

別添 2 質問表及び回答状況

PHILIPPINES
MALAYA POWER PLANT
RELIABILITY IMPROVEMENT PROJECT

QUESTIONNAIRE
(DATA / INFORMATION REQUIRED)

入手状況

1. ORGANIZATION

- (1) Central Government organization chart
- (2) Position of NAPOCOR in relation with Government organization
- (3) Organization of NAPOCOR ----- 入手
 - a. Head office
 - b. Local office
 - c. List of employees
- (4) NAPOCOR representatives in charge of the Project on
 - a. Engineering
 - b. Administration
- (5) Organization of the Other Offices ----- 入手
 - a) MMRC
 - b) SLRC
 - c) Malaya TPP
 - d) ~~GMD~~ MSD/MEC

2. SOCIO-ECONOMIC CONDITIONS

- (1) Socio-economic information and data which will be remarkable for the project implementation. (The latest general information and availability of detailed data, Nationwide and the Study area)
 - a) GNP/ GDP
 - b) Population and Household
 - c) Administrative Division
 - d) Trade
 - e) Industry
 - f) Exchange rate
 - g) Consumers prices of major items
 - h) Others
- (2) Information for Security and Health in the Study Area
 - a) Security
 - b) Sanitation
 - c) Diseases and Hospital

3 DEVELOPMENT PLANS

- (1) National Development plan (The latest general information and availability of detailed data)
- (2) Regional Development plan (The latest general information and availability of detailed data)
- (3) Power Development Plan (The latest general information and availability of detailed data) ----- 入手

4. ENVIRONMENT

- (1) Environmental Act/ Regulations related to the thermal power and transmission of electric energy. --- 入手
- (2) Guidelines on environmental impact assessment (EIA) to be referred for the project. --- 入手

5. POWER DEVELOPMENT PROGRAM

- (1) Summary of Power development program ----- 入手
- (2) Summary of Installed capacity ----- 入手
- (3) Summary of capacity additions (MW) ----- 入手
- (4) Energy sale and demand forecast summary ----- 入手
- (5) System energy generation mix GWH (average) ----- 入手

6. MMRC

- (1) MMR Technical and Operational Data of Power Plants and Substations (The latest 2 years) ----- 入手
- (2) Luzon Grid Power System Development Map ----- 入手

7. MALAYA TPP (M₁ , M₂)

- (1) Comprehensive Overhaul Reports (the latest)
- (2) Blown-out Records (the latest 2 years)
- (3) Copy of Operation Foreman's Daily Log Book (the latest 3 months) ----- 入手
- (4) Overhaul Tentative Schedule for 1994 ----- 入手
- (5) M₂ Boiler Tube Failure Reports ----- 入手
- (6) Maintenance Work Order (the latest 3 months)
- (7) Monthly Generation Summary (the latest 3 months)
- (8) M₁ , M₂ Outage Records (Scheduled, Forced, the latest 3 years) ----- 入手
- (9) List of Major facilities and specifications of M1 and M2 ----- 入手
- (10) Plan/ Layout of Malaya TPP ----- 入手

8. REGULATION AND ADMINISTRATION

- (1) Total number of employees and the number segregated into sections
- (2) Possessed qualifications (Official and NPC's) ----- 入手
- (3) training program and actual data (the last two years)
- (4) Managing procedures for drawings and data
- (5) Managing and storage methods for spare parts
- (6) System concerning review/ discussion and advice/ instruction of technical problems
- (7) Administration system of the plant efficiency ----- 入手
- (8) Planning and budgeting methods for periodical and preventive maintenance
- (9) Managed maintenance program
- (10) Organization and procedures of material procurement
- (11) Corrective maintenance work order chart
- (12) Safety training
- (13) Authorization and responsibilities of the plant superintendent
- (14) Procurement concept concerning power plant equipment/ parts for maintenance/ overhaul
- (15) Methods of subcontracting workers for periodic and other maintenance
- (16) Hiring and education/ training for recruits
- (17) Maintenance Engineering Center ----- 入手
 - a. Annual report (the latest issue)
 - b. Functional chart
 - c. Table of organization ----- 入手
- (18) Financial data for MTPP
 - a. Fuel costs and steam costs
 - b. Operation and maintenance costs ----- 入手
 - c. NPC power rate

