PT. ALBANY ENGINEERING SERVICES

PT. ALBANY ENGINEERING SERVICES
JL. RAYA PANYAWUNGAN KM.0,8
TELP. : (022) 7796455 (HUNTING), 7796466, FAX. : (022) 7796678, 2013734
WEBSITE : www.albanybandung.com

PT. ALBANY ENGINEERING SEVICES

Found : 29 November 2008, Formerly named PT. Albany Yasa Utama, Found : 18 February 1993
Land : 4,000 sqm, Shop Floor and Offices : 3,000 sqm

PT. ALBANY ENGINEERING SERVICES

Serving the Energy Industry

PT. ALBANY ENGINEERING SERVICES

Oil & Gas

ISO 9001 : 2008

OHSAS 18001 : 2007

Power Generation

Energy Management Technologies

Workshop :
Jl. Raya Panyawungan KM. 0,8
Cileunyi - Bandung, Indonesia 40393
Commercial Office :
Jl. Cisitu No. 45B
Dago - Bandung, Indonesia 40135
Phone : 62.22.7796455, 62.22.7796466
Fax : 62.22.7796678, 62.22.87825646
website : www.albanybandung.com

PT. ALBANY is one of the bigest Market share in Repairs Gas Turbine component in INDONESIA

PT. ALBANY ENGINEERING SERVICES

Albany
Engineering Services

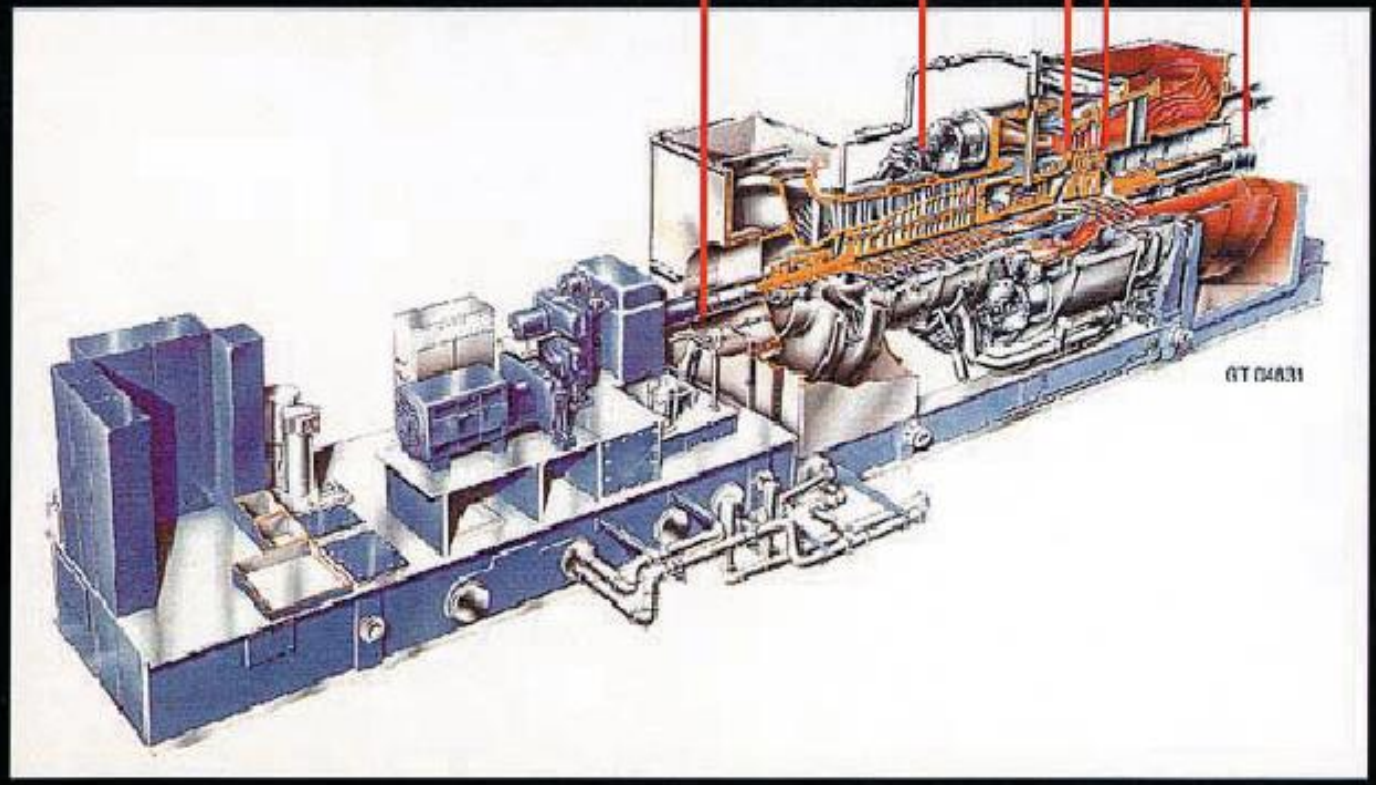
BUSINESS / SERVICES OVERVIEW

PT. ALBANY ENGINEERING SERVICES

is the Market Leader in Repairs of GE Gas Turbine in INDONESIA

Shutdown Inspections

- Combustion
- Hot-Gas-Path
- Major

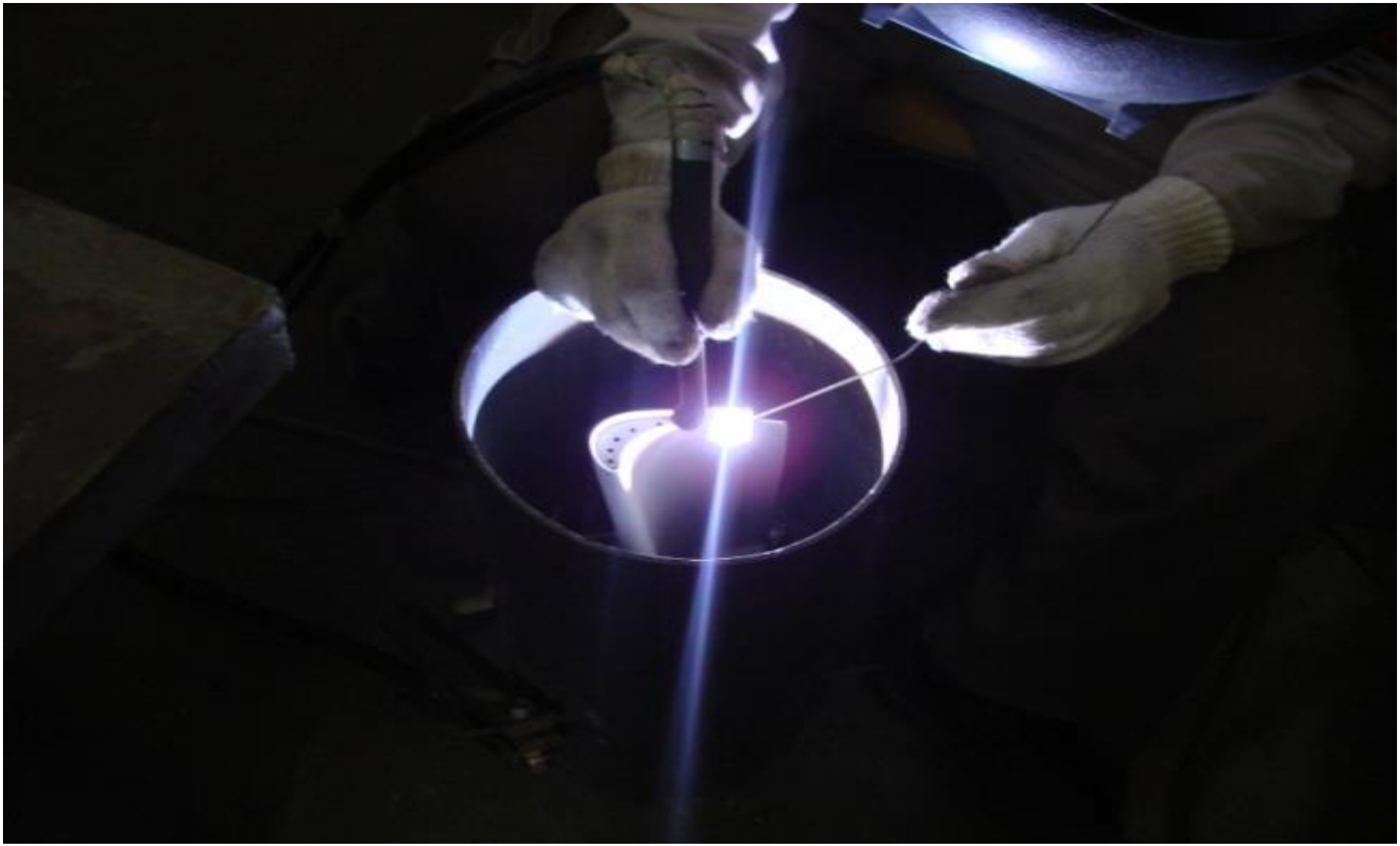


heavy-duty gas turbine – shutdown inspections

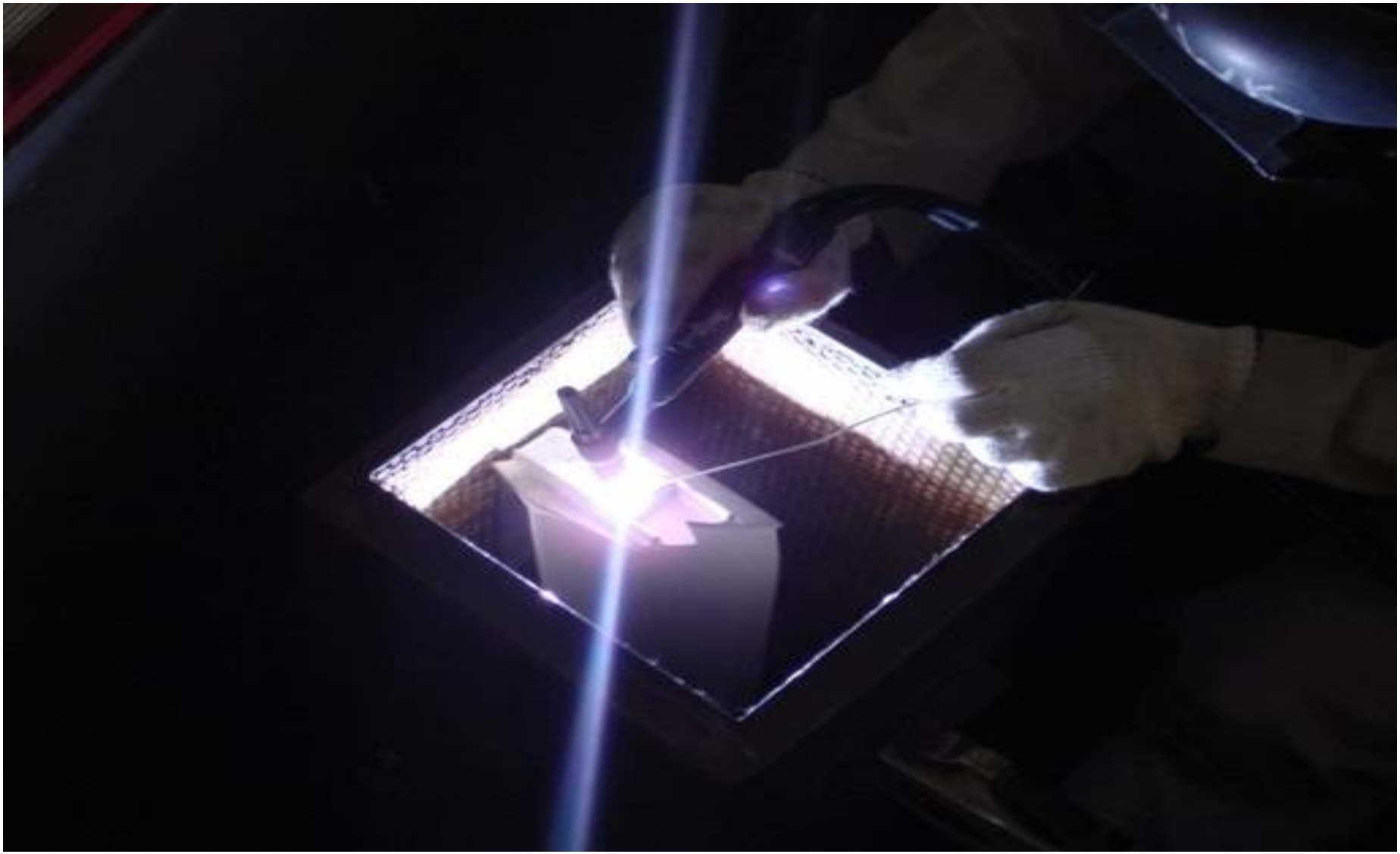
VERTICAL TURNING LATHE
TO MACHINE NOZZLE DIAPHRAGM, SHROUD BLOCK , ETC

CNC MACHINING MACHINE

One of PT. ALBANY's Advance Repair Technology.



One of PT. ALBANY's Advance Repair Technology.



