



Case Study – Why Vermin Proofing of Panels are must and must be periodically checked (Part 1).

Wildlife, we love as much as the next person. But when they get into your Electrical Installation, they become 'Vermin'.

Animals, mostly Reptiles & Birds can cause significant damage to your Critical & Expensive Electrical Installations, since they love to setup their houses in the Nooks and Crannies where control and protection wiring is housed. The warmth and seclusion are particularly attractive to them.

In all the plants, where we Served, Visited or Know, we have noticed that Mouse, Lizards & Snakes have a special affection towards Electrical Switchgear and Instrumentation Panels.

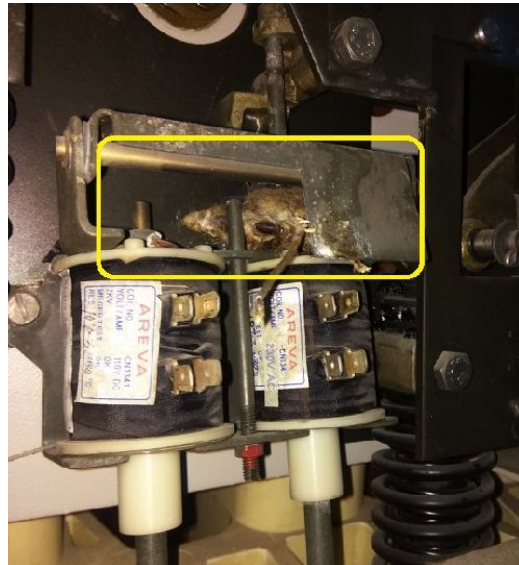
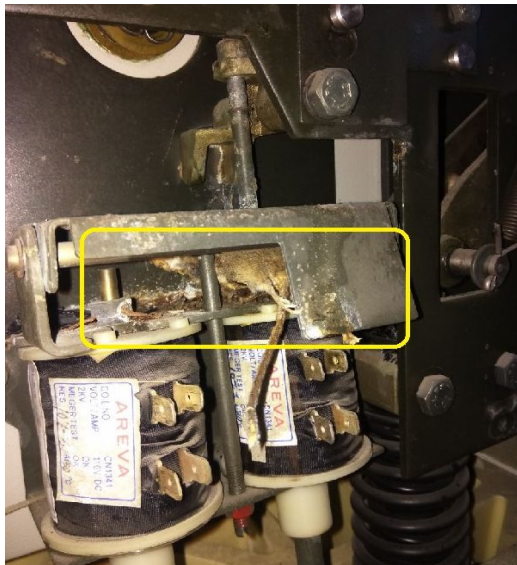
Sharing with you all, one such Incident and Photos for what we have observed during maintenance of HT Panel of 11 kV.

Background

As a part of the service, we went for comprehensive maintenance of HT Switchgears / Panel which includes, Relay Testing, Breaker Servicing & Testing, Control panel cleaning & Tightness, CT & PT testing, Busbar maintenance and testing as per availability of Bus shutdown.

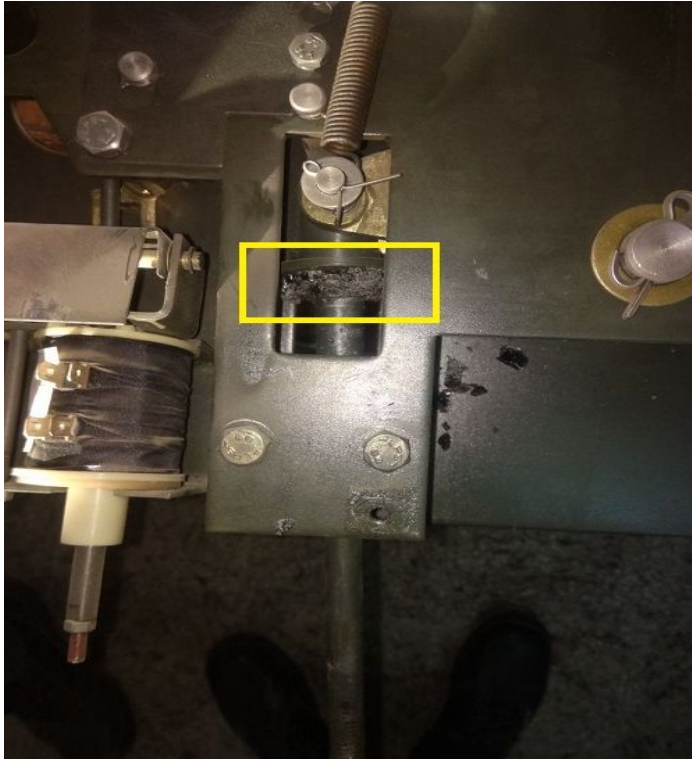
Findings- at Site:

During maintenance of one VCB of 11 kV panel board, we found 2 Nos. of Mouse inside the Breaker as shown in Pictures. We felt sorry for the Mouse. Anyways, we are sharing here the pictures of Mouse, trapped and dead in breaker. Photos are shared so that others can also learn from the incident.



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Coming back to the point, let us think what would have happened if these 2 mice had travelled towards the 11 kV bus? This could have led to a system breakdown worth rupees Lacs/Crores, risk of life to individuals and owing liability of this incident, last but not the least, Transfer/Suspension/Termination from the Maintenance team as a consequence. The maintenance team must be thankful that this didn't happen, and the problem was rectified then.

Root Cause :

Now, when enquired with Maintenance Engineers, they said, it was some 2.5 years back when they applied Aluminum tape and Puff seal at various holes inside the panel. We investigated & checked for the same and found that while applying aluminum tape for that panel, Individual might have forgot to clean the base where tape was applied, hence it got opened due to improper adhesive contact with panel and same has let Mice to get into the Panel easily.

Out of 50 Nos. of panels, only one panel was found in such condition, leaving an error margin of 2% and this could have caused Marginally higher production and breakdown losses.

Precautionary measures taken after this incident:

All 50 Nos panel vermin proofing was checked again and the same was done with Puff seal where there were any openings left. At few places completes base near panel opening was clean and was closed properly with Aluminium tape.

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Precautions to be taken:

Jokes apart, we sincerely advise to all the plants and their Maintenance Team either we serve them or not, to check their Switchgear Panels during every annual shutdown or Complete cleaning, Servicing & Maintenance of HT Panels in every 2 / 3 year for safety and surety. Although Checking of Busbar is altogether a different issue and requires heavy planning for complete dead bus / black out.

Given that almost every plant undergoes annual Relay testing and breaker servicing conducted by third-party providers, System Protection has established its presence in over 500 plants, offering Circuit Breaker and Relay Testing services. Now, the remaining tasks for panel inspection include control wiring simulation and tightness checks, thorough cleaning of the entire panel cubicle (including the breaker chamber, cable chamber, and busbar chamber), CT & PT testing (if necessary), and busbar maintenance and testing. To carry out these tasks, the plant maintenance team typically relies on technicians and helpers, who are often non-skilled workers hired from contractors and Engineer / Manager themselves have to supervise the Job. This is how many times other Maintenance activity suffers and sometimes non supervision of Nonskilled workers leading to accidents / incidents and consequences as a result.

Additionally, Maintenance team also need to coordinate the procurement of cleaners / consumables such as cleaners, brushes, cotton wastes and scrubs, as well as equipment like blowers (if not available) and tool kits including screwdriver and spanner sets (if not available). Ensuring the proper indenting process and maintaining the quality of work performed by non-skilled workers also requires diligent supervision and follow-up.

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.

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

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