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APPENDICES

Appendix A

PROJECT SCHEDULE MECHANICAL PROJECT DEPARTMENT



ID Image: Task for the second secon	Name PREP&DEMOLISH NG STRUCTURE INCL ELECT& MECH E ER STRUCTURE HANICAL WORK BINE GENERATOR &ACCESSORY N CW SYSTEM AM GENERATOR VING WATER MAKE UP SYSTEM V WATER SUPPLY SYSTEM ER TREATMENT PLANT	Duration 545 days 65 days 173 days 217 days 238 days 608 days 608 days 434 days 607 days 194 days	Start Mon 3/2/98 Mon 3/2/98 Wed 6/3/98 Wed 12/2/98 Wed 12/2/98 Wed 12/2/98 Wed 12/2/98 Wed 12/2/98 Thu 12/3/98	Finish Fri 3/31/00 Fri 5/29/98 Fri 1/29/99 Thu 9/30/99 Fri 12/31/99 Fri 3/30/01 Fri 3/30/01 Mon 7/31/00 Fri 3/30/01	1996 H1 H2	1997 2 H1	H2	1998 H1	1999 H2 H1	2 H2	000 H1 H2	2001 H1
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12 WATE	ER TREATMENT PLANT	172 days	Thu 4/1/99	Fri 11/26/99								
42 5115		347 days	Fri 4/2/99	Mon 7/31/00						Udhi	0/2/01/101	
13 DE FLUE	E GAS TREATMENT PLANT	389 days	Wed 9/1/99	Mon 2/26/01					L	AL	UNIO COMPANY	
14 🖬 WAS1	TE WATER COLLECTION&TREATM	IEN 258 days	Wed 5/5/99	Fri 4/28/00					Г			
15 🖬 FUEL	SUPPLY SYSTEM	347 days	Wed 5/5/99	Thu 8/31/00					Ĭ			
16 🖬 ELEC	CTRICAL WORK	608 days	Wed 12/2/98	Fri 3/30/01					Willow and			
17 🖬 C&I W	WORK	499 days	Mon 7/5/99	Thu 5/31/01						1		
18 🖬 COMM	MISSIONING WORK	129 days	Mon 12/4/00	Thu 5/31/01								

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
- Condendate 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

Table C.1: Daily Report

Dated: [dd/mm/yyyy]

Mechanical Project Department: [name] Project Section

Job Activity	Inspe	ector	Workin	ng Time	Over	Remark		
	Position	unit	From	То	From	То	1	
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Issued by:	[name]] (F	oreman)					
Approved	by: <u>[name]</u>	[(E	ingineer)					
Received	by: <u>[name]</u>	(H	lead of [na	<u>me]</u> Projec	t Section)			

Note: This report should be submitted to Chief of Mechanical Project Department at the end of each month.

Table C.2: Monthly Progress Report

Report of [mm/yyyy]

Job activity	tivity Previous month						This month							Next month					
	Wo	rk (%)	in	specto)r	Inspector available	Wo	rk (%)	Ir	spect	or	Inspector available	Wo	rk (%)	Ins	specto	r	Inspector available	
	Plan	Actual	Position	1	Unit	(unit)	Plan	Actual	Position		Unit	(unit)	Plan	Actual	Position	l	Jnit	(unit)	1
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Remark: A=Actual, P= Plan, IA= Inspector available, OT= Over time

Issued by: [name], Head of Mechanical Project Section of [name] Project Department

Dated:[dd/mm/vvvv]

Note: This report should be submitted to Chief of Mechanical Department at the beginning of each month.

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.