- Welding Second stage Bucket MS 9001E using WRAP process

PT. ALBANY ENGINEERING SERVICES

HVOF COATING PROCESS ON FISRT STAGE BUCKET MS 9001E

PT. ALBANY ENGINEERING SERVICES

TBC COATING, PLASMA SPRAY SYSTEM

PT. ALBANY ENGINEERING SERVICES

COATING SPRAY ROBOTIC SYSTEM

Repair on first Stage bucket Airfoil of MS 9001E

MAJOR REPAIR PROCESS (CONT'D)

BUCKET AND BLADES

- Cleaning
- Stripping
- Tip build ups
- Angel wing restoration
- Moment weighs
- NDT
- Coatings
- Stellite inlay

Ultrasonic Test
Insures minimum wall thickness requirements are met

REPAIR PROCESS (BLENDING)

BUCKET AFTER REPAIR

ROTOR BLADE / BUCKET REPAIR

Blade / bucket ready are ready to be ship to Customer

FUEL NOZZLE TEST BENCH

GO- no GO inspection process

Drop Check on the Vertical of Floating seal Slot Areas

MAJOR EQUIPMENT & MAJOR REPAIR PROCESS

NOZZLE REPAIR

- Coupon manufacture
- Trailing edge coupon restoration
- EDM machining
- Downstream Deflection correction
- Fixture repaired components
- Hydrogen bright annealing
- Solution age run

Nozzle segment before Repair

Nozzle segment after Repair

STATOR BLADE V.94.2
Repair Work scope

1. Perform receiving inspection
2. Incoming dimensional inspect
3. Dissasemble nozzle segment
4. Remove core plugs
5. Blast clean
6. Pre-weld heat treatment
7. NDT Inspect
8. Weld repair
9. Blend Repair
10. Assembly for area/drop/gap check
11. Align transition piece grooves

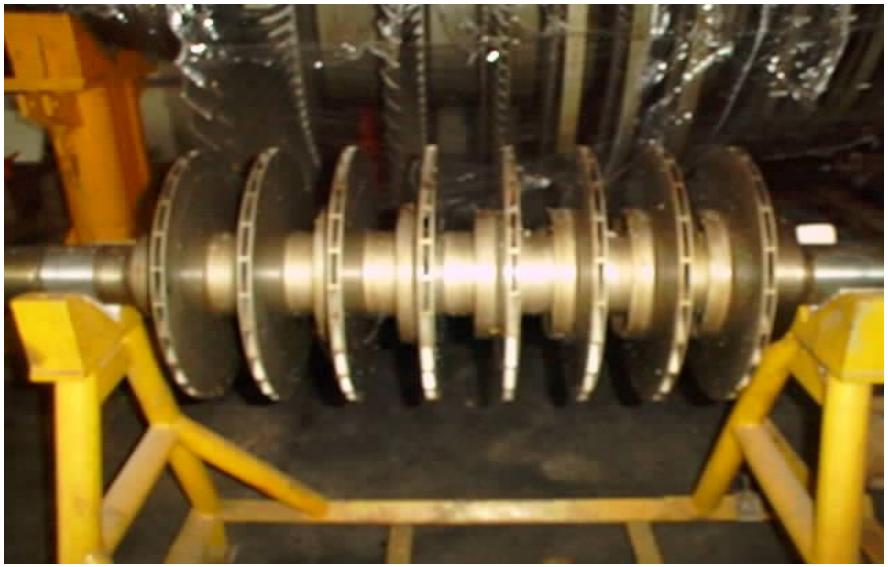
Drop Check & Dimensional Inspection on Third Stage Nozzle MS 6001B

