

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

Operation 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)
 - ◆ Technical Assistance for Repowering of Muala Kalang Thermal Power Plant, Indonesia (2004)
 - ◆ Study for Fuel Gas Desulfurization for Turceni Power Station, Romania (2003)
 - ◆ "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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