

UNIQUE APPROACH FOR SUSTAINABILITY

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Background:

During the process of commissioning of Unit#1 BgTPP it had been observed that many equipment especially electrical motors were found either defective or inoperable. This thing had happened due to delay occurred for implementation of the project and adverse weather conditions specially, the heavy rain in the area.

Condition of various motors at site:

During commissioning of Unit#1, it had been observed that many motors in all categories i.e. HT, LT and DC were found not suitable for immediate run. DC-JOP motor got burned which lead to stoppage of Unit as it is a vital equipment. While replacing said burnt DC-JOP Motor, two other motors available at site were shifted to turbine floor for checking for revival but it was observed that IR Value of all the motors were found to be zero and heavy water and mud ingress inside the motor(Figure-1a).



Figure: 1a

It was apprehended that such situation may occur any time in future for the vital equipment which may lead to stoppage of unit and loss of generation. In view of such situation at site a prudent decision was taken at site on consensus discussion that all vital motors for sustainable operation of a unit are to be overhauled and made available as spares, so that they can be used at any time during emergencies.

Actions taken

Effort was made by awarding contracts for revival of these unhealthy motors. The contracts for higher capacity AC motor and DC motor overhauling and rewinding of LT motors could not be started as contractors had expressed their inability to engage specialized manpower required for the jobs for the reason that BgTPP is a remote disturbed area, specialized and experienced manpower are not available in this vicinity for meeting the highly technical jobs of Electrical equipments.

Subsequently a contract was awarded to a reputed vendor of Kolkata for carrying out the above job, but they also failed to mobilize manpower.

A decision was taken at site to hire specialized and experienced manpower from Kolkata through M/s UPL and accordingly a contract has been awarded to deploy expert and specialized manpower who has worked in reputed organizations.

Seven expert and specialized manpower persons who were working in reputed companies of Kolkata have been hired through M/s UPL.

Threat calls for extortion were received by this manpower immediately after their arrival at site by local miscreants. Matters were resolved by continuously persuading the matter with local administration and police.

Infrastructural facilities developments

The overhauling of motor requires workshop facilities, special T&P, Consumables. We were neither having workshop facilities nor special T&P and Consumables available with us. The following measures were taken to mitigate the issue.

1. A semi covered shed which was earlier designated for storing of material had been renovated to suit the purpose of workshop. Electric supply provided for taking no-load trial run of the motors after overhauling and drying out of the motor.
- 2 Derricks fabricated to serve the purpose of EOT crane for dismantling of higher capacity motors shown in Fig: 2a & 2b

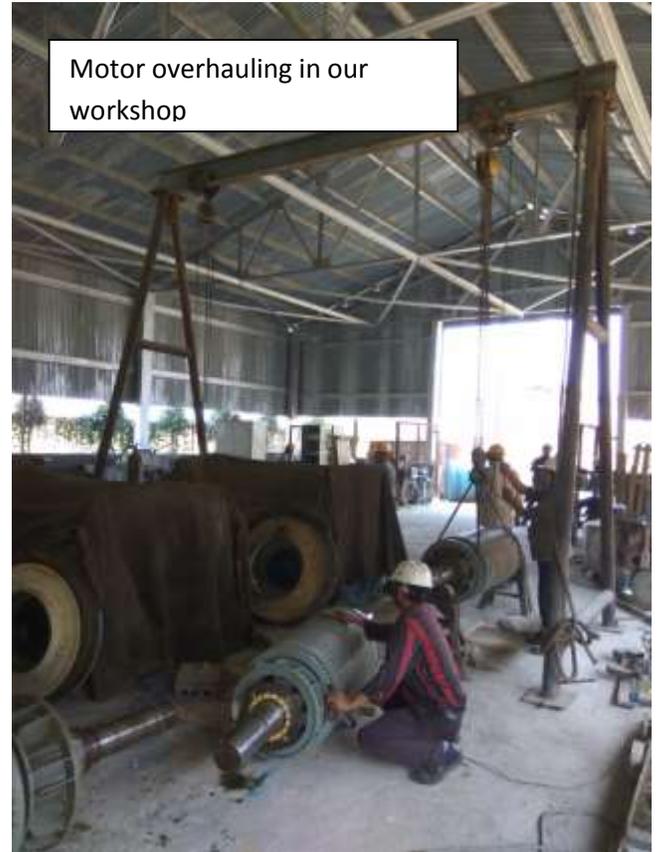


Figure: 2a & 2b

3. Special T&Ps and Consumables to meet the requirement were not available at local market. All the Special T&Ps and Consumables for six months consumption were purchased from Kolkata market through committee purchase. The materials were brought by sending our departmental truck to Kolkata.