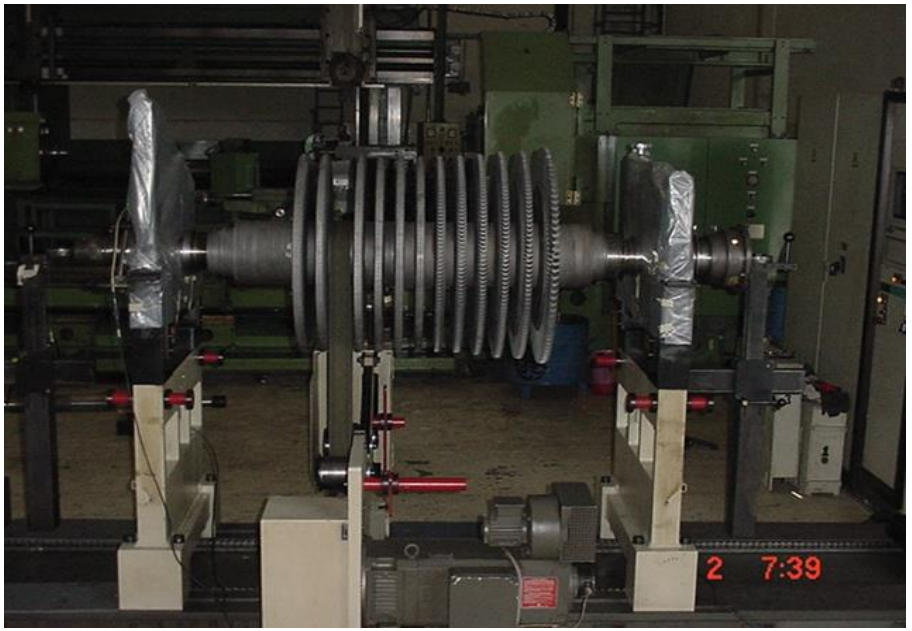
Repair of Various Components

STEAM TURBINE PART MANUFACTURE

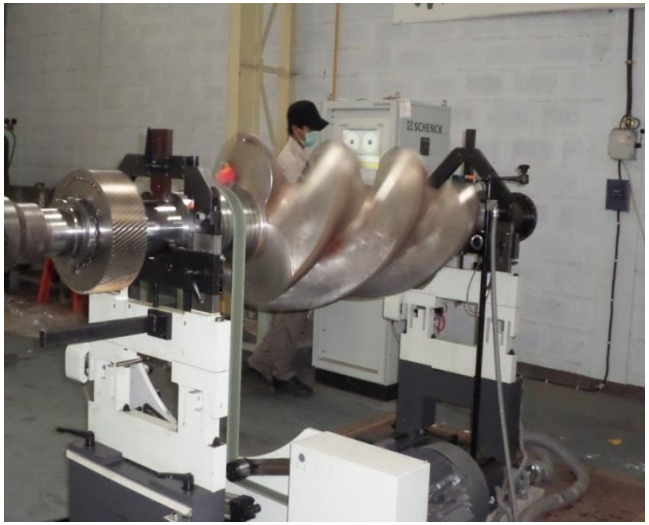
STEAM TURBINE PART MANUFACTURE

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR



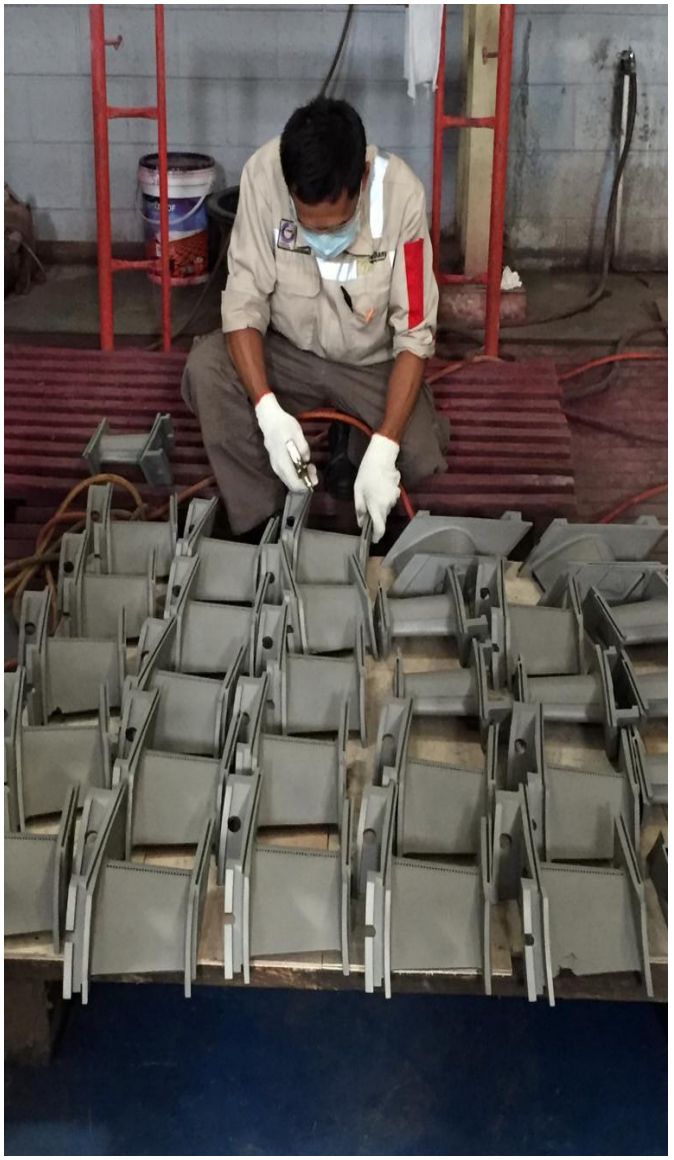


ROTOR REPAIR



DAMAGE CRITERIA / REPAIR CATEGORY

STEAM TURBINE PART MANUFACTURE



DAMAGE CRITERIA / REPAIR CATEGORY

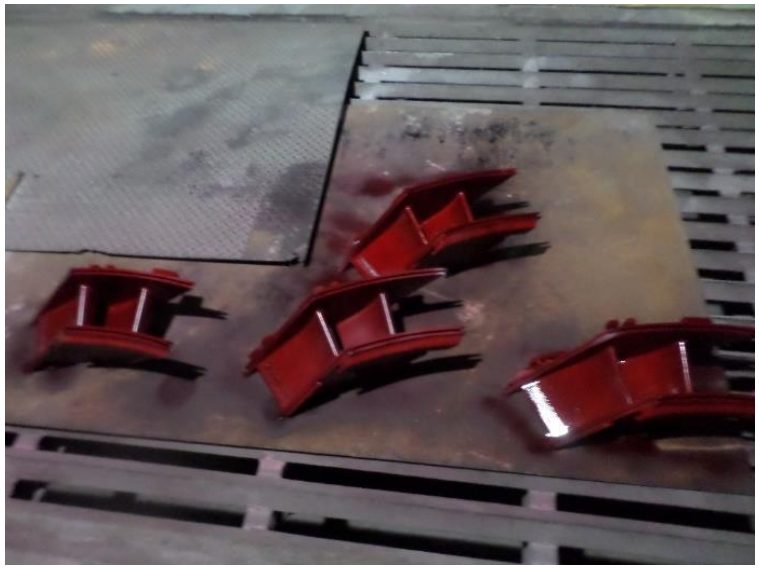
ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

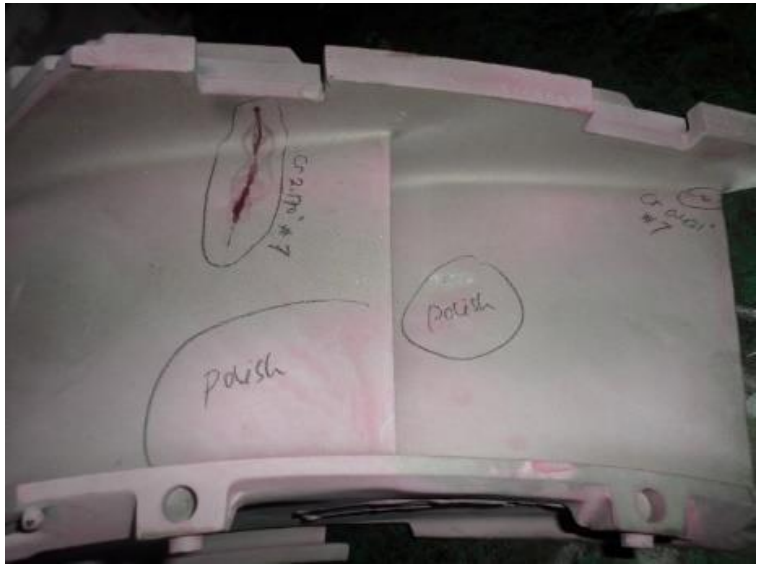
ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Disassembly Nozzle Segment from Retaining Ring 1st stage Nozzle GE Gas Turbine MS 5002

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR



Incoming NDT by Red Dye Penetrant and Mapping finding



ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Welding and Blending Process

Final NDT Process

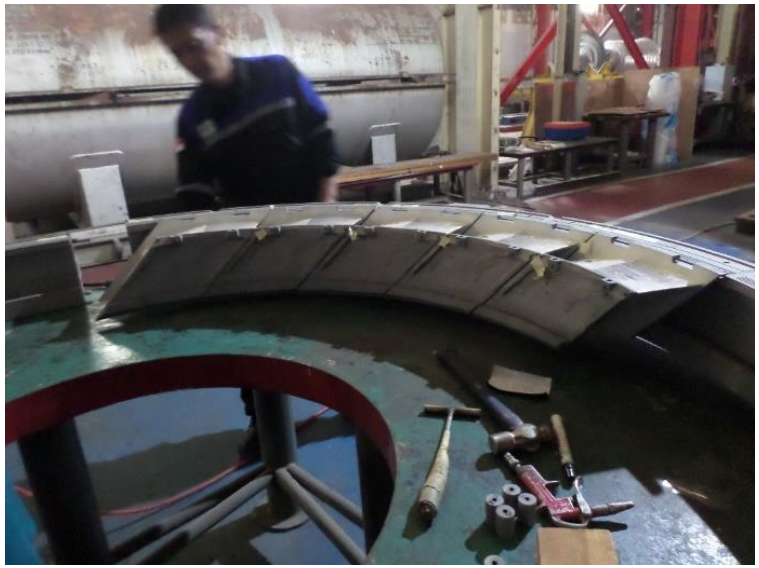
ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Repair Process done and Ready to next Process

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

After TBC process done and ready to Re-Assembly to Ret.Ring

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

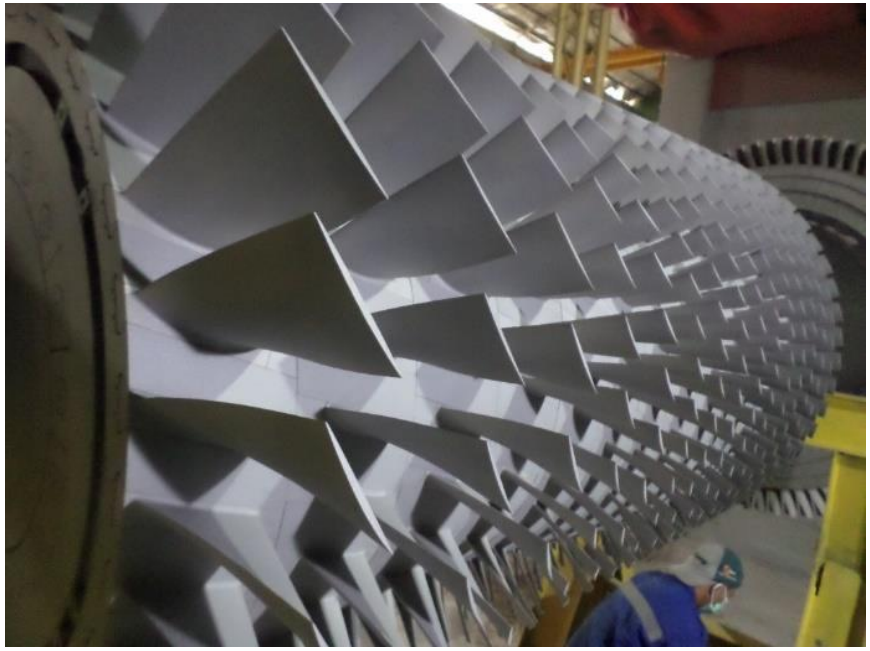


Re-Assembly Nozzle Segment to Ret.Ring process

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Repair Completed

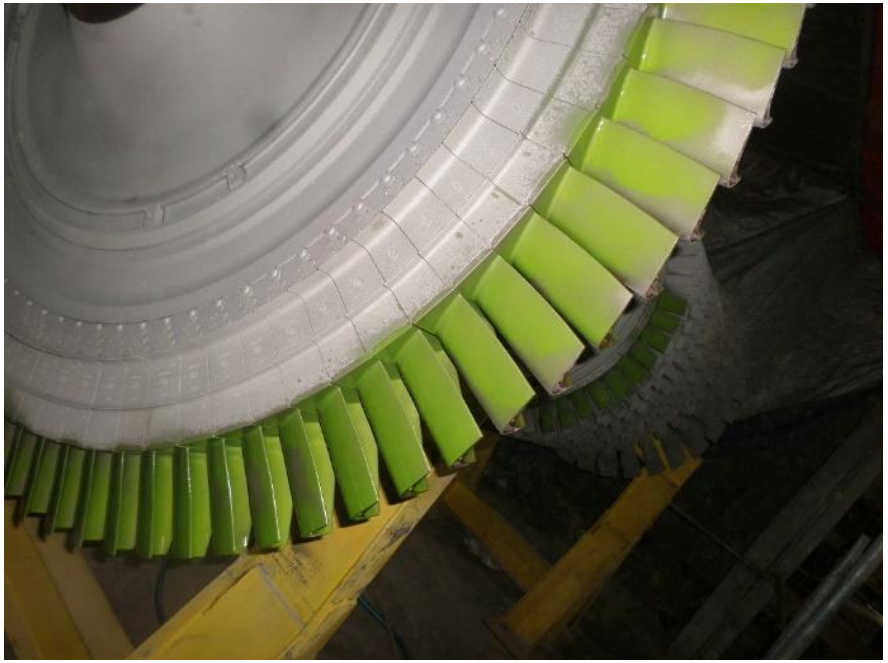
ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR



