Clarification No. 01 Dated 31.03.2021 to Bidders Queries
NIB No. 380 Dated 19.03.2021.

Name of Work: **Limited Tender for renewal of Industrial All Risk (IAR) Insurance Policy for the Assets of Assam Gas Based Power Plant (291 MW), Bokuloni, Assam, for a period of 1(one) year w.e.f. 00:00:00 Hours of 19.04.2021.**

Sl. No.	Bidders Queries	NEEPCO's Response
1	Confirm previous insurer and the premium for IAR & Terrorism. Premium paid details for last three years.	The previous insurer of the Plant is M/s Reliance GIC Ltd. However, the information on premium payouts pertaining to instant tender are considered to be confidential. In the circumstance, we are constraint to disclose this information.
2	Is Stand-alone policy taken last year for terrorism.	Stand-alone Terrorism Policy is taken for AGBPP.
3	Specify Limit of Liability for terrorism cover.	Please refer to Clause 2.0(i)(B), Section-IV: Scope of Insurance Coverage and Form-A: Price Schedule, Section-VII(Part-B) of the Bid document. Further, please refer to Corrigendum No. 01 Dated 31.03.2021.
4	Latest detailed risk assessment report of the Power plant.	The Risk Management Report of AGBPP is attached at **Annexure-I**.
5	Information required as per the attached questionnaire.	The required information as per the questionnaire is attached at **Annexure-II**. Further, in terms of Clause 1.0(b), Section-V: Conditions of Insurance Policy of the Bid document, bidders if so desire may also visit the Project at their own cost prior to submitting their Bid Proposals.
6	Information concerning the transmission line to be covered, including the total length, and whether this is above or below ground.	Item at Sl. No. 21 i.e. "33 kV Transmission Line" of Description of Assets under Section-VI may be read as "*11 kV Transmission Line*". The 10 km long over-ground 11 kV Transmission line is connected from plant premises to the Water Intake point.

NOTE:

In view of limited time available for finalization of the tender before expiry of the current insurance policy i.e. on 18.04.2021, extension of last date & time of bid submission shall not be entertained.

31/03/2021
Chief General Manager (C)
Contract & Procurement
NEEPCO Ltd. Shillong

Sub: Quarterly Status Report on Risk Management of Assam Gas Based Power Plant, NEEPCO Ltd, Bokuloni for the quarter ending Dec'2020

Sl. No	Risk Description	Risk Exposure	Mitigation Plan	Target Mitigation Date	Status of Mitigation Measures	Remarks
01	02	03	04	05	06	07
01	Less supply of natural gas (fuel) leading adverse effect on plant output resulting to non-achievement of generation target.	9 (High & very likely)	To pursue with OIL to provide the required amount (contractual quantity) of gas. Assistance of Ministry may be requested	Continuously persuade OIL authority from AGBP management	OIL authority has conveyed in a tripartite meeting with OIL, AGCL and NEEPCO and suggested to lay a new gas pipe line for providing necessary gas supply to AGBP. AGCL is taking up the issue for early construction.	After resolution of Baghjan oilfield problem, gas supply to this plant is now improved to some extent.
02	Lack of technical man power especially in the cadre of Line Man, Boiler attendant, operators for operational shift duty.	2 (Medium)	To be recruited as early as possible	Persuade HQ	Presently only one line-man and three Boiler Attendants are available. Most of the senior person working in the maintenance field are on the verge of retirement and due to shortage of technical man power especially in the cadre of Diploma engineers, problem arises in the making of successors of them.	Line-man, Boiler attendant are statutory requirement for this plant. Due to shortage of man power, one shift is running without Boiler attendant. One security guard trained for Boiler Operation should be re-designation.
03	Loss of generation due to mall functioning of existing SF-6 hydraulic operated breaker installed during commissioning which is become obsolete & spares are not-available in the market.	9 (High & very likely)	Phase wise replacement/ retrofitting of existing hydraulic operated Breaker by spring operated breaker	30-06-2021	SF-6 breaker of GTG #3 has been successfully replaced on Aug'2020 and materials for another seven breaker has already been received at site	Retrofitting/ replacement of existing SF-6 breaker by spring operated breaker will be done in phase manner subject to availability of shutdown. Agenda for approval of shutdown is placed in the next OCC Meeting.
04	Less Generation of STG unit due to non-exchange of heat inside the condenser tube because of formation of scaling.	9 (High & very likely	Condenser cleaning and replacement of fill pack of Cooling tower	31-03-2021	Replacement of fill pack of Cooling tower & condenser cleaning job has been successfully completed and recordable enhancement of generation of STG is recorded.	Work already completed on 03-01-2021
05	Risk of scaling formation/ corrosion affect in Condenser tube of Steam Turbines	2 (Medium & unlikely)	Improving the treatment quality of Cooling water through lowering the pH value of Cooling water within the range of 7.6 to 8.2. This can be achieved by sulpheuric acid dosing of cooling water in addition to existing Chlorine Dosing.	Dec'2020	Erection & commissioning of Sulphuric Acid dosing plant for Cooling water is completed.	Process for procurement of sulphuric acid is also initiated so that dosing can be started at an earliest.

