e. 287V. When this uncertainty happened BOLA device record this abnormality and instant notification is sent to respective maintenance person by the help of SMS and Email. Maintenance person immediately isolated the Transformer from the power system.



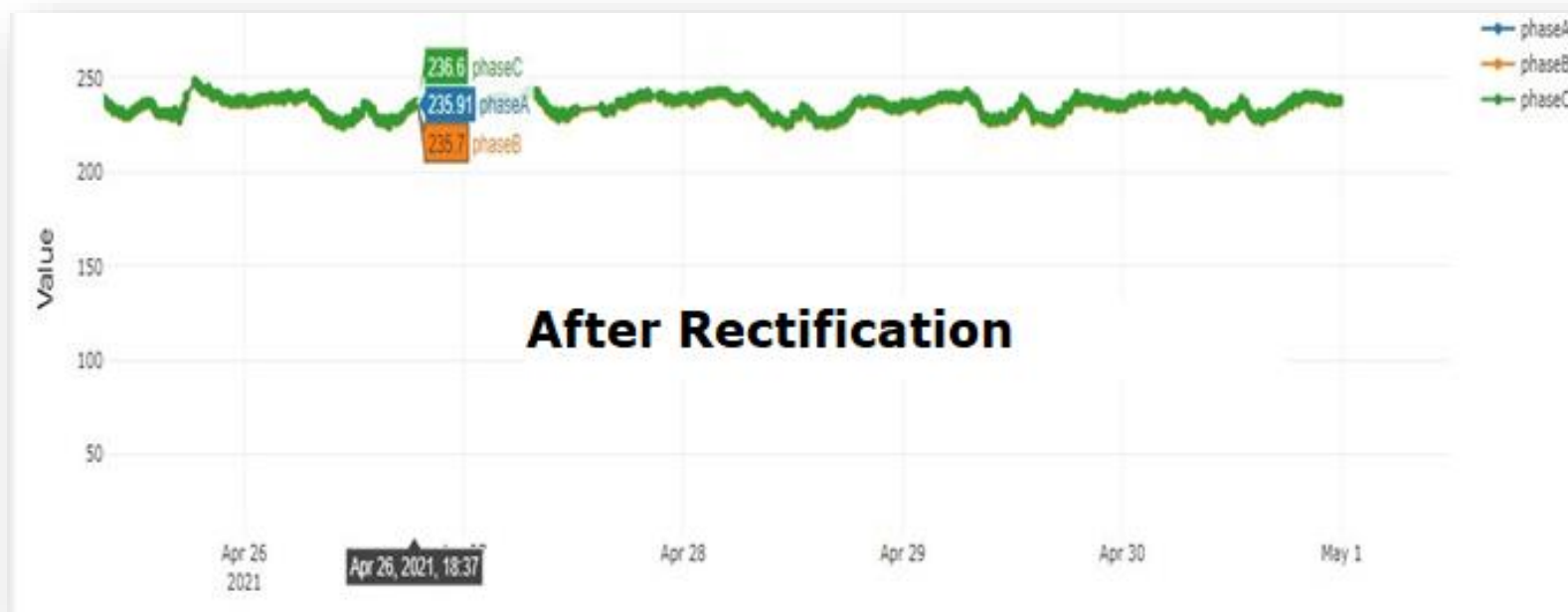
## Case Study-I



• After diagnosis of transformer short circuit failure in R phase observed.

• Following are the possible failure reasons:-

- Due to hot spot temperature creation.
- Decrease in dielectric strength of oil & weakened the insulation to rupture under normal voltage condition.





