Project Title: Condition Assessment & Stability Check of Identified Steel Structures of NSPCL Plant, Rourkela

Duration: 6 Months (Completed Project)

Objectives:

- To check the structural adequacy of the existing TG building for the increased roof load.
- To conduct visual inspection, non-destructive tests on structural steel portion on the structural steel members and connections of TG building roof supporting structures, boiler supporting structures, ESP house, Chimney staircase, Fuel storage tank & DM Plant, Ash Storage silo supporting structures, Gate 1 & 3, RCC Ground Hopper, wagon tippler roof supporting structures, Crusher & Junction house roof supporting structures.
- To conduct visual inspection, non-destructive tests on structural steel portion on the structural steel members and connections of Conveyor 11, 2A & 2B, 3A & 3B, 4A & 4B, 5A & 5B, 6A & 6B, 8A & 8B.
- Condition assessment of the aforementioned structures obtained through testing and measurements for vibrations at critical locations
- To suggest recommendations for protective coating/treatment required for identified deficit members based on the condition assessment with respect to corrosion.

Deliverables:

- NDT&E of selected elements and joints of the steel structures
- Evaluation of NTD results and recommendation of appropriate repair, if found necessary

Significant Achievements:

Condition assessment was carried out on selected steel structures within the NSPCL power plant, including the Turbine Generator (TG) building, crusher house, junction house, coal handling plant, acid and fuel storage tanks, wagon tippler roof-supporting structure, conveyor belt systems and their supporting structures, boiler structure, steel staircases, and electrostatic precipitator structures. The assessment involved detailed Non-Destructive Testing (NDT), including 1) Ultrasonic Thickness Measurement, 2) Dye penetration test (DPT) and 3) Magnetic particle test (MPT) wherever deemed necessary. In addition, visual inspections, alignment (axis) surveys, and vibration studies were conducted.

NDT studies on steel structure

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