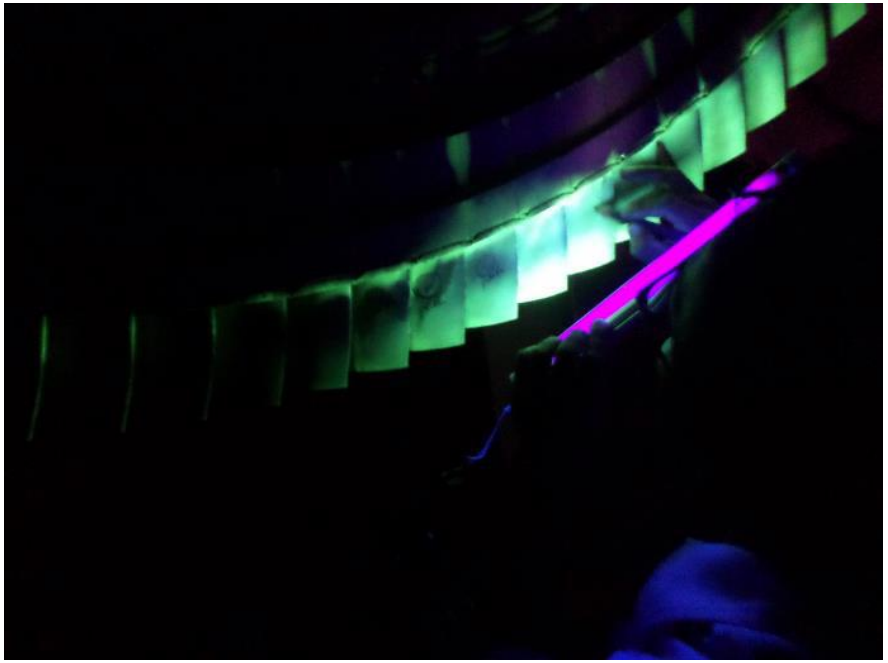
HP Rotor GTG GE MS 5002
after Aluminum Oxide Blast Clean

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

NDT Process by Fluorescent Penetrant on Turbine and Compressor Blade



ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR



Visual Inspection and mapping finding if any on Turbine and Compressor Blade

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Polishing on Compressor Blade

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

HVOF Coating process on Turbine Blade

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Dynamic Balancing Process

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Repair Completed

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

LP Rotor GTG GE MS 5002
after Aluminum Oxide Blast Clean

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

NDT Process by Fluorescent Penetrant on Turbine Blade

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Visual Inspection and mapping finding if any on Turbine and Compressor Blade

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

HVOF Coating process on Turbine Blade

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

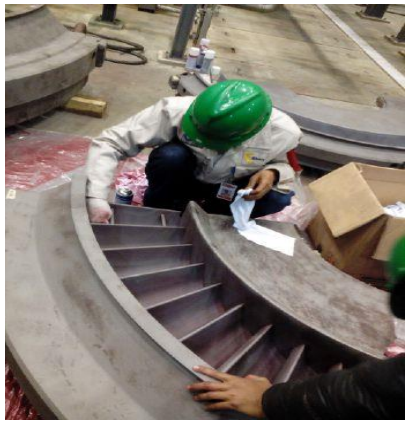
Dynamic Balancing Process

ROTOR STEAM TURBINE, COMPRESSOR, AND PUMP REPAIR

Repair Completed

PT. ALBANY ENGINEERING SERVICES (FIELD SERVICES)

Albany
Engineering Services



REPAIR EXHAUST DEFFUSER AND EXHAUST FRAM E GE FR-9
PT. PJB MUARAKARANG

PT. ALBANY ENGINEERING SEVICES

PT. ALBANY ENGINEERING SERVICES

PT. ALBANY ENGINEERING SERVICES (FIELD SERVICES)

Operations and Maintenance/Repair and Refurbishment

- O&M Company Review and Bidding Selection
- O&M Performance Criteria and Review
- Inspection and advisement
- Component categorizing and disposition
- Engineering review
- Life assessment – metallurgical review
- Advanced repair technology
- Advanced coating technology
- Product modifications for life extension

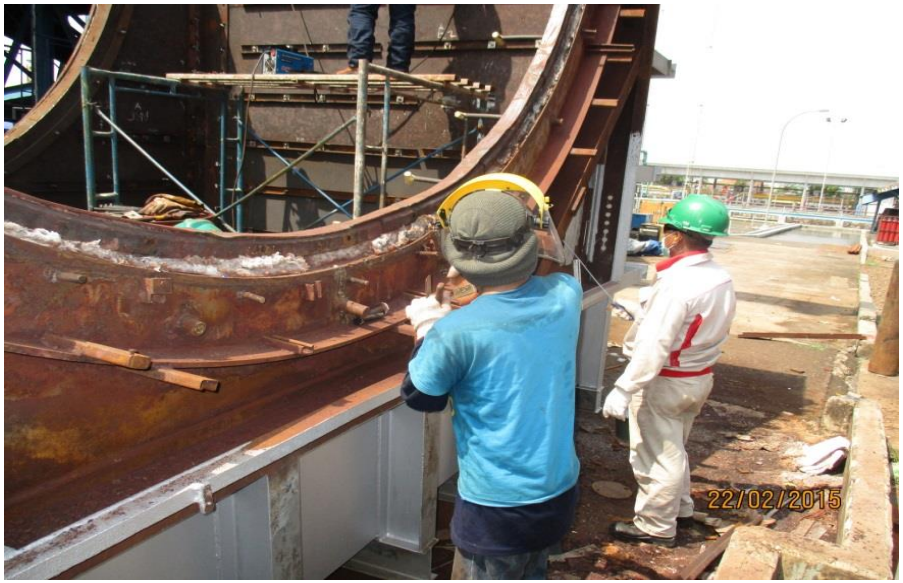
Field Service

- Relocation services
- Turbine modifications and upgrades
- Process oversight and verification
- Inspection and quality services
- Plant performance monitoring

Repair Process

Removed Existing, Fabricate and Install New seal plate and ceramic insulation Radial Bearing

Repair Process



Clean Up and Painting of Exhaust Plenum with Heat Resistance paint

FIRST YEAR INSPECTION
STEAM TURBINE & AUXILIARY UNIT # 2

Incoming Inspection

FIRST YEAR INSPECTION
STEAM TURBINE & AUXILIARY UNIT # 2

Take data of vibration and alignment the existing / current operation

- Open Bearing Pedestal
- Un couple main oil pump
- Un couple generator
- Un couple LP turbine
- Check alignment main oil pump and HP turbine, LP turbine
- Check alignment generator to LP turbine
- Check internal clearance LP turbine

Check general visual condition

1. HP Turbine

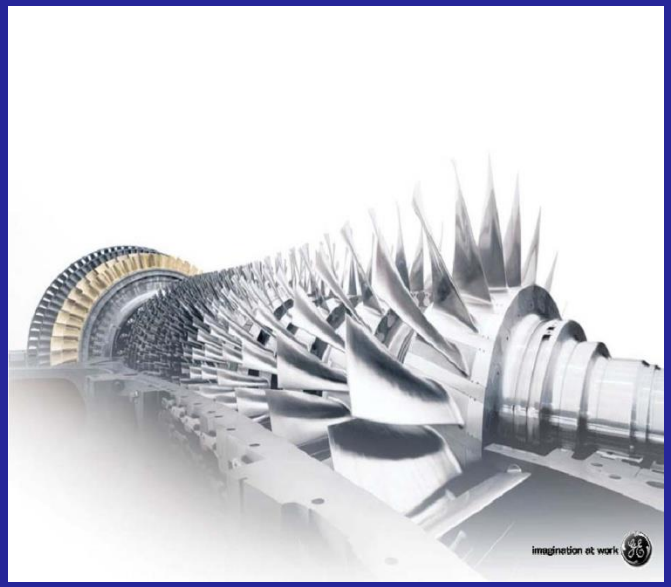
- Check upper-inner casing condition
- Check clearance before dismantle of the inspected diaphragm
- Check of the clearance of upper diaphragm.
- Check visual condition of rotor blade and stator blade

FIRST YEAR INSPECTION
STEAM TURBINE & AUXILIARY UNIT # 2

- Check clearance of diaphragm and casing

2. LP Turbine

- Check upper – lower casing condition
- Check clearance before dismantling of diaphragm
- Check condition of upper and lower of the last diaphragm career
- Check clearance diaphragm to rotor blade
- Check visual of rotor blade and stator blades
- Check clearance rotor blades diaphragm and casing



Dissassembly work

- Dismantle insulation
- Dismantle HP Turbine
- Dismantle LP Turbine
- Valve Block
- Check lube oil system
- Check generator bearing
- Check field instrument

FIRST YEAR INSPECTION
STEAM TURBINE & AUXILIARY UNIT # 2

Is there any crack indication

Yes

Repair (ship to Work Shop)

No

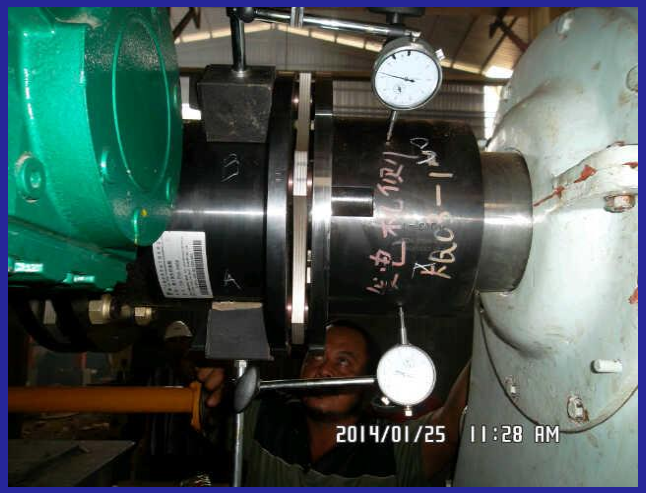
Check general visual condition

1. **HP Turbine**
   - Check upper-inner casing condition
   - Check clearance before dismantle of the inspected diaphragm
   - Check of the clearance of upper diaphragm.
   - Check visual condition of rotor blade and stator blade
   - Check clearance of diaphragm and casing
2. **LP turbine**
   - Check upper – lower casing condition
   - Check clearance before dismantling of diaphragm
   - Check condition of upper and lower of the last diaphragm career
   - Check clearance diaphragm to rotor blade
   - Check visual of rotor blade and stator blades
   - Check clearance rotor blades diaphragm and casing