## Case Study-II

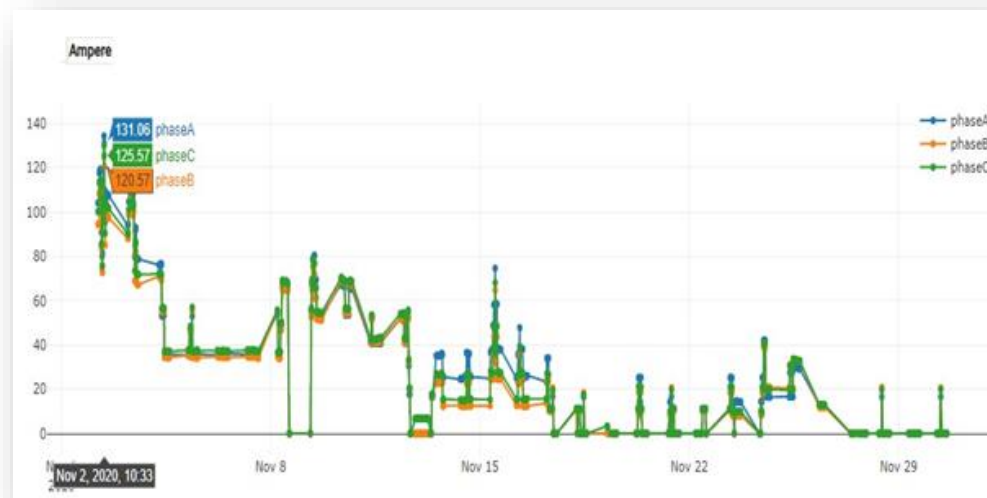
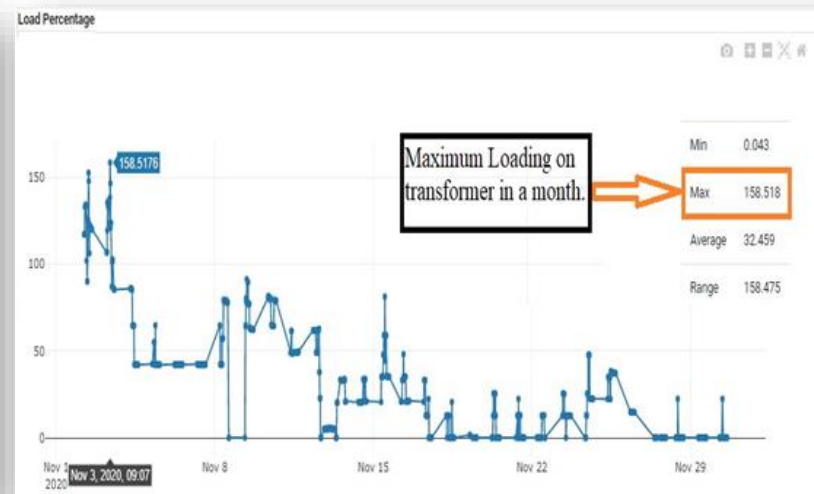
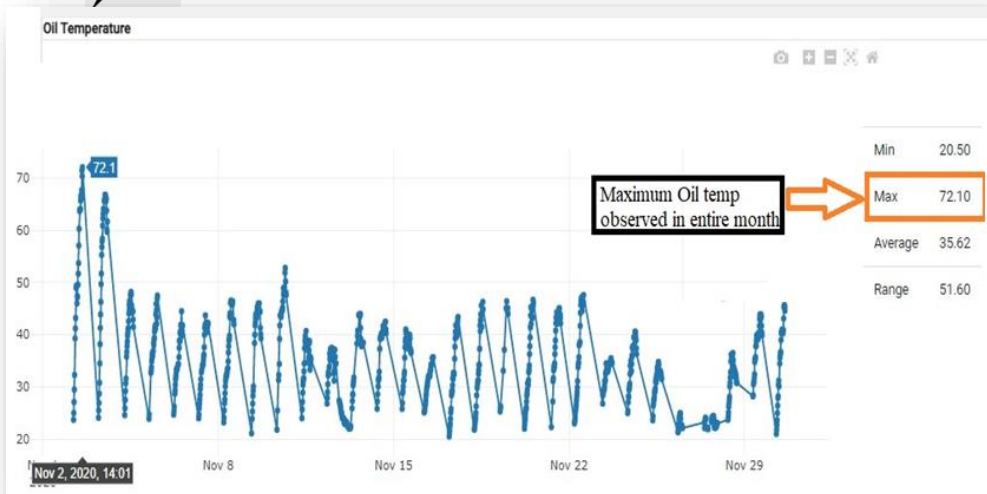
- Transformer id: - **SL-3820**
- Rating of X'mer:- **63 KVA**
- Maximum rated load current: - **85 Amps.**
- Customer name: - **APCPDCL**

**The failure rate in government utilities is between 15% to 18% in India. And the major factor for these failure are mainly because of over loading of the Transformer which is not monitored by the utility. Because of our BOLA device such overloading was monitored by them and our BOLA team. Because of such proactive information, the loading was maintained as per requirement.**

1. In Nov.2020, Oil temperature of transformer goes high continuously. Continuous rise in oil temperature will be hazardous for transformer, it will affect on winding of transformer.in this month we got notification via SMS and email of this uncertainty.
2. Following are some snaps which clearly gives idea, whenever transformer is overloaded, oil temperature goes high.