06	Leakage of Chlorine gas from Chlorination Plant/Chlorine tonner	2 (Medium & unlikely)	Ensuring of the effectiveness of Safety system for Chlorine leakage including Chlorine neutralizing system, water barrier to arrest the chlorine gas, PPEs, chlorine leak detection & alarm system	Regular basis	Safety system for Chlorine leakage is checked time to time and mock drill is being performed.	Regularly monitored the safety system
07	Fire & explosion in Gas Turbine unit	2 (Medium & unlikely)	Healthiness of existing CO2 flooding system along with fire detection & alarm system as well as effective functioning of the system. Availability of Fire tender & fire personal	Periodic basis	Presently CO2 flooding system in GT# 5&6 and STG Generators are running in auto mode and flooding system for GT #1,2,3 & 4 are running in manual mode.	Tender for renovation of existing CO2 flooding system of GT# 1, 2, 3&4 will be floated to bring the system in auto mode.
08	Fire & explosion in Generation Transformer	2 (Medium & unlikely)	Ensuring effective functioning of emulsifier system. Availability of Fire tender & fire personal	Regular basis	Functioning of emulsifier system is being checked in periodic manner and mock drill is also being performed. Presently few deluge valves are operated in manual mode due to want of spares which is already process for procurement	Manual operated deluge valve will be functioning in auto mode once the spares will be available.
09	Risk of failure of Natural gas carrying overhead pipelines due to erosion/corrosion inside the pipelines which may lead to fire & explosion	2 (Medium & unlikely)	Thickness of pipelines should be measured in periodic manner and take necessary action accordingly. Also stability of pipe carrying rack also to be checked.	Periodic basis	Thickness measurement survey of entire natural gas carrying pipe line are done and the result is satisfactory. Stability of pipe carrying racks are also checked time to time.	
10	Fire & explosion in Gas Booster Station	2 (Medium & unlikely)	Immediate shut down of gas inlet valve. Fire Hydrant system & availability of suitable fire extinguishers	Regularly monitored	Motorized operation of gas inlet valve installed at natural gas inlet line is tested and satisfactory service of the valve is recorded. GBS building is surrounded by fire hydrant network and fire water monitors are also installed. Round the clock CC TV surveillance is there.	Gas leakage detection & heat detector and alarm system installed at GBS is functioning.
11	Risk of fire at Central Control room	2 (Medium & unlikely	Ensuring functioning of Fire detection & alarm system so as to give early alarm in case of fire. Providing sufficient numbers of portable fire extinguishers at CCR.	Periodic basis	Fire detection & alarm system is working properly and sufficient numbers of portable fire extinguishers are installed at CCR. Training also imparted on use of different type of fire extinguishers & fire fighting.	Installation of inert gas based fire suppression system at Central control room is under consideration, feasibility study is under process.