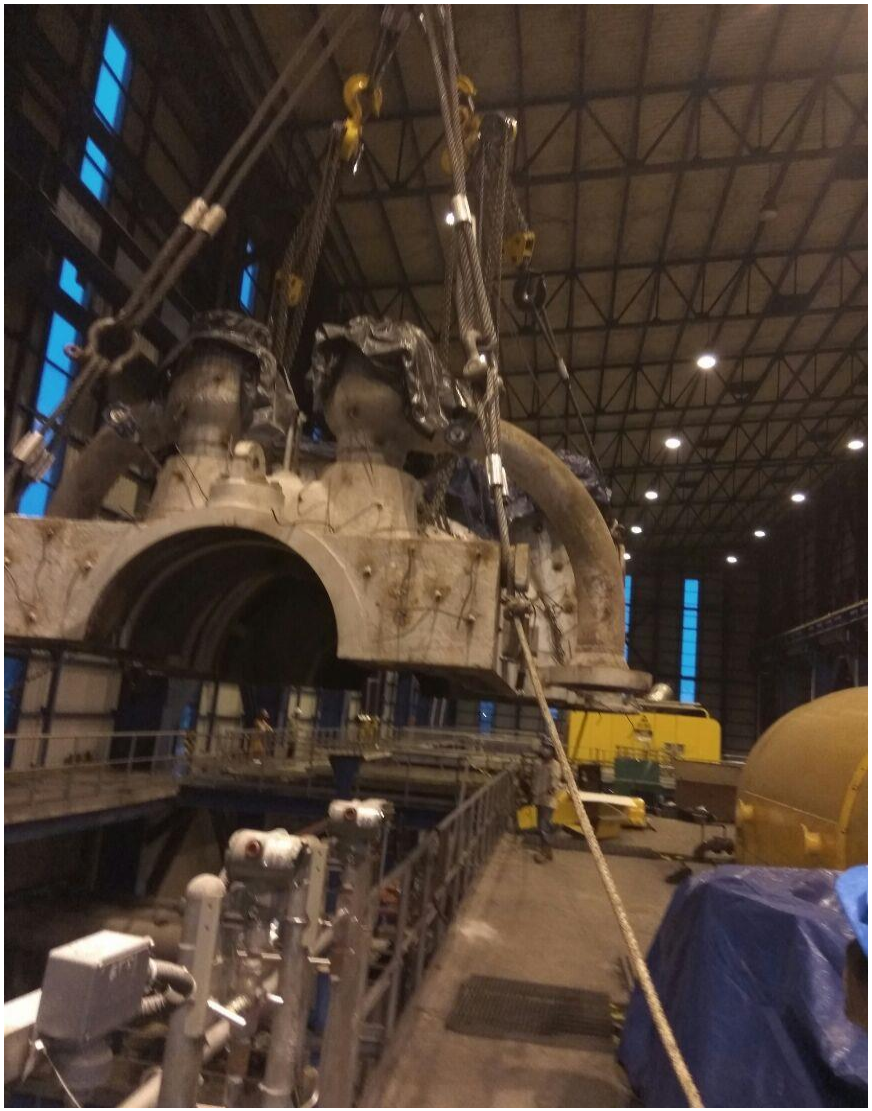
FIRST YEAR INSPECTION
STEAM TURBINE & AUXILIARY UNIT # 2

- Alignment coupling generator and LP turbine
- Alignment LP turbine and HP Turbine
- Install all Connect
- Final QC check

START - UP
&
COMMISIONING



FIELD SERVICES



Lifting UPER CASING HP TURBINE 110 MW AT PLN SEBALANG LAMPUNG

FIELD SERVICES

Lifting HP TURBINE ROTOR 110 MW AT PLN SEBALANG LAMPUNG

FIELD SERVICES

INSPECTION OF LP TURBINE ROTOR

FIELD SERVICES

Lifting and inspection of Turbine Diaphragm

Re-install HP Rotor turbine 110 MW

FIELD SERVICES

ALIGNMENT HP AND LP TURBINE 110 MW AT PLN SEBALANG LAMPUNG

FIELD SERVICES

Re-install turbine 95% completed

Re-install turbine 100 % completed

FIELD SERVICES

Overhaul / on site repair rotor (runner) of Hydro Turbine at Saguling of Indonesia Power

PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

Albany
Engineering Services

CONSTRUCTION SERVICES

ALBANY'S TOOLS ARRIVED AT SITE

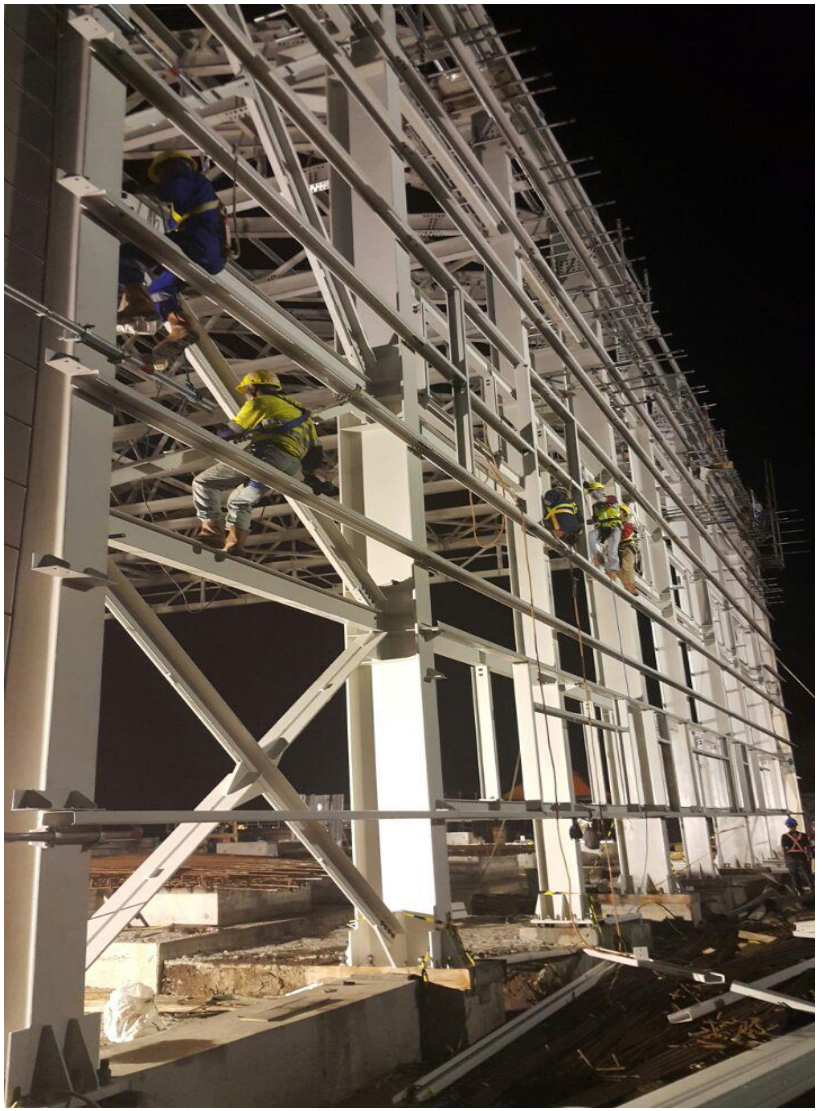
• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

SUPERVISOR AND TEAM OF CONSTRUCTION DIVISION

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

START TO ERECTION OF POWER HOUSE STEEL STRUCTURE OFPLTMG BIMA 3X20 MW

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)



START TO ERECTION OF POWER HOUSE STEEL STRUCTURE OFPLTMG BIMA 3X20 MW

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

ALBANY TEAM MANAGEMENT OF 3X20 MW PLTMG PROJECT BIMA

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

1 0F 3 UNITS GAS ENGINE OF MAN IS RECEIVED IN POWER HOUSE

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

GAS ENGINE UNDER INSTALLATION ON FOUNDATION

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

GAS ENGINE ALMOST ON FOUNDATION

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

GAS ENGINE ON FOUNDATION AND READY TO JACKING DOWN

• PT. ALBANY ENGINEERING SERVICES (CONSTRUCTION)

GAS ENGINE AND ALTERNATOR ON FOUNDATION AND READY TO BE ALIGNED

PLTMG 3X20 MW PLN BIMA

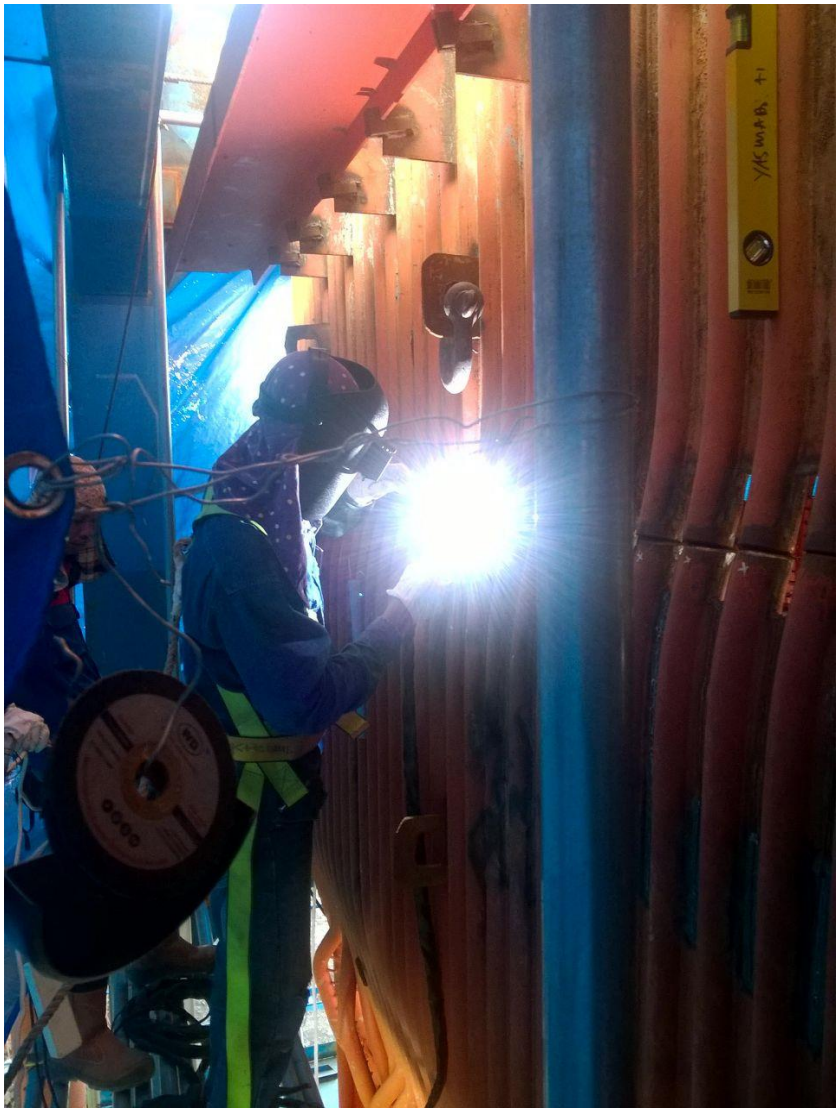
INSTALL STEEL STRUCTURE AND ELECTRICAL CABLE TRAY IN CCB

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

CONSTRUCTION of Steam Power Plant 2 x15 MW at PT. SINERGY POWER SOURCE MOJOKERTO

PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Fit up pipe lower down comer



