

Topics for Papers – IPS 2019

THEME - Generating safe, reliable, eco-friendly flexible power : with state of the art technologies.

Proposed Topics for Discussion:

1. **Safety:** IOT Technologies for:
 - Power Plant Safety and Operation and Maintenance.
 - Wireless CCTV surveillance for monitoring safety violation.
2. **Reliability:**
 - Use of Phased Array Ultrasonic testing for weld joint inspection in the place of Radiography.
 - Vibration Monitoring of last Stage LP Turbine Blades to identify incipient faults.
 - Nitrogen capping of DM Water Storage Tanks.
 - Advance Pattern Recognition (APR).
 - Online Asset Health monitoring of EHV Transformers.
3. **Efficiency:**
Use of Drone for:
 - Thermal mapping of Boiler Furnace insulation
 - Fuel management and Fuel Transportation. Coal yard management.
 - IOT Technologies for: Monitoring Boiler Insulation Temperature and Steam leakage
4. **Environment / Ash / Water management:**
Use of low power Sprayed spectrum technology for remote monitoring in the area of ash dyke, remote offsite area like Raw water pump house etc.
5. **Flexible Generation:**
Very low load ($\approx <40\%$) with min 3% ramp up / down cyclic but reliable operation with fuzzy logic based controllers.

Other Topics suggested

- Reduction of water usage during power plant operations
- Maximizing Fly Ash Utilization and Ash Management
- Challenges in Flexible Operation & its Road Map
- Thermal mapping of Boiler Furnace insulation using drones.
- Use of Phased Array Ultrasonic testing for weld joint inspection in the place of Radiography.
- LP Blades(last stage) - Vibration monitoring
- IOT based monitoring Boiler Insulation Temperature and Steam leakage monitoring
- Nitrogen capping of DM Water Storage Tanks
- Adoption of IOT for various functionalities for Power Plant SAFETY and O&M
- Implementation of Advance Pattern Recognition(APR)

- Use of DRONES for other areas in Power Plant operations including Fuel management and Fuel Transportation
- Use advanced techniques for underwater works in CW/CT Systems and other related areas.
- Online Asset Health monitoring of Power Transformers
- Grid management and grid integration with renewable energy
- Operation Experience of Super critical plant
- Strategies for Efficient Operation
- Post Commissioning & Stabilization issues of new plants
- Water Conservation & Management
- Boiler Performance improvement and failure analysis
- Environment Challenges & Issues
- Water chemistry management
- Commercial & Operational Challenges
- Strategies for cost management
- Innovative tools and techniques and new O&M practices
- Coal blending strategies and technologies
- Optimization of fuel resources and combustion
- Advancements in Solar and Hydro Generation, Wind power
- Experience in Hydro Operation
- Operational issues of solar power generation
- O&M best practices
- Plant life Extension Technologies
- Gas sourcing and gas utilization
- Digitization of all critical activities of solar, thermal & wind Power operations
- Safe practices for effective O&M
- Innovative solution for energy storage techniques.
- Repair and maintenance of power plant civil and high rise Structures.
- Waste to energy management.
- Water quality improvement for better condenser and cooling tower performance
- Performance optimization, up-grading, efficiency & Reliability issues of coal and gas station in the different area/sub system.
- Any other topic relevant to theme and power industry today and in future
- Latest/modern T&P for quality, safe & quick maintenance
- SMART Maintenance through Digitalisation
- Software based RCA of BTL & Tripping