ANNEXURE-II

Questionnaire for Virtual Risk Survey

Year of Establishment: Refer to page-2 Brief description of AGBPP.

Construction; Copy attached

Total plot area: Built-up Area:

Name of building	Year of built-up	Built-up area (sq.ft or sq.m)	Height (m or ft)	Wall made of	Floor made of	Roof made of

Plant Layout: Copy attached.

Surrounding facilities

Direction	Nature of Activities/Type of Occupancy	Distance from compound wall
North		
South		
East		
West		

Details of compound (Type of construction, height): Copy attached.

Occupancy

- Name of Raw Materials: Natural Gas
- Coal Storage and Transportation details: N/A
- Water Source and Storage capacity in Plant premises: River Buridihing,
  Raw Water Reservoir capacity: Clear water reservoir capacity:5500 CuM
- Power Generation and Distribution details

Brief Process Write-up or Process Flow Chart along with Unit-wise Installed Capacity

- **BRIEF DESCRIPTION OF AGBPP**

- Assam Gas Based Power Plant (AGBPP) , a power generation industry is the first venture of North Eastern Electric Power Corporation Ltd (NEEPCO Ltd), a Government of India undertaking Corporation, in the field of gas based thermal sector with an installed capacity of 291 MW. The primes Consultants of this project were Mitsubishi Heavy Industries (Japan) and Bharat Heavy Electricals Limited (India). The Project is located at Bokuloni village of Dibrugarh District, Assam which is around 13 KM from Oil town Duliajan (HQ of OIL India Ltd). Nearest Rly station is Duliajan and next Railway Station is Tinsukia which is around 34 km apart. Nearest Airport is Mohanbari (Dibrugarh) around 60 Km from the project.
- The Plant is generating electricity by using natural gas as fuel. Oil India Limited supplies natural gas through gas pipe lines belong to Assam gas Company Ltd. The project was commissioned during the year 1995 to 1998. It is a combine cycle unit as the waste heat generated by the gas turbine units are used to run the Steam turbines.
- The Plant comprises of 6 (six) numbers of Gas Turbine generators each of 33.5 MW capacity along with 6 (six) numbers Waste Heat Recovery Boilers and 3 (three) numbers of Steam Turbine Generators of 30 MW capacity each. Each turbine is connected with Generator Transformer and two other transformers are used as Station Transformer which is ultimately connected with Switchyard. The fuel used to run the gas turbines is Natural Gas (main constituent is methane) supplied by Oil India Limited through pipelines. The gas supplied by OIL is at around 4 kg/ sq Cm which is compressed up to 21 Kg/cm^2 to get the optimum design pressure of gas for the turbines.
- The Gas Booster Station with 4 (four) gas compressors run by separate gas engines, an integral part of AGBPP, is operated and maintained internally. Water required for the plant are obtained from river “Buridihing” through approximately 10 Km long pipelines which are stored in Raw Water Reservoir and treated in our water treatment plant. Treated water is being stored in semi underground Clarified Water Tank of capacity of 5800 CuM where 2800 Cu M water is exclusively reserved for firefighting purpose. The unit has its De-mineralization plant and Effluent Neutralization system.
- The plant consumes 1.4 MMSCMD of natural gas per day and generates approximately 1600 million unit of electric power per year. The scope of the plant covers from Gas Compressor Station to 220KV Switch yard and raw water reservoir to Effluent treatment plant. The other important units are cooling towers, different dosing facilities, all auxiliary system, offices, Fire station, Air compressor House, AC Plant, Raw Water Pump House, Fire Water Pump House. Occupational health centre is located outside the plant area.
- The plant has two numbers of DM Water tank each of capacity 1725 KL. The plant also has 2 nos HSD tank each of 25 KL capacity to run the emergency backup generators of 950 KVA for the plant and 250 KVA for Gas Booster Station.