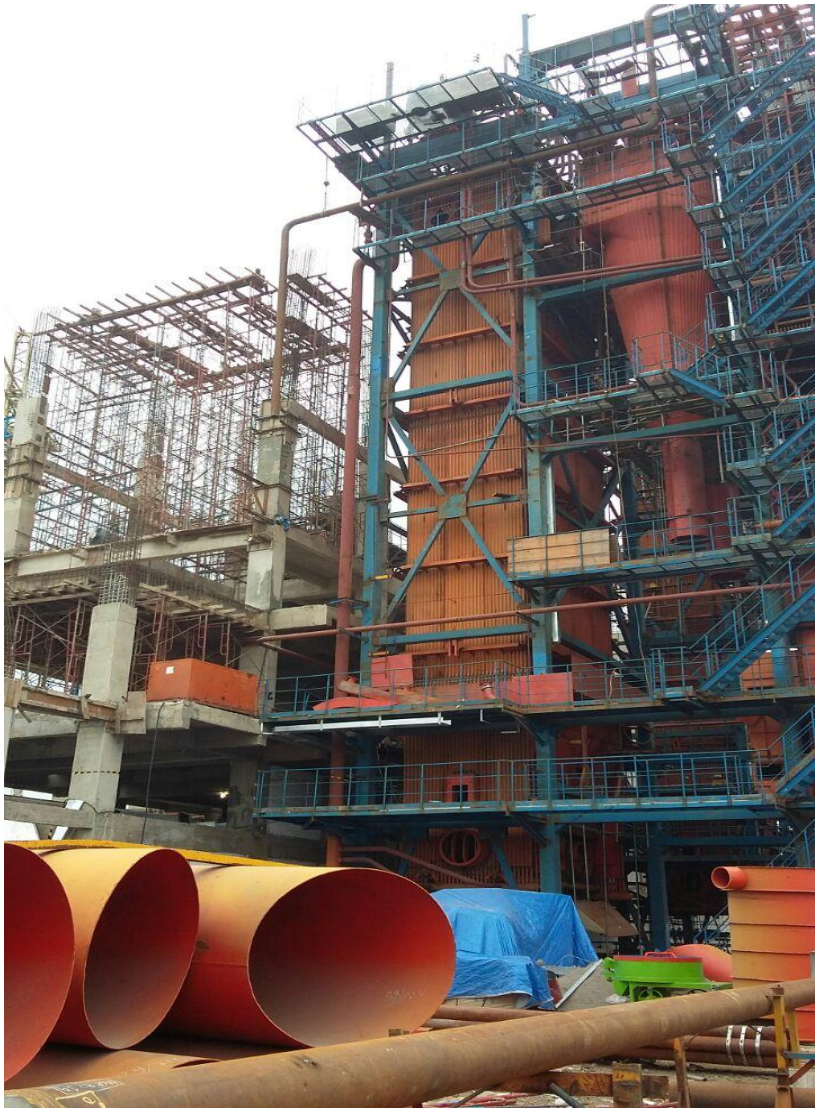
Welding joint water wall

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Install electrical / control cable

Install electrical / control cable

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)



Install electrical / control cable

Install electrical / control cable

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Progress of Project is 76% completed

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

TURBINE FOUNDATION CHECK AND CONTROLL





• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)





COOLING TOWER SYSTEM

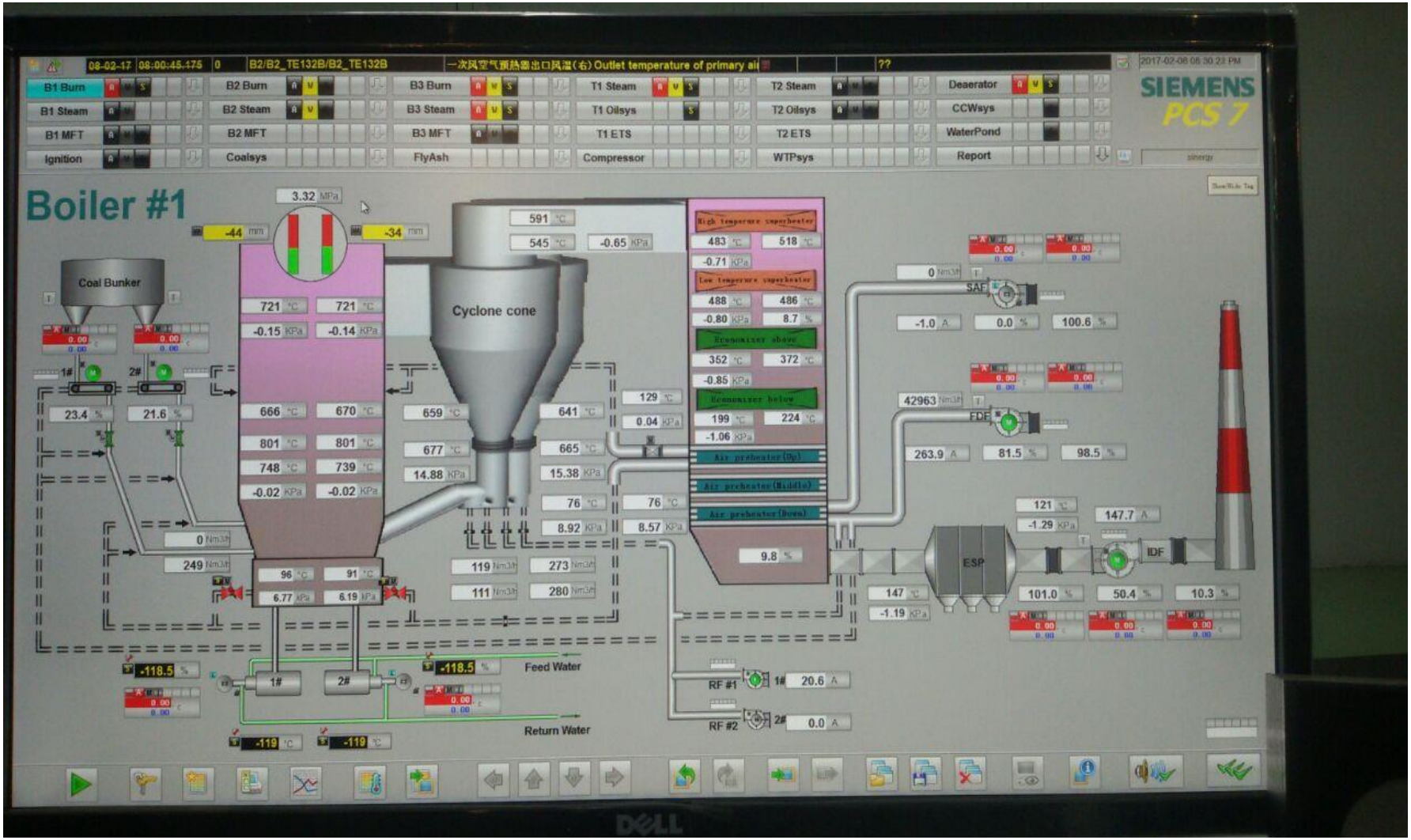
• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

WATER TREATMENT SYSTEM

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

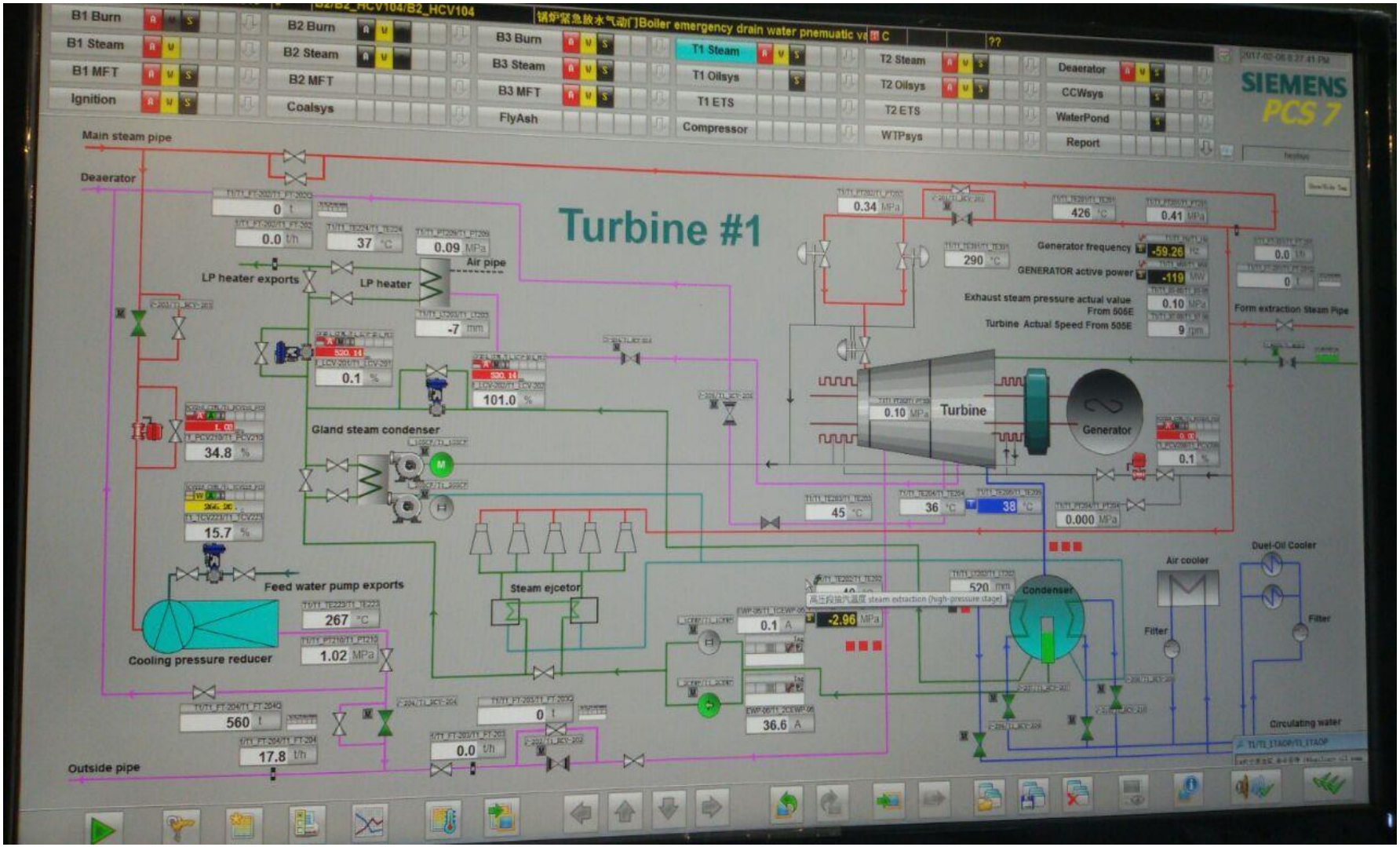
INSTRUMENT AND CONTROL SYSTEM

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)



