



REFERENCES

- Angus, B. R., Gundersen, N. A., Cullinane, T. P. (2000). **Planning, Performing and Controlling Projects**. 2nd ed. USA: Prantice-Hall.
- Buay, S. S., Ann T. T. and Tiong, O. C. (1997). **Project Management: how to control plan and management project**. Singapore: Simon & Schuster.
- Burke, R. (1999). **Project Management: planning and control techniques**. 3rd ed. USA: John Willey & Sons.
- Callahan, M. T., Quackenbush, D. G. and Rowings, J. E. (1992). **Construction Project Scheduling**. USA: McGraw-Hill.
- Chelaka, M., Abeyasinghe L., Greenwood, D. J. and Johansen, D.E. (2001), An efficient method for scheduling construction projects with resource constraints. **International Journal of Project Management** 19.
- Courter, G. and Marquis, A. (2000). **Mastering Microsoft Project 2000**. USA: SYBEX.
- Dey, P.K. and Tabucanon, M. T. (1996). Petroleum pipeline construction planning: a **conceptual framework**, **International Journal of Project Management**. 14, 4.
- Ertay, T. and Ruan, D. (2005). Data envelopment analysis based decision model for optimal operator allocation in CMS. **European journal of operation research** 164.
- Golenko-Ginzburg, D. and Laslo, Z. (2003). Resource constrained scheduling simulation model for alternative stochastic network projects. **Mathematics and Computers in Simulation** 63.
- Gomez-Mejia, L.R., Balkin, D.B. and Cardy, R.L. (2001). **Managing Human Resources**. 3rd ed. USA: Prentice-Hall.

- Gray, C. and Larson, E. (2002). **Project management: the complete guide for every manager**. USA: McGraw-Hill.
- Hall, E. with Johnson, J. (2003). **Integrated Project Management**. USA: Practice Hall.
- Hendrickson, C. (June 1998). **Project Management for Construction [online]**. Prentice Hall and Tung Au. Available from: http://www.ce.cmu.edu/~cth/pmbook/10_Fundamental_Scheduling_Procedures.html [30 June 2002].
- Hendriks, MHA., Voeten, B. and Kroep, L. (1999). Human resource allocation in a multi project R&D environment, **International Journal of Project Management**. 17, 3.
- Howes, N. R. (2001). **Modern Project Management: successfully integrating project management knowledge areas and processes**. USA: AMACOM.
- Hura, D, Mabertb, V.A. and Bretthauerc, K.M. (2004). Real-time schedule adjustment decisions: a case study. **Omega** 32.
- Kerzner, H. (2001). **Project Management: a systems approach to planning, scheduling, and controlling**. 7th ed. USA: John Willey & Sons.
- Levine, Harvey A. (2002). **Practical Project Management: Tips, Tactics, and tools**. USA: John Willey & Sons.
- Mawong, C. (2000). **Development of Human Resource Planning for Control Instrument Project Department**. Master Thesis. The Regional Centre for Manufacturing System Engineering Graduate School Chulalongkorn University, Thailand.
- Meredith, J. R. and Mantel, Jr., S. J. (2003). **Project Management: a managerial approach**. 4th ed. USA: John Willey & Sons.
- Steyn, H. (2002). Project management applications of the theory of constraints beyond critical chain scheduling. **International Journal of Project Management**.