No. of Employees: 367 Permanent: 212 Contract: 155

No. of shifts and shift timings: 04, Shift Time: 7-00AM to 2-00PM, 2PM to 10PM & 10PM to 7AM

Weekly Holiday:01

Facilities

1. Hydraulic Equipment (Name, capacity, year of installation, make, used for what):

(a) Hydra-1 no - 10 ton (maximum) capacity used for material lifting

(b) Fork Lifter-1 no- 3 ton capacity used for material lifting

2. Storage (Give details of the dedicated warehouse like, construction details, floor area, items stored, how materials are stored, maximum stack height, how materials are handled, working hours, etc.)

P&M details (As applicable)

- Boiler details (Make, capacity, year of installation, fuel used, where steam is used): Design Specification.

Total nos of Boiler: 06 nos. Make : BHEL, Tirchy, Year of commissioning: 1998

Type: Horizontal, natural circulation, single drum, single pressure, unfired, water tube boiler.

Heat transfer surface area: 1787 M^2.

Nos. of tubes: 1260 nos.

Header arrangement :2x(4+(4+3)+5)+1(de-super heater header)

Tube dimension: 52 mm x 3 mm for eco and evaporator.

Height: 7000 mm.

and 52 mmX4 mm for super heater.

Total water volume: 46.5M^3.

Drum water Volume: 14M^3.

Normal drum level:7M^3.

Exhaust gas parameter at base load operation:

	For unit 1,2,3 &4	***For unit 5&6.***
Exhaust temperature:	524^{0}C.	543^{0}C.
Exhaust flow rate/sec:	160 Kg.	130 Kg.
Inlet temp Evap:	460^{0}C.	460^{0}C.
Inlet temperature to Eco:	275^{0}C.	270^{0}C.
Exhaust temperature:	210^{o}C.	205^{0}C.
Steam flow:	65 T/hr.	59.0T/hr.
Pressure:	43 Kg/cm^2.	41Kg./cm^2.
Temp:	473^{0}C.	473^{0}C.
Feed water temp:	110$^{0\text{-}C.}$	110^{0}C.

- Turbine-Generator details (Design Specification):

Mitsubishi Gas Turbine: 04 nos, Model:MW251, capacity: 33.5 MW

BHEL Gas Turbine: 02 nos, Model: Frame VI-B, PG6541B, capacity: 33.5 MW

Steam Turbine detail:

Type: HNK 71/2.8/32-4, Make: BHEL, Number of unit: 03 nos. Year of commissioning: 1998.

M/C no. T-0401/0402/0403

Blade configuration: Stage: 45 nos. (14+11+12+5+3)

Maximum output (Design): 33070 KW

Designed rating: 30000 KW

Speed Turbine: 3000 TPM

Initial steam temperature: 41 ATA

Maximum steam pressure at HP wheel: 31 ATA

Pressure at Exhaust Frame: 0.088 ATA

Specified initial steam temperature: 470^{0}C

Permissible deviation without limitation. 470 ^{0}C

Cooling water temperature: 27/35^{0}C
No Load Qty: 4T/hr.

Generator details:
Type: TARI 800-26P, IS:5422.
Make: BHEL.1994.
Output: 35.5MW,pf:08/KVA:44.625MW.
Volt: 11KV/2342 Amps.
Rotor volt: 191 volt/642 amps'/Insulation class: B

- Plant Availability Factor:69.44% for Yr 2019-2020
- PLF: 63.43% for Yr 2019-2020
- Power Purchase Agreement details: (Available with HQ Commercial).
- Cooling Tower (Make, capacity, year of installation):
  Make : Paharpur Cooling Towers.
  Type: Induced draught couter flow cooling tower.
  CT model: 85442-3.0-8
  Nos of cell: 08 nos. :
  Gear box model: SR 36.
  Gear rating: 14.84:1
  Motor rating: 75 KW.
  Fan dia: 10 mtr.
  Capacity: 19500 CUM/Hr
  HWT: 37^{0}C, CWT: 27^{0}C, WBT: 21.9^{0}C

- **Transformer Details GT, AT and UT**: Make, capacity, Year of installation, Oil capacity, indoor/outdoor, fire protection provided
- **Details of transformer at risk site**

