Automation of Hazardous Poles Real Time Monitoring

By TATA Power Delhi Distribution Ltd | Category: Implemented Innovations

The lifeline of any power utility is its electric poles. Metallic conductors are the skeleton of the power network. With this in mind, Tata Power-DDL initiated a practice involving identification of critical poles based on various parameters. As a utility, Tata Power-DDL assets are exposed to external environment. Several factors adversely affect its network, like public encroachments, pole hit by vehicles, jumbling of cable TV wires, etc. These external factors create a potential hazard, causing unsafe situations beyond their control. Automation of hazardous poles has helped TATA Power-DDL identify and capture hazards under *Suraksha* integrated with GIS, SAP & OMS for real time monitoring.

The Context

In power distribution, majority of work is done at a height i.e., at the top of a pole near a live electrical network. The idea was to identify unsafe situations or hazards on the pole and use this data while attending any operation service call of the specific pole. The Safety group of TATA Power-DDL was facing a peculiar problem in which reporting of accidents at pole was higher as compared to the reporting of near miss cases or unsafe situations. While investigating the reasons of Loss Work Day Case (LWDC) incidents vis a vis the quantum of work on poles, it was observed that improper identification of network risks or existing hazards was a concern and a common cause of the incidents.

Impact of the Innovation

Physical Safety of employees & associate workforce

The Innovation

Under this innovation, a real time system driven, sustainable, risk identification and intimation mechanism was developed. Pre-identified network risks and existing hazards, based on network attributes and physical attributes of electric poles were communicated on real time basis to the workforce, to enable them to take additional safety measures, extra manpower, supervisory support etc. prior to starting work.

This was achieved by integrating heterogeneous IT and OT platforms like GIS (Geographical Information System) used for network mapping, OMS (Outage Management System), customer database, *Suraksha* Portal and running algorithms to have a real time hazard identification and risk assessment of each individual electric pole. At the face of it, these systems were not designed for HIRA (Hazard Identification and Risk assessment) or JSA (Job safety analysis). The novelty of the idea was to use these platforms for system driven HIRA based on the data already available in the system.

Overcoming Challenges

Challenge #1

Non identification and categorisation of Hazardous poles. For identification and categorisation TPDDL team have segregated the poles based on Network attributes and Physical attributes. The data for the both attributes was captured & reported through web based portal "Suraksha"

Challenge #2

Flagging the Hazardous poles based on the data captured and real time monitoring for necessary precaution to Lineman: TPDDL team integrated this data to GIS (Geographical Information system) for flagging these hazardous poles and OMS (Outage Management System) for real time information about the poles.

Challenge #3

Communicate the process for identification and reporting of hazardous poles: TPDDL used platforms for awareness and training sessions of the process. Dedicated drives were conducted for hand-holding the field officials in each of the 12 districts of the organization. Through these efforts 25,526 out of 2,81,773 poles across Tata Power-DDL came to be reported under the Hazardous category.