Observations after COD of Unit#1

It was observed after COD that abnormal sound were there in one FD Fan and one CW motor. Both these motors were replaced with our overhauled motors and thus succeeded to avoid breakdown of these motors.

Usefulness of overhauled motors for U#2 and Offsite

In unit#2 PA, SGECW, Mill, FD and BFP motors (The photographs showing before & after overhauling of BFP motor shown in Fig:3a & 3b) were replaced with our overhauled motors in the erection stage itself as the designated motors for this unit was having low IR and PI value due to ingress of water and mud inside the motor.

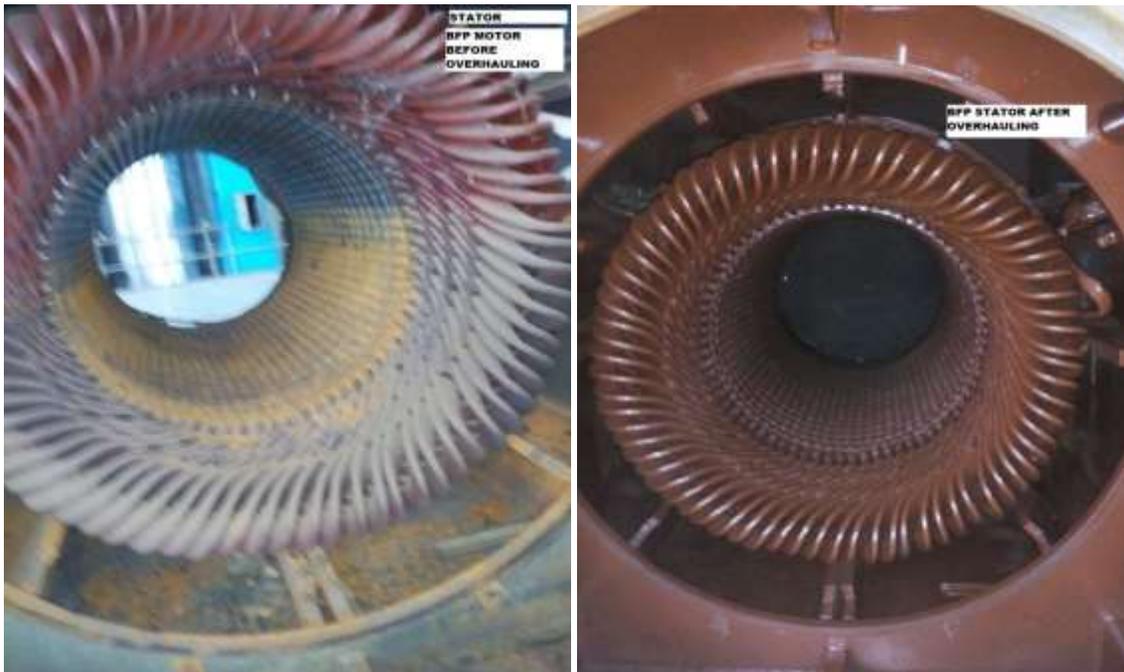


Figure: 3a



Figure: 3b

3 numbers Ash Slurry motors were replaced with our overhauled motors in the erection stage itself due to the same reason and hence it was made possible to commissioning the equipments.

Usefulness of expert manpower

In addition to get the motor overhauled by the expert manpower, this manpower is also utilized for regular preventive maintenance of motors and we have not awarded any other contract for the works related to motor maintenance.

We have also started in-house rewinding of LT motors through this manpower only and no separate contract for LT motor rewinding is there at NTPC, Bongaigaon shown in Fig: 2a & 2b.

The results

This is unique approach for sustainability due to unique site condition of Bongaigaon in comparison to other NTPC stations in following two ways.

1. Normally a new motor is getting overhauled after 2 to 5 years after initial commissioning depending on the CMG report in all other NTPC stations, whereas in Bongaigaon we are overhauling the motors before erection.
2. Overhauling is carried out through contracting agencies available at site in all other NTPC stations, whereas in Bongaigaon we are overhauling the motors by hiring expert and specialized manpower persons who were working in reputed companies of Kolkata have been hired through M/s UPL.

We have overhauled the following important HT, LT & DC drives and increased the sustainability of the plant and life of the equipments till now and the process is on.

HT Motors (CHP Motors, PA, Mill, Ash Slurry, FD, CW and BFP etc): 20

LT Motors (APH, Seal oil, Clinker Grinder, Vacuum pump, JOP, EOP, CHP & AHP Motors etc): 54

DC Motors (JOP, EOP, Seal oil, EOP etc): 6

Conclusion

In this process we are not only increasing the sustainability of Unit # 1, the sustainability of other units are also increased as we are putting overhauled motors in Unit#2 and 3 also in the erection stage itself.