Sl No	Details of transformer	Maker	Quantity	Power Rating	Year of manufacture
01	Station Transformer #1	BHEL		15 MVA	1995
02	Generator Transformer GTG#1	Mitsubishi		50 MVA	1996
03	Generator Transformer GTG#2	Mitsubishi		50 MVA	1996
04	Generator Transformer GTG#3	Mitsubishi		50 MVA	1996
05	Generator Transformer GTG #4	Mitsubishi		50 MVA	1996
06	Generator Transformer GTG#5	BHEL		50 MVA	1996
07	Generator Transformer GTG#6	BHEL		50 MVA	1996
08	Station Transformer #2	BHEL		15 MVA	1995

09	Generator Transformer STG#1	BHEL		50 MVA	1998
10	Generator Transformer STG#1	BHEL		50 MVA	1998
11	Generator Transformer STG#1	BHEL		50 MVA	1998
12	Unit Auxiliary Transformer	Mitsubishi	6 nos	500 KVA	1995-96
13	Unit Auxiliary Transformer	BHEL	2 nos	500 KVA	1998
14	Distribution Transformer		10 nos	2MVA	1998
15	Transformer		2 nos	630 KVA	1998

- Attach Single Line diagram (SLD)
- Diesel Generator (Make, Capacity, Year of installation, auto/manual, used for what):
  (a) Cummin make 950 KVA capacity DG Set (1996) used for back-up power
  (b) Cummin make 250 KVA capacity DG Set (1995) used for back-up power for Gas booster station
- Brief note on Maintenance Procedure and Condition Monitoring: Annual maintenance contract has been awarded to OEM. Maintenance activities are carried out as per OEM Guidelines. Vibration of all major drives are recorded and monitored.

Fire Protection Systems

Sprinkler system

Area Protected	Design Density (Density/Area)	BOR Flow (gpm/lpm)	BOR Pressure (psi/kPa)	Sprinkler Temp and K - Factor
Transformer Yard, Cable galleries, MOT, DOT Lube Oil tank				79'C

Fire Water Reservoir capacity (Liters): 2800 CuM

Source of Water: Bore well/Supply Water/Tanker:

Total no. of Hydrants: Single Hydrant-39 nos, Double Hydrant-7 nos, and Landing Valve-11 nos
Internal: Yard Hydrants: Fire Escape Hydrants:

Total Water Monitors: 4 nos Total Foam Monitors: Water monitors can also be used as Foam monitor

Total number of one inch hose reels/hose drums: Hose reels are fitted with 3 nos of fire tenders only

Total Hose boxes: 20 nos

Hose Pipes: 60 nos

Fire Pump Details:

Sl. No.	No. of Pumps	Make	Capacity (M3/hr)	Head (m)	Speed (rpm)
Jockey Pump	2	Mather & platte	50 CuM /hr		
Main Electrical Pump	03	Mather & platte (make-GEC)	410 Cum/hr		
Engine pump	02	CUMMIN	410 Cum/hr		

Special Fire Protection for below Areas

- **Cable Gallery: Medium velocity water spray system with fire detection & alarm system, apart from that round the clock monitoring through CC TV surveillance**
- **TG:**
- **MOT tank: High velocity water spray system**
- **Generating Transformers: High velocity water spray system**
- **Coal Conveyor lines: N/A**
- **Coal Yard: N/A**
- **DCS/SCADA Control room: Fire detection & alarm system**
- **Hand appliances** (Total numbers): Portable Fire Extinguishers: 347 nos
- **Public fire station** (Location, Distance from site, response time): AGBP has its own fire station with three numbers of fire tenders with fully equipped firefighting team rendering round the clock service
- **Fire detection system** (No. of detectors, type of detectors, areas protected, location of fire alarm panel): All vital location are provided with fire detection & alarm system with sufficient numbers of Heat detectors/ Smoke detectors
- Total no. of Manual Call Points (MCP): 35

Security system

Own/Contract guards per shift (mention Number):

No. of CCTV cameras: 74 nos. Location of CCTV display: Fire Control Room, Security Room, CCR Monitored by whom:

- Number of **Trained Fire fighters** in each shift:
- On-site Plan available (yes/no), if yes, how frequently Mock drills are conducted: Both On-site & Off-site Emergency Response Plan are available;
- Hot work Permit System: (Share a filled copy)
- Safety Training and its frequency:
- Lightning Arrestors: (Number & Location)
- **Flood Exposure: Nil**
- Any river/water body near-by:
- IR Thermography (mention when it was conducted last)
- **Past Loss History** (Attach RCA Report, if available)

Few Supporting Photographs of Plant of various areas.