Install instrumentation on steam turbine unit in Control Room

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)



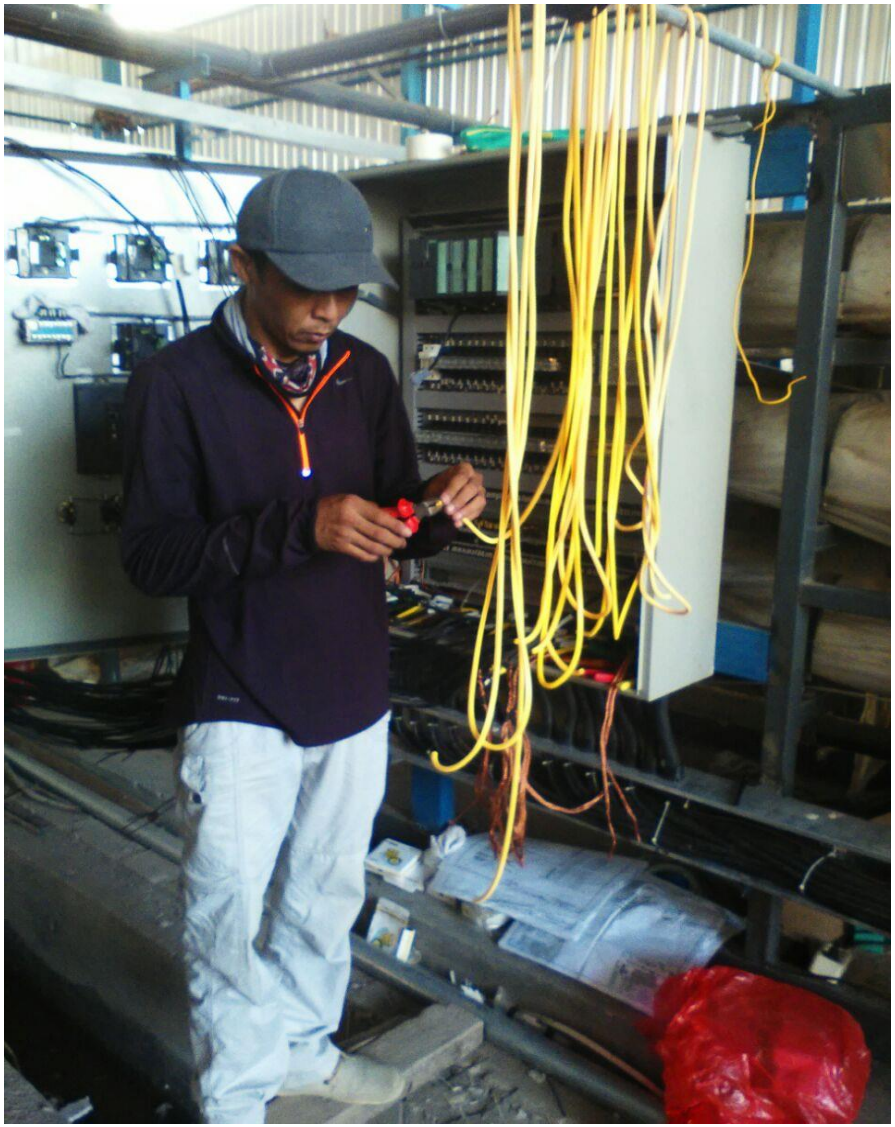
Install instrumentation on steam turbine unit in Control Room

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

DCS Installation is completed

PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

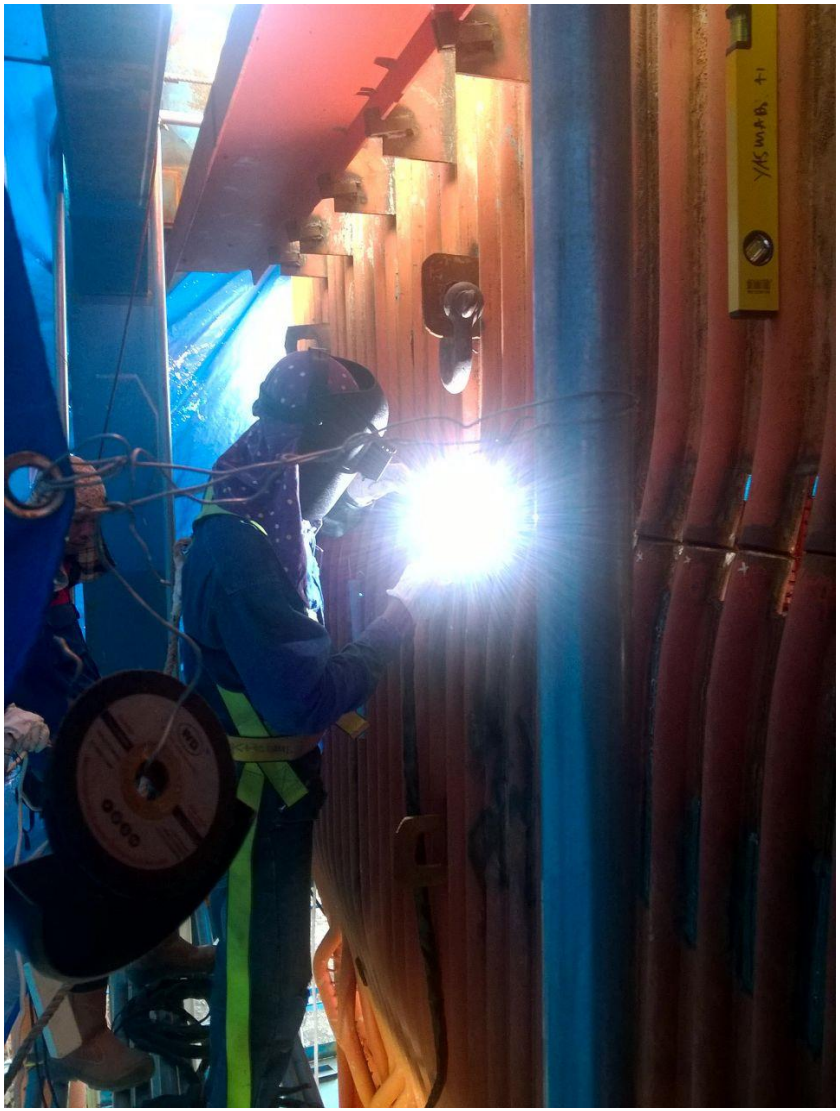
Installation of bush bar



Cable code / labeling

PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Fit up pipe lower down comer



Welding joint water wall

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Construction and Specialized Labor/Staffing (SPS PROJECT)

*Specialized provider of craft labor
*Workforce management
*Legal review and permitting personnel and services
*Construction and employee contract review
*Staffing and Training Development

Welding underground pipe

Install cooler tower / cooling water system

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Construction and Specialized Labor/Staffing (SPS PROJECT)

*Specialized provider of craft labor
*Workforce management
*Legal review and permitting personnel and services
*Construction and employee contract review
*Staffing and Training Development

CFB under contruction

3 (three) unit steam drum fix at place)

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Construction and Specialized Labor/Staffing (BABELINDO ENERGY)

*Specialized provider of craft labor
*Workforce management
*Legal review and permitting personnel and services
*Construction and employee contract
*review
*Staffing and Training Development

2 (two) unit steam drum fix at place)

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Install electrical / control cable

Install overhead crane

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Lifting Lube Oil System for Steam Turbine Unit # 1

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Preparation for lifting Steam Turbine