# Case Study-II – Before rectification

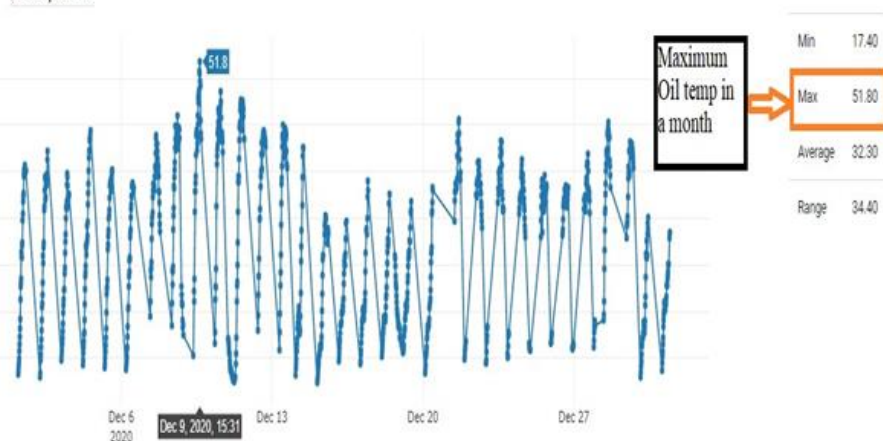


3. We informed customer regarding this uncertainty and given guidelines by the help of monthly analysis report to maintain transformer loading up to 70-80%.
4. Customer noted all the points and maintained transformer loading in next month. Some snap shots for reference.

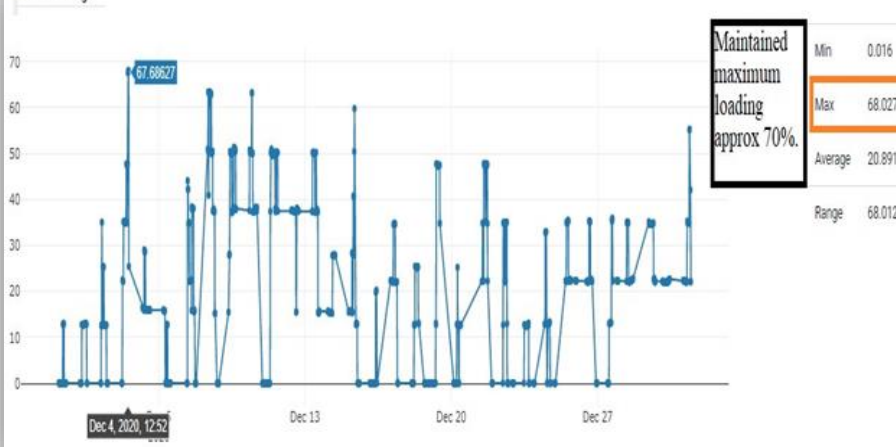


# Case Study-II – After Rectification

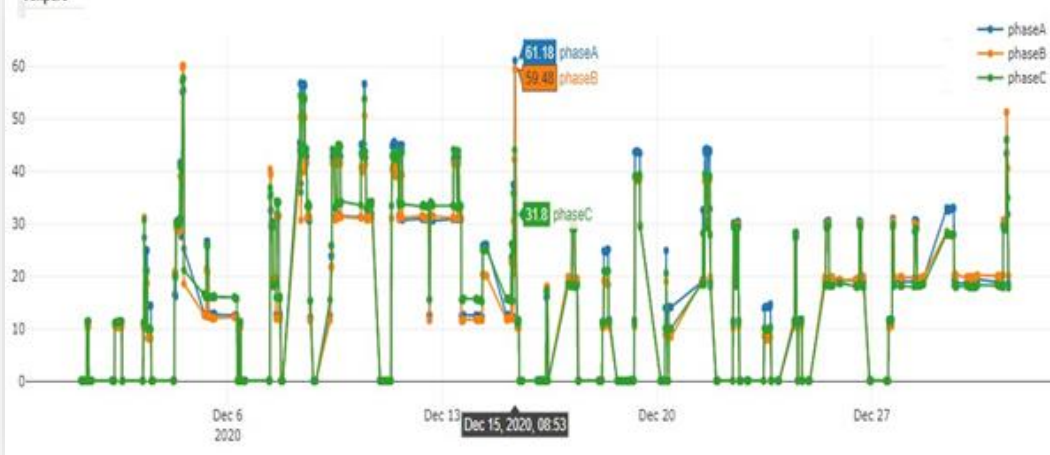
Oil Temperature



Load Percentage



Ampere



**Result: -This is how customer has maintained transformer loading and prevented the transformer from failing and that increased the life of the transformer.**





# Case Study-III



**Transformer id: T-1135**  
**Customer : KRYFS**  
**(Unit-II) Kherdi**



**With the help of KRYFS BOLA device maintenance team noticed the low voltage on LV side and were able to disconnect the Transformer on-time before any major damage. The damage could have been worse if not detected proactively by our BOLA**

1. Suddenly Voltage at LV drops and phase to neutral voltage goes below 50 V, this uncertainty capture by BOLA device. Same notification send by device to user maintenance person via SMS and mail. The maintenance Person physically visits the Power station and found some unwanted humming sound from transformer. Immediately he isolate the Transformer from the power system.

