



How a tiny piece of Aluminium tape caused a Plant Stoppage

Background

Breakdown is always one of the biggest obstacles in smooth running of Plants and lead to human/financial loss. To prevent that, we follow tens of Maintenance Practices. But at times, the error in following proper Maintenance Practice leads to a disaster, we will talk about one such case which is quite enlightening and educative.

The incident happened on March 10th, 2020, on Holi/Dhuleti day.

Findings – At Site

When almost all of us were celebrating the Holi festivities, in one of the Process Plants, a distress call went something like this :

Shift Engineer : Sir, Pre-heater fan of 2750 kW has stopped abruptly, its MV drive has stopped too, this has led to the plant stoppage, what should we do?

Manager : I am on my way to the Plant, in the meantime, please check for any visual or physical damage.

When the team reached the incident site, the inside of the MV Drive Panel is found as shown in the picture :



Authorised Channel Partners





We can observe a flash-over across a fuse and some carbonisation nearby. This flash-over caused the MV VFD drive to trip, which eventually led to complete stoppage.

But what caused the flash-over? Upon investigating, it was found that it was caused by a stray piece of aluminium tape, actual photograph of the same is shown below.



Now, how did this Aluminium tape got into the compartment and led to stoppage?

Root Cause Analysis

- The subject MV VFD Drive was for 2750 kW, 6.6 kV Motor, having 4 Nos. of 3.7 kW fans for cooling inside the Drive Panel Compartment.
- These cooling fans blow the air from inside of the Panel to outside to keep the Drive cool. In the process, a negative pressure is always present in the panel, meaning, it sucks the hot air from inside along with dust particles if any, and throws it out.
- Now the Aluminium tape, which is normally used to close unused/blank holes in panel (to prevent ingress/vermin-proofing), was pasted in this Panel from INSIDE. Over a period, the glue-strength deteriorated, tape came out, and due to negative pressure present in the panel compartment, the tape came in contact across the fuse which caused the flash-over.

Conclusion – How insightful maintenance practices can prevent such accidents

- Wherever possible, Blank/unused holes or open spaces are to be vermin-proofed from OUTSIDE.

Authorised Channel Partners





- The use of non-conducting material such as puff-seal, is to be encouraged.
- While applying tapes, the surface is to be cleaned properly and tapes used should be of good adhesive quality.
- We all know that despite taking all such measures, accidents happen and almost all electrical accidents result in Fire. To minimise the damage through Fire in Electrical Panels, we can use **Fire Detection and Suppression system**. To know more, call/write to us.



- The above measures are in fact, the first line of actions, we can adopt various other practices to prevent such disasters.
- This incident clearly shows that how a tiny piece of tape – till now considered unimportant and paid little attention to – can cause disastrous consequences in assets failure and affect overall revenue.

We, as an Electrical asset consultant and service provider always suggest what is best to run your industries smoothly and without hiccups of maloperation and breakdown.

And if you are looking for a dedicated agency that understands the direct link between your assets and your revenue, call/write to us, we will be happy to assist you.

SYSTEM PROTECTION

E-Mail : bdm@systemprotection.in

Web : www.systemprotection.in

Tele : +91-265-2225137

(Servicing & Testing of Circuit Breaker, Relay, CT, PT, Transformer, Other Switchyard Equipment's, Relay Co-ordination Studies, Cable, etc.)

Authorised Channel Partners