ANNEXURE-I

BUILT UP AREA OF PLANT AREA BUILDIND,CWC AGBP NEEPCO LTD. BOKULONI,

SL. NO	NAME OF BUILDING/LOCATION	DIMENSION(in metre) Length	Breath	Height		AREA/LENGTH SQM/M	Remarks
1	D.M.PLANT	33.00	20.70	9.10		683.10	RCC
	i)D.M PLANT WATER PUMP HOUSE	14.70	7.00			102.90	"
	DEGASSAR WATER TANK	19.80	7.10			140.58	"
2	D.M.STORAGE TANK no.-1	15.03m dia of the tank		11.65		177.33	,M.S Plate 2 nos. tank
	D.M.STORAGE TANK no.-2					177.33	"
3	CLARIFIED WATER PUPM HOUSE	30.10	7.85	5.10		236.29	RCC
4	CLARIFIED WATER STORAGE TANK						"
i)		53.00	51.25	D-2.6		2716.25	
ii)	(-) deduct for non area	10.60	10.15		(-)	107.59	
					T	2608.00	
5	CLARIFLOCULATOR	2x23.5mdia	(3.14x23.5x23.5)/4	D-3.75		867.03	R CC 2 nos. tank
	AREATOR	10.96mdia	(3.14x10.96x10.96)/4	4.30		94.30	"
6	RAW WATER PUMP HOUSE	19.75	8.22			162.35	"
7	RAW WATER RESERVOUR						
i)		131.65	50.90	D-4.00		6700.99	"
ii)		86.55	59.60			5158.38	"
iii)	D-SILTING BASIN -	42.03	33.45			1405.90	"
					T	13265.27	"
8	FIRE WATER PUMP HOUSE	25.30	15.60	6.575		394.68	"
9	AIR COMPRESSOR HOUSE	30.70	17.45	10.6		535.72	"
10	COOLING TOWER	103.18	16.85	9.30		1738.58	"
11	C.W PUMP HOUSE	32.10	11.65	13.80		373.97	"
	C.W EIECTRICAL BAY	27.75	11.65			323.29	"
12	FUEL GAS STATION						
13	CEMENT STORE	36.50	15.50	3.90		565.75	CGI sheet roofing
14	WORK SHOP BLDG.	25.40	20.75	6.00		527.05	RCC
15	D.G ROOM	11.90	8.00	6.00		95.20	RCC
16	AREATOR	10.96mdia	(3.14x10.96x10.96)/4	4.30		94.30	"
17	FIRE STATION	28.8	12.30	5.50		354.24	RCC & CGI Sheet roofing
18	SWITCH YARD	89.00	77.10			6861.9	
		240.8	76.85			18505.48	
					T	25367.8	
19	ADMINISTRATIVE BUILDING					1200.00	CGI sheet roofing
20	CLORINATION PLANT	19.1	11.65	7.00		222.52	RCC
		4.25	3.80			16.15	