2. After diagnosis, at incoming side of transformer jumper connection was found loose. So, he tightened the jumper connection and rectified the problem and Transformer was charged.

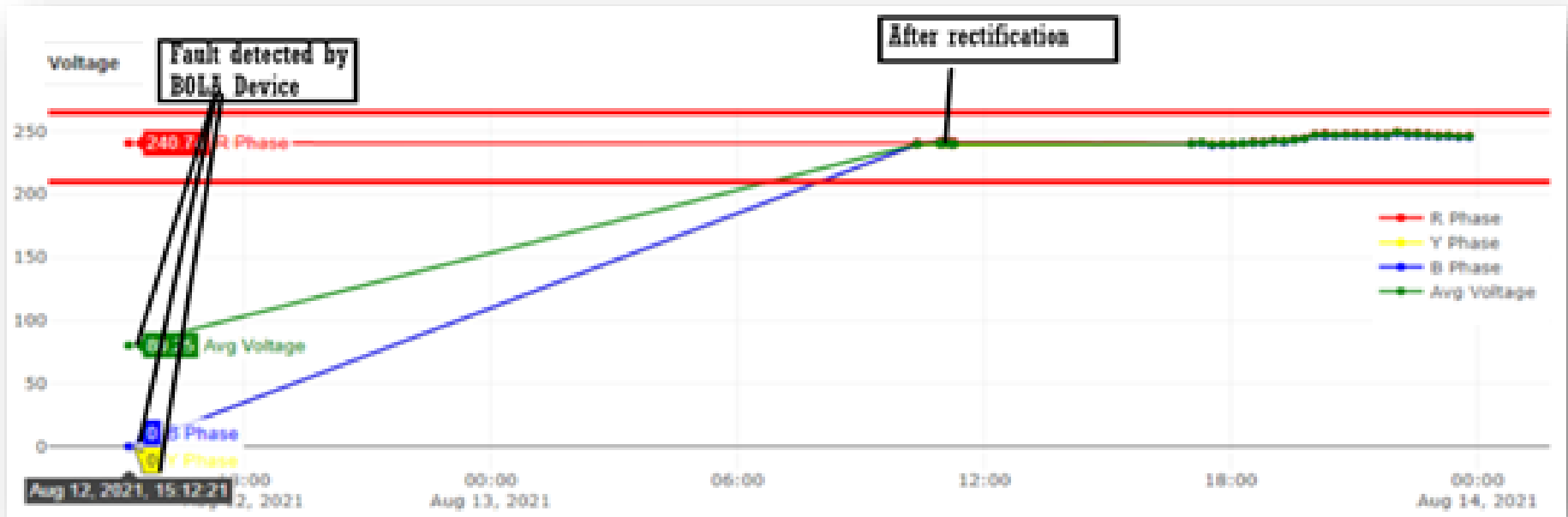


# Case Study-IV



**Transformer id: T-1146**

**Customer : DNH Power Distribution Corporation Ltd, Silvassa**



**With the help of KRYFS BOLA device, the site engineer received an alert of Zero voltage on Y and B phase of Transformer LV side. Immediately they attended the site and disconnected the Transformer on time before any major damage. And also avoided the single phasing of the Transformer and gradually may have resulted in failure of the Transformer.**





## Case Study-IV



1. On 12th August 2021 suddenly the Voltage between Phase B-N and Phase Y-N drops to zero voltage and this uncertainty was captured by BOLA device. Upon receipt of Alert notification was sent by BOLA device to user maintenance Engineer via SMS and mail, he physically visited the site and found some abnormal humming sound from transformer and immediately isolate the transformer from the power system.
2. After inspection they found that Drop out fuse (DO) was disconnected on the Incoming side of B and Y phase. They rectified the connection and charged the transformer on time.
3. Generally, such abnormality are detected after any outage complaint from the local peoples and may take hours to detect and rectify the issue. As a result into inefficient power supply and may gradually develop failure in the Transformer.

