Engineering Service: Thermal Power Plant Operation and Maintenance

**Features**
Providing engineering services on the operation and maintenance of thermal power plant, with following features

- Viewpoints from the utility, as an operator of the facilities
- A long history of remarkable achievements in energy saving
- Experiences of procurement from various manufacturers

**Basic Concept or Summary**

TEPCO provides engineering services and technical assistance for operation and maintenance planning on overall thermal power station facilities, including advanced combined cycle plants, ultra supercritical power plants and coal-fired power plants.

A. Planning of O&M

1. O&M Management
   - Preparation and Review of Management Manual / System
     - Operation
     - Maintenance
     - Quality Control
     - Security and Safety
     - Environment

2. O&M Contract
   - Request for Proposals for O&M
     - Scope of Works
     - Guarantee items
   - Pre-qualification for Possible O&M Contractors
     - Evaluation of Contractors
   - Review of O&M Proposal
     - Overall Schedule
     - Suppliers
     - Management Manual / System
     - Quality, Environment and Safety Control
   - Drawing O&M Contract
     - Scope of O&M
     - O&M Cost

B. During Commercial Operation

1. Plant Operation Management
   - Operation, Security, Safety and Environment Manual / System
     - Operation and Performance Management
     - Operation Record Management
   - Operation, Security, Safety and Environment Plan
   - Operations Staff Training
   - Budget Management

2. Plant Maintenance Management
   - Maintenance, Security, Safety, Environment Manual / System
     - Maintenance Procedure
     - Consumables and Spare Parts Control
     - Maintenance Record Management
   - Daily / Long Term Maintenance Plan
   - Maintenance Staff Training
   - Diagnostic Analysis
   - Budget Management
3. Measures for plant abnormality
   - Verification and Advice
   - Plant Abnormality Report
   - Schedule Management for Inspection and Repair Work
   - Root Cause Analysis and Measures
   - Repair Work Proposal
   - Repair Work Management

**Effects or Remarks**
- Energy saving by improving the thermal efficiency
- Improving availability by quality management

One of the indices demonstrating TEPCO’s power supply efficiency is their 47.1% thermal efficiency at overall thermal power plants (2010).

**Installation in Practice or Schedule**

**Domestic**
- Operation and maintenance of thermal power stations within TEPCO service area (approx. 38,700MW at 25 locations; as of March 2011)

**Overseas**
- Technical Assistance on Ultra Super Critical Thermal Power Facilities, P. R. China (2005)
- HRSG Installation Study for Existing Gas Turbine Power Plants, Indonesia (2005)
- “Team Energy Project,” Pagbilao Coal-fired (735MW) and Sual Coal-fired (1,218MW) power plants in Philippines
- “Chang Bin/Fond Der Project” in Taiwan
- “Loy Yang A Project,” Coal-fired power plant in Australia

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