21	GAS BOOSTTER	45.00	17.00	11.20		765.00	RCC
	GAS BOOSTTER CONTROL ROOM	19.55	16.62	5.10		324.92	RCC
22	DIESEL OIL HANGLING AREA	8.60	8.60			73.96	
23	DIESEL OIL UNLOADING PUMP HOUSE	7.25	5.50	3.88		39.88	RCC
24	EFFLUENT TREATMENT PLANT						
i)		12.00	11.80	10.10		141.60	RCC
ii)		16.00	7.10			113.60	
iii)		2.30	4.15			9.45	
iii)	EQUILIZATION TANK	27.08	10.37	2.40		280.82	RCC, 2 nos. tank
		27.08	10.37			280.82	
iv)	SLUDGE THICKNER	16.27 m dia		4.15		207.79	"
v)	CLARIFLOCULATOR	11.05 m dia		2.400		95.85	"
25	COOLING WATER MOUDLE	13.00	8.20	3.55		106.60	Structural materials ,total 4 nos.
26	LUBE OIL COOLERS	12.00	4.65	3.00		55.80	Structural materials ,total 2 nos.
27	UNIT CONDENSATE MAKE UP TANK	Dia-6.00 m		3.10		28.26	3 no. Tank M.S plate
28	PLANT MAINTENANCE BUILDING(ELECTRICAL)						
i)	"	45.00	12.50	3.75		562.50	
ii)	"	32.50	12.50	3.75		406.25	CGI sheet
					T	968.75	roofing
29	G.T BUILDING	102.04	42.54	18.60		4340.78	RCC
30	M.C.R BUILDING	62.81	33.20	13.50		2085.29	RCC
31	S.T BUILDING	97.46	32.00	20.80		3118.72	RCC
32	MM wing (Store)	84.60	40.40	6.00		3417.84	CGI sheet roofing
33	CHEMICAL HOUSE BUILDING	24.10	9.55	10.5		230.16	RCC
34	CWC ,Utility & W C OFFICE	35.30	10.30	3.00		363.59	CGI sheet roofing
35	TRAINING CENTRE	33.85	10.30	3.00		348.66	"
36	SECURITY OFFICE BUILDING	12.05	6.85	3.00		82.54	RCC
37	WEIGHT BRIDGE	11.65	3.35			39.02	
38	i)PLANT AREA, MAIN DRAIN.					3600.00 RM.	
	ii)PLANT AREA ,SECTOR DRAIN					1043.00 RM	
39	ROADS(width:-6.60m/3.50m)					3700.00 RM	
	ii)CULVERT					24 Nos.	