APPENDICES

Appendix A

PROJECT SCHEDULE
MECHANICAL PROJECT DEPARTMENT

Figure A.1: Tentative Time Schedule of Rachaburi Thermal Power Plant

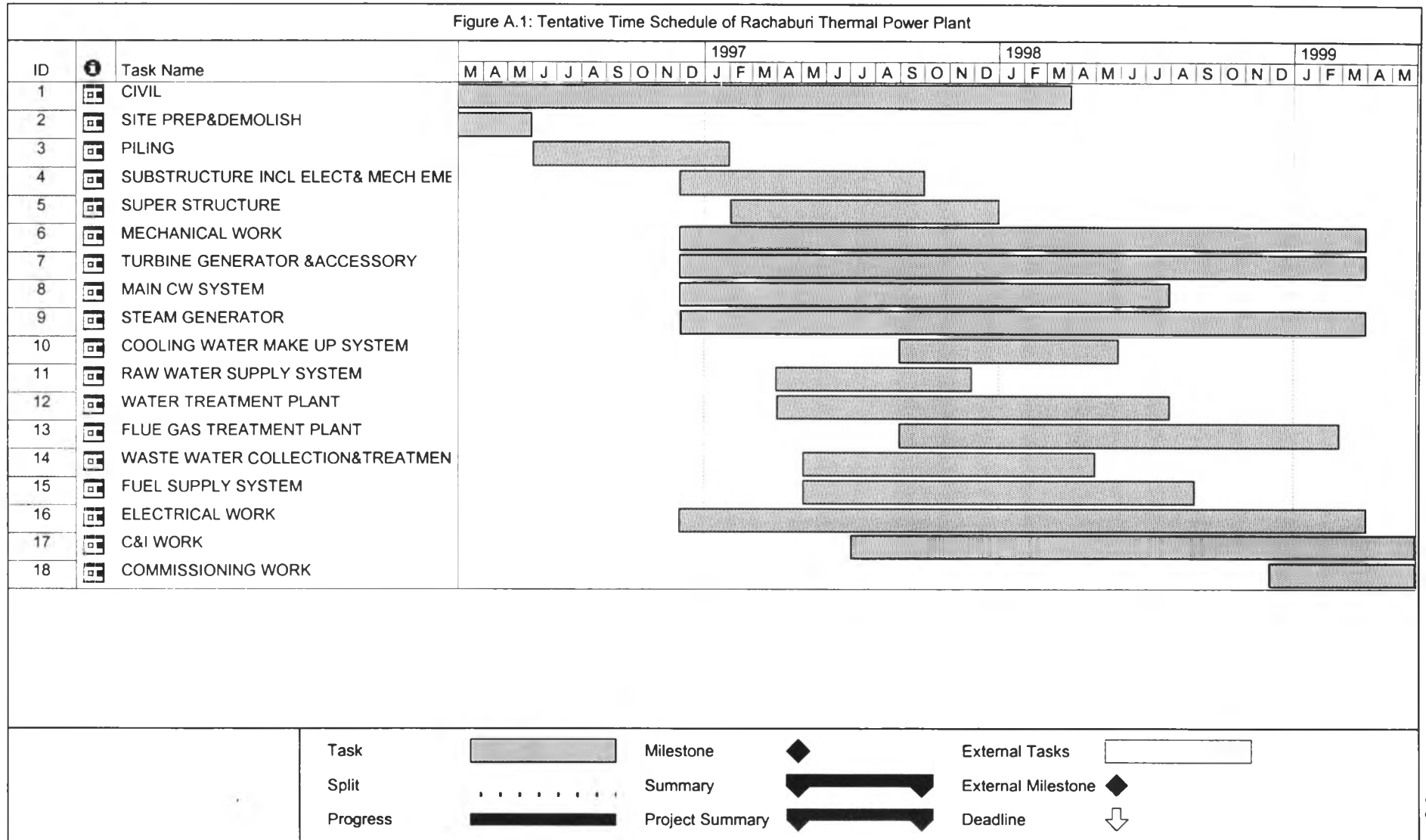
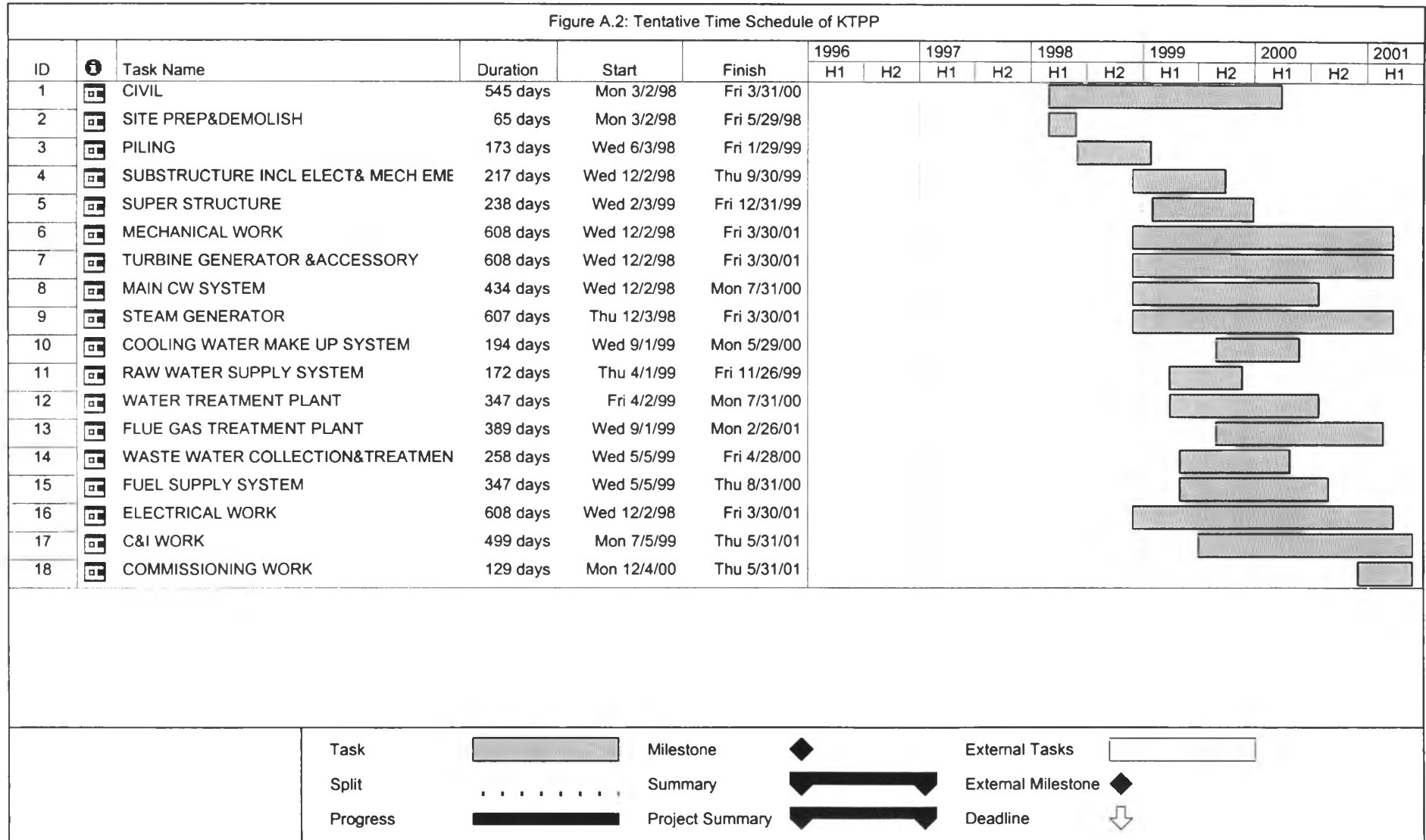