9. ELECTRIC POWER SITUATION IN LUZON GRID

- (1) Annual report of electrical statistics
- (2) Power consumption of each category (past records and forecast)
- (3) Demand and supply balance)
- (4) NAPOCOR's electricity sales balance
- (5) Latest power development program with relevant supporting data
- (6) Typical daily load curves (present records and forecast)
- (7) Electrification ratio (past records and forecast)
- (8) Power loss of voltage in terms of percentage
- (9) Major power supply facilities and location maps
 - a. Hydropower
 - b. Thermal
 - c. Gas turbine
 - d. Transmission line network
- (10) Stability analysis

10. TRANSMISSION AND SUBSTATIONS (LUZON GRID)

- (1) Luzon Grid power system diagram
- (2) Transmission development program
- (3) Luzon Grid transmission line data (100MVA and 230MVA base)
- (4) Transmission line length and Substation capacity
- (5) 230KV Substation transformer data
- (6) 230KV Substation fault levels and technical data of circuit breakers
- (7) 230KV Transmission live fault records

11. PRESENT SITUATION OF OPERATION AND MAINTENANCE(1)

- (1) Present actual capacity and the cause of limiting capacity ----- 入手
- (2) Present actual thermal efficiency and design heat balance ----- 入手
- (3) Water quality standard, limiting value, and actual results ----- 入手
- (4) Criteria (how to decide the application) of the chemical cleaning of boiler and air preheater, and its actual data.
- (5) Measuring record of erosion, corrosion, scale or deposit of superheater and reheater, and how to decide the need of measuring.
- (6) The record of troubles of superheater, reheater, and water wall and the data of trying -- 入手 to find the cause
- (7) The examination data of sulfur and vanadium of fuel oil (S, V₂O₅) ----- 入手
- (8) Data of scale deposits of turbine.
- (9) Problem and basic countermeasure (1993)
 - a) Turbine and turbine auxiliary equipment
 - b) Boiler and boiler auxiliary equipment
 - c) Electrical equipment
 - d) Instrument and control
 - e) Miscellaneous and chemical equipment

12. PRESENT SITUATION OF OPERATION AND MAINTENANCE(2)

- (1) Operation and maintenance procedures.
- (2) Daily patrol and check methods.
- (3) Periodic maintenance procedures and organizational structure.
- (4) Organization of the power plant:
 - Man power and skill of personal for operation/ maintenance including technical/ engineering function for preparation of technical specific for procurement.
- (5) Establishment of procurement concept for proprietary items of equipment/ parts for maintenance/ overhaul.
- (6) System for authorization and responsibility.
- (7) Operations and maintenance management system at head office of Regional Center (MMRC).

13. INFORMATION FOR ECONOMIC EVALUATION

- (1) Population and growth rates (past, present and future)
 - a) Whole country
 - b) Power grid distribution area
- (2) Electricity tariff and relevant regulations
- (3) Annual operation and maintenance costs per kwh
 - a) Hydropower plant
 - b) Fuel fired thermal power plant
 - c) Coal fired thermal power plant
 - d) Gas turbine power plant
 - e) Diesel power plant
 - f) Geothermal power plant
- (4) Unit construction costs of power supply facilities in recent years (p/kw and p/kwh)
 - a) Hydropower plant
 - b) Fuel fired thermal plant
 - c) Coal fired thermal power plant
 - d) Gas turbine power plant
 - e) Diesel power plant
 - f) Geothermal power plant
- (5) Price escalation rates in recent years and future forecast
- (6) Statistic yearbooks of economy, industry, agriculture, trade etc.

14. UNIT COSTS

- (1) Labour Cost
 - a) Daily working hours and wages
 - b) National holidays and religious holidays etc.
 - c) Premium payment for holidays and overtime work
- (2) Wage Payment
 - a) Secretary
 - b) Clerk
 - c) Draft man
 - d) Typist
- (3) Service Expenses
 - a) Telephone
 - b) Facsimile
 - c) Copies
 - d) Telegram
- (4) Rental Charge
 - a) Sedan with Driver
 - b) Micro bus with Driver
 - c) Jeep with Driver
 - d) Gasolines

1 5 INFORMATION OF INLAND TRANSPORTATION AND COMMUNICATION

- (1) Available port nearest to the site
 - a) Location
 - b) Port facilities
 - c) Seasonal restriction for unloading
- (2) Inland Transportation from port to the site
 - a) Limitation of carrying capacity by weight and dimension
 - b) Recommendable contractor for inland transportation
 - c) Market price of carriage
- (3) Available communication system from Japan to head office and site office
 - a) Telephone, Facsimile, Telex and others
- (4) Regional Map/ Road Map of the Study Area

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