ANNEXURE – II

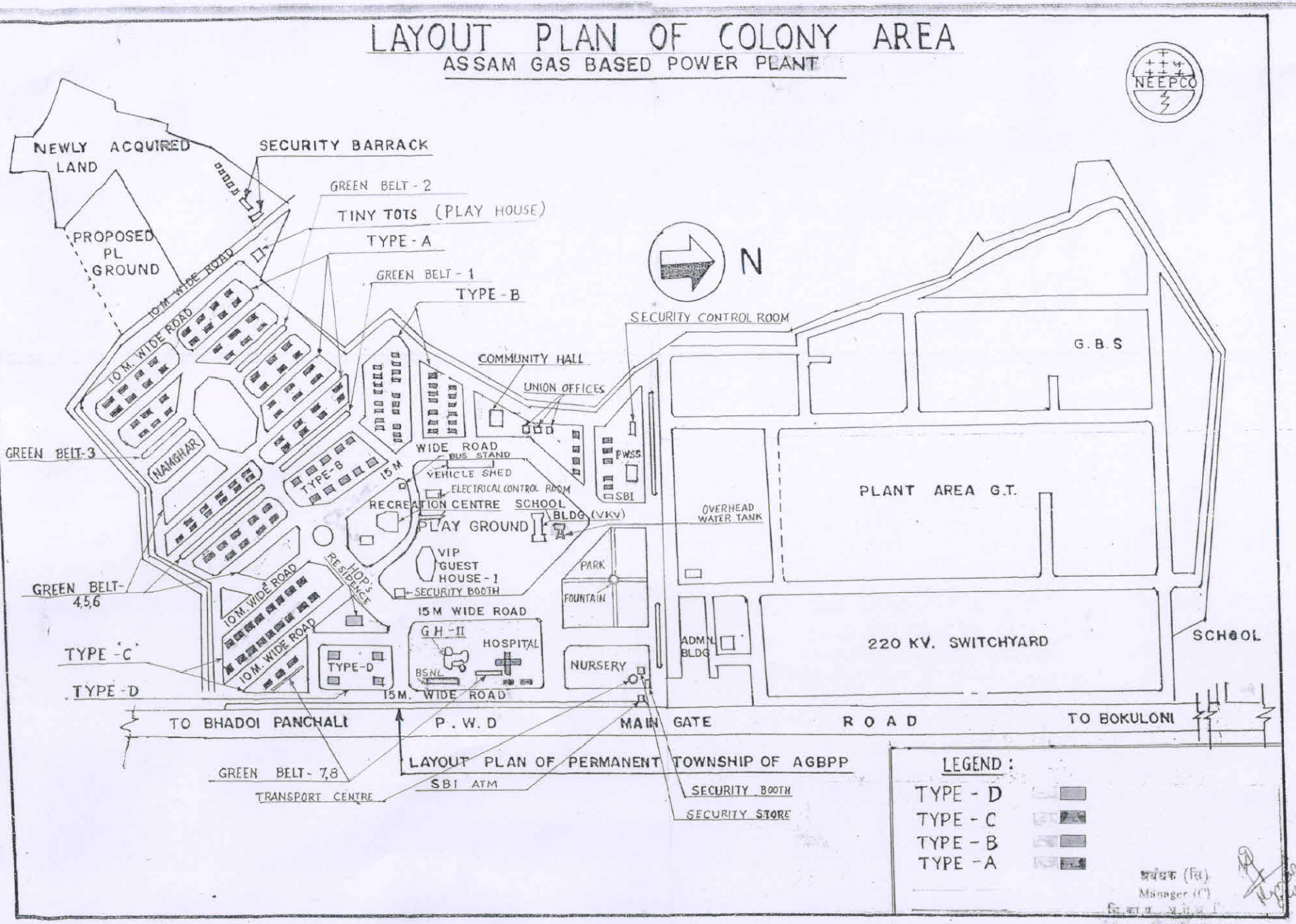
List of Built up Area of Residential and Non Residential Building in AGBP Coloy

Sl No.	Type of Qtr./Name of Building	No. of Building	Built up Area/Building in Sqm.	Total Built up Area in Sqm.
1	A - Type	58	101.75	5901.50
2	A- Type (Modified)	12	138.70	1664.40
3	B- Type	11	67.44	741.84
4	B- Type (Modified)	41	72.56	2974.96
5	C- Type	20	100.00	2000.00
6	D -Type	4	180.42	721.68
7	HOP Residence	1	303.31	303.31
	Security Booth	1	10.40	10.40
	Servent Cum Security Barrack	1	124.00	124.00
8	Electrical Control Room	1	123.29	123.29
9	School Building (VKV)	1	1227.08	1227.08
10	BSNL Building	1	113.60	113.60
11	GH-I	1	500.43	500.43
	Security Booth	1	3.24	3.24
12	GH-II	1	1126.86	1126.86
13	Recreation Centre	1	547.70	547.70
14	Medical Building	1	681.11	681.11
15	Transport Centre	1	148.08	148.08
16	Play House (TINY TOTS)	1	172.26	172.26
17	SBI ATM Building	1	10.50	10.50
18	Security Store near Main Gate	1	31.00	31.00
19	Security Booth at Main Gate	1	8.10	8.10
20	Nursery Building	1	32.55	32.55
21	Workers Union Office	1	91.76	91.76
22	Labour Union Office	1	86.64	86.64
23	Empoyees Union Office	1	76.26	76.26
24	Multipurpose Community Hall with Kitchen	1	1060.02	1060.02
25	Security Barrack	1	907.58	907.58
26	Security Booth at Plant Gate	1	19.80	19.80
27	Water Supply Pump House	1	37.65	37.65
28	Vehicle Shed	1	276.22	276.22
29	Bus Stand	1	25.55	25.55

प्रबंधक (सि)
Mgr. (C) Manager (C)
CWC AGBP
C. W. Complex, AGBP
नीपको, बकुलनी
NEEPCO, Bokuloni