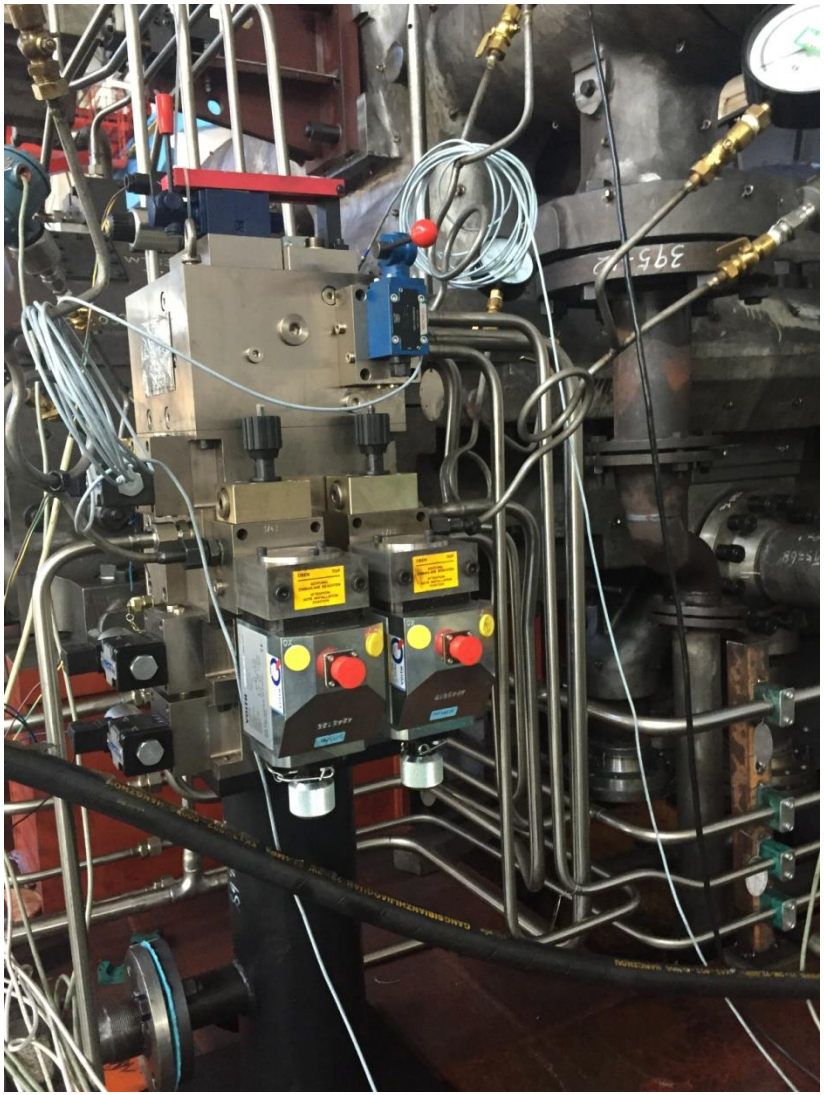
Turbine on position

- **PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)**

Turbine on position

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Install Steam Turbine unit



Install instrumentation on steam turbine unit

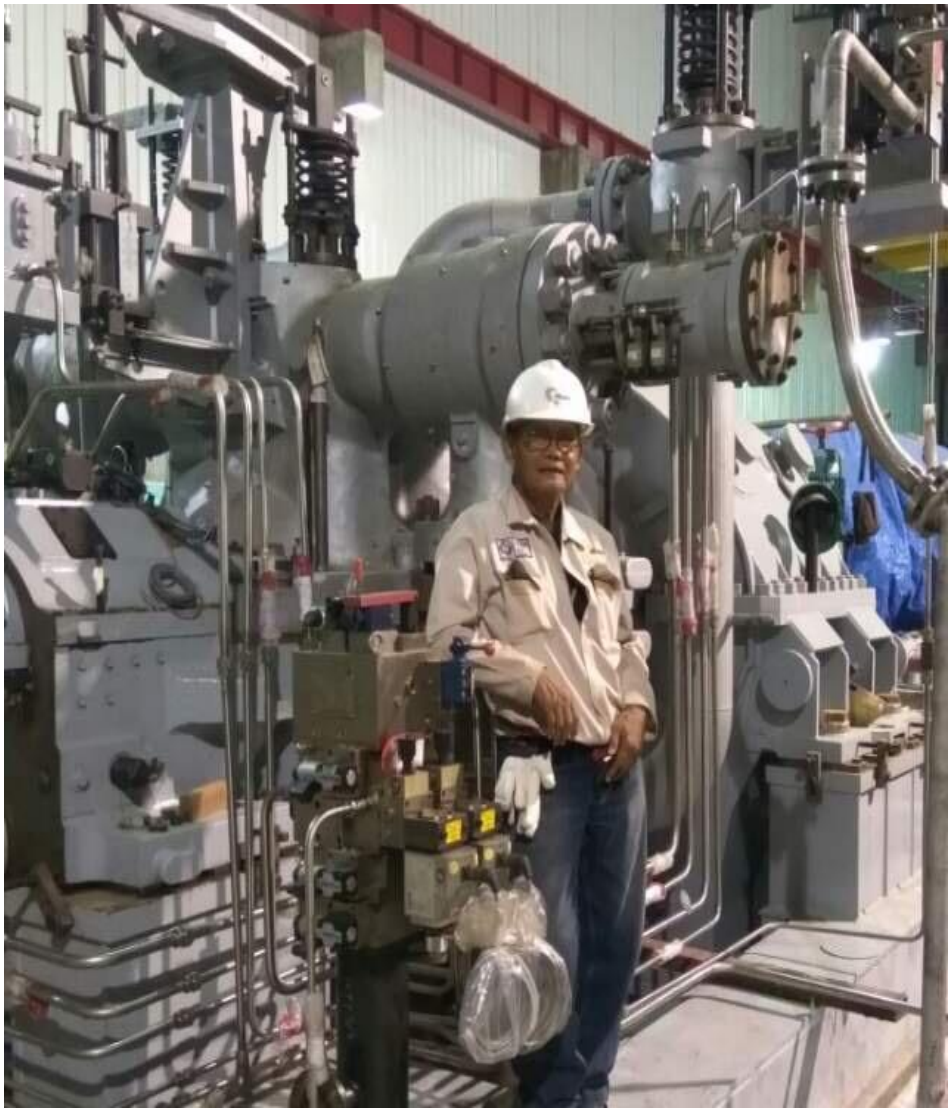
• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Preparation for lifting Generator

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Preparation for lifting Generator

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)



Turbine is installed completely

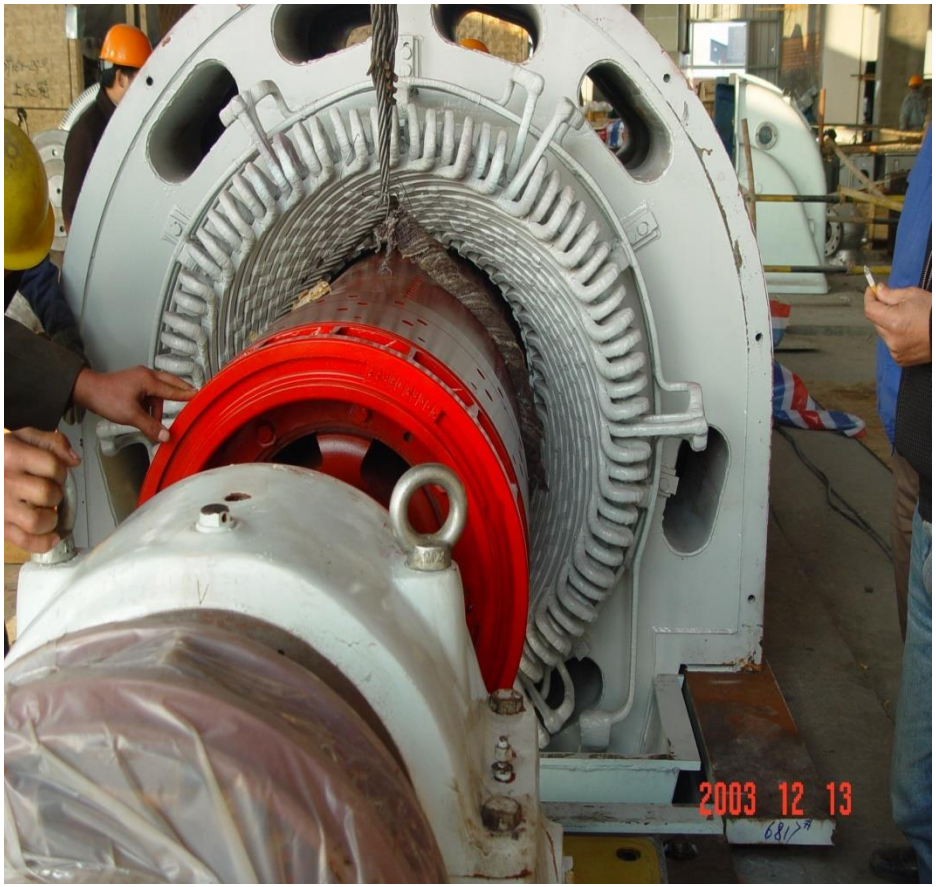
• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Install Stator and rotor generator unit

Install Stator and rotor generator unit

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Install rotor to stator of generator unit



Install rotor to stator of generator unit

• PT. ALBANY ENGINEERING SERVICES (CONTRUCTION)

Installation of Turbine, Generator, and Turbine-Generator set is completed

PT. ALBANY ENGINEERING SERVICES

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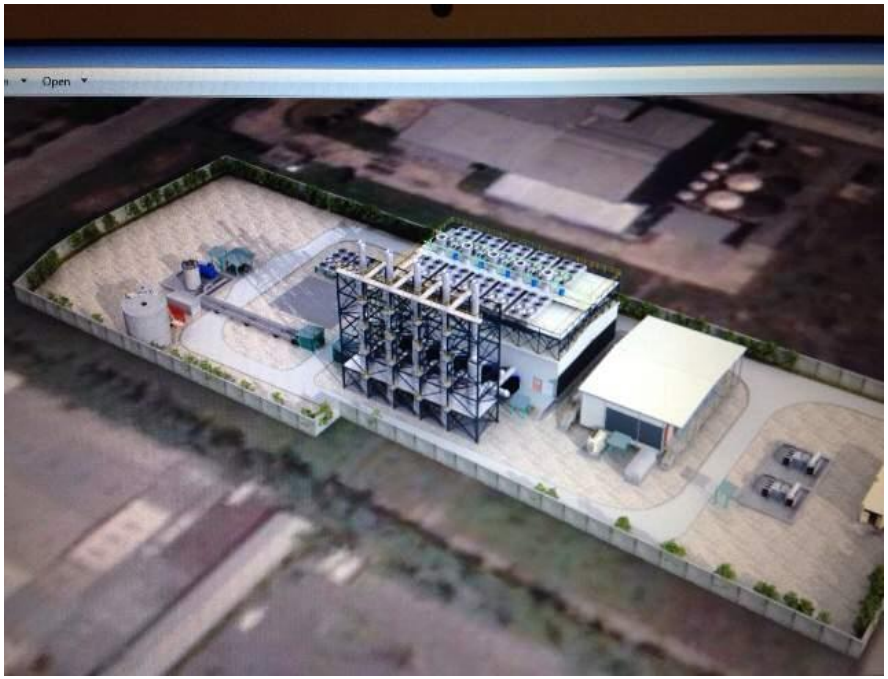
ENGINEERING, PROCUREMENT,
& CONSTRUCTION (EPC)



PT. ALBANY ENGINEERING SERVICES, EPC

Engineering , EPC, and Contract Services

Oversight is required across the whole scope of construction and power generation projects to keep accountabilities, as well as schedule and cost performance target realization. Key aspects of projects, regardless of size, which must be controlled and planned are presented in next pages. By no means is this a comprehensive list, but it is provided to give an overview and some clarity to the complexity of power generation programs and the multi-faceted and inter-connected features which must be managed and balanced for successful outcomes and completion within budgetary and time constraints.

One of the major engineering services offered by ALBANY is that of representative to the ultimate owner of the project who bears the burden of risk of non-completion and further risk by technical mishaps and quality control and assurance issues.

Key Aspects of Engineering Support – Initial Project Phases

- Owner's advisor, engineer and representative
- Site and equipment selection
- Conceptual plant design
- Supplier and contractor selection
- Technology validation
- Project scheduling
- Planning and Feasibility Studies
- Project Cost Estimates
- Due Diligence Studies for Asset Acquisitions
- Cost / Benefit Analysis

PT. ALBANY ENGINEERING SERVICES

Gas Turbine has been repaired and serviced completely

PT. ALBANY ENGINEERING SERVICES

Steam Power Plant 2 x 15 MW is completed installed by PT. Albany Engineering Services

PT. ALBANY ENGINEERING SERVICES

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