

CONSULTANCY SOLUTIONS



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What we do?

DIAGNOSTIC ENGINEERING (DiEg) SOLUTION

- **Vibration Diagnosis – testing, measurement, analysis**
- **Shaft Power, Torque & Torsional Vibration Measurement** of Engine, Propeller Shafting system, Gear boxes etc
- **Infrared Thermography** of Electrical, Thermo-Mechanical System.
- **Ultrasonic testing and survey**
- **Electrical Machine Diagnostics Study**
- **Power Quality Analysis – transient and harmonic study.**
- **Assessment of Root Cause Failure Analysis**
- **Scheduled (periodical) machinery auditing**
- **Implementation of proactive maintenance**
- **Human Comfort Measurement**
 - ⊕ **Vibration assessment** as per ISO 6954,
 - ⊕ **(Hand Arm Vibration (HAV) / WBV – Whole Body Vibration)**
 - ⊕ **Noise monitoring** as per IMO Resolution A.468 (XII)
Comfort measurements are generally performed during ship building stage, sea trials or in service including whenever the ship undergoes repairs, modifications or refitting

CORRECTIVE SERVICES

- **In-situ Dynamic Balancing – rigid & flexible rotor**
- **Multi-plane Rigid & Flexible Rotor Dynamic Balancing***
- **Precision Optical Laser Alignment - – cold / hot state condition**
- **Bore / Flatness / Straightness measurement**
- **Geometry / Dimensional Survey**

VIBRATION DIAGNOSIS:

- **Vibration Measurement, Monitoring, Test, Trouble Shooting,**
Fault diagnosis of rotating / reciprocating machineries, Propulsion Shaft, structures, piping, building & ground
- **Identify Natural Frequency (resonance states)** of entire machinery or machinery components by **Impact (Bump Test) / Transient analysis during start-up / coast down etc**
- **ODS – Operational Deflection Shape / Modal Analysis**

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OTHER CONDITION MONITORING TECHNIQUES

- Infrared Thermography Study - *identification of thermal anomaly*
- Acoustic & Ultrasonic Study *friction, arching, turbulent phenomena*
- Electrical Signature Analysis - *identify stator & rotor, air gap related failures*
- Power Quality Analysis – *transient & harmonic study*
- Partial Discharge Analysis of High Voltage Electrical System

FAILURE AVOIDANCE / ANALYSIS

- Structural Design Modification – *shifting natural frequency*
- Fatigue & Life Estimation of the Critical Components
- Analytical Design Review on System Integrity
- Simulation of Faults and Dynamic Response Study
- Failure Cause & Impact Analysis
- Damage Assessment – Mechanical & Electrical Machineries

SIMULATION / PREDICTION STUDIES

- FMEA Studies – Operational / Maintenance issues
- Power Harmonics Simulation & Predictions
- Comfort study – *comply with HAV / WBV analysis*
- Noise & Vibration Predictions & Simulation
- Torsional Vibration & Power Studies, Predictions
- Flow Measurement / Surge Studies

APPLICATION SKILL TRAINING

- Implementation of PdM – Predictive Maintenance Strategies
- Interactive Multimedia Training Package
- Technological Training on PdM techniques such as Vibration Diagnosis, InfraRED Thermography, Ultrasonic Study, Electrical Signature Analysis, Electrical Machinery Fault Diagnosis etc

RESEARCH & DEVELOPMENTS

- Application Specific Research on Electrical / Mechanical Systems
- Design and develop – Test Rig for Engines / Motors, Pumps etc
- Wireless / Remote Condition Monitoring
- Alternate Energy Studies