Figure A.2: Tentative Time Schedule of K TPP



Appendix B

SCOPE OF WORK
MECHANICAL PROJECT DEPARTMENT

Scope of work of MD

All MD's work of the projects is assembled and erected by contractors under MD's supervision. It means that MD's personnel work as an inspector. The work includes complete assembly and installation from unloading to placing and successful operation. The inspection work of the inspectors of Steam Generator (SGPS), Mechanical Machine (MMPS) and Piping (PPS) Project Sections are the same but the inspection work of Mechanical Equipment Inspection Section (MEQI) is different from the others. Lists of the main works of MD are illustrated in Appendix B. Inspection steps under responsibility of the sections are presented as follows.

Inspection Steps

Typical inspection steps of the assembly and installation work of SGPS, MMPS and PPS are:

1. Review engineering data and drawings, calculations, layouts, and other requirements;
2. Assure the perfect conditions of equipment and structure, and loading from suppliers;
3. Check sub-structure assembly and installation, e.g., embedded part, anchor bolt, pipe sleeve, base plate and/or sole plate;
4. Assure the perfect conditions of structure, support or equipment assembly and installation;
5. Check the equipment and accessory for individual tests, and
6. Perform System Test and Commissioning of the equipment and accessories.

Moreover, typical inspection works of the MEQI consists of four types: Visual Inspection, Radiographic Testing, Liquid Penetrant Testing and Magnetic Testing. The inspection works are for:

- NDT for steam generator
- NDT for steam turbine

- NDT for water treatment system
- NDT for cooling tower and C.W. pipe

Lists of the mechanical equipment

The main equipment's lists under responsibility for each section of MD are as follows.

The main equipments of SGPS are:

- Structural Steel, Boiler Support
- Elevator
- Secondary air heater
- Duct & damper
- Auxiliary boiler
- Steam Generator include non-pressure parts
- Steam drum
- Boiler combustion air equipment
- Soot blower system
- Fuel oil & gas system
- Burners & Accessories
- Igniter & Accessories
- Thermal insulation
- Hydrostatic Testing
- Chemical Cleaning

The main equipments of MMPS are:

- Structural steel turbine building
- Elevator
- Turbine room crane
- Dearator & storage tank
- Surface condenser
- Condenser air extraction system

- Condensate pump
- LP. Heaters
- Steam turbine equipments
- Turbine casing
- HP. & IP. Turbine & LP. Rotor
- Turbine lube oil system and control oil system
- Oil flushing
- Steam turbine bypass system
- Generator & Accessories
- Generator cooling and purging system
- Boiler feed pump
- HP. Feed water heaters
- HVAC Equipment
- Fuel oil pumps
- Igniter oil pumps
- Induce draft system
- Force draft system
- Gas recirculation system
- Fire protection system
- Control air and station air system
- Miscellaneous building
- Service water system
- Fuel oil forwarding system
- Emergency diesel generator
- Fire fighting & service water pumps
- Raw water pump house (with stop log and bar screen)
- Cooling Tower
- Main circulating water pump
- Close cycle cooling water (CCCW.) pump
- Water treatment plant
- Service water treatment plant (mechanical equipment)

- Cycle make up treatment plant (mechanical equipment)
- Fire protection system (pump)
- Waste water treatment plant equipment
- Sanitary waste treatment system (mechanical equipment)

The main equipments of PPS are:

- Steam piping & valve
- Steam piping support
- Fuel oil piping
- Flue gas system
- Soot blower piping
- Ignitor oil piping
- Fire protection system (piping)
- Service water system (piping)
- Condensate piping
- Feed heating piping
- Generator cooling piping system
- Hydrostatic Testing
- Cooling Tower
- Close cycle cooling water system (CCCW.)
- CW. Pipe install
- Service water treatment plant (piping)
- Cycle make up treatment plant (piping)
- Fire protection system (piping)
- Sanitary waste treatment system (piping)
- Circulating water make up system
- Fuel Oil Transportation System
- Outdoor utility pipe work
- Ignition oil forwarding system

The main equipments of MEQI are:

- Storage tank and accessories
- Fuel oil tank and accessories
- Demin. Water supply tank and accessories
- Condensate storage tank and accessories
- Site demin. Water storage tank and accessories
- Fuel oil day tank and accessories
- Ignitor oil day tank and accessories

Appendix C

DAILY REPORT

MONTHLY PROGRESS REPORT

MECHANICAL PROJECT DEPARTMENT

BIOGRAPHY

Eakarat Samintarapanya was born on 11 November 1968 in Chiangrai, Thailand. He graduated from Chiangmai University with a Bachelor degree in Mechanical Engineering since 1992. After graduated, he has worked at Mechanical Department of Electricity Generating Authority of Thailand (EGAT) since 1992. Now, he is a senior mechanical engineer.

He studied as a part-time student for Master of Engineering in Engineering Management and Master of Science in Engineering Business Management at the Regional Centre for Manufacturing Systems Engineering, Chulalongkorn University and graduated in the 2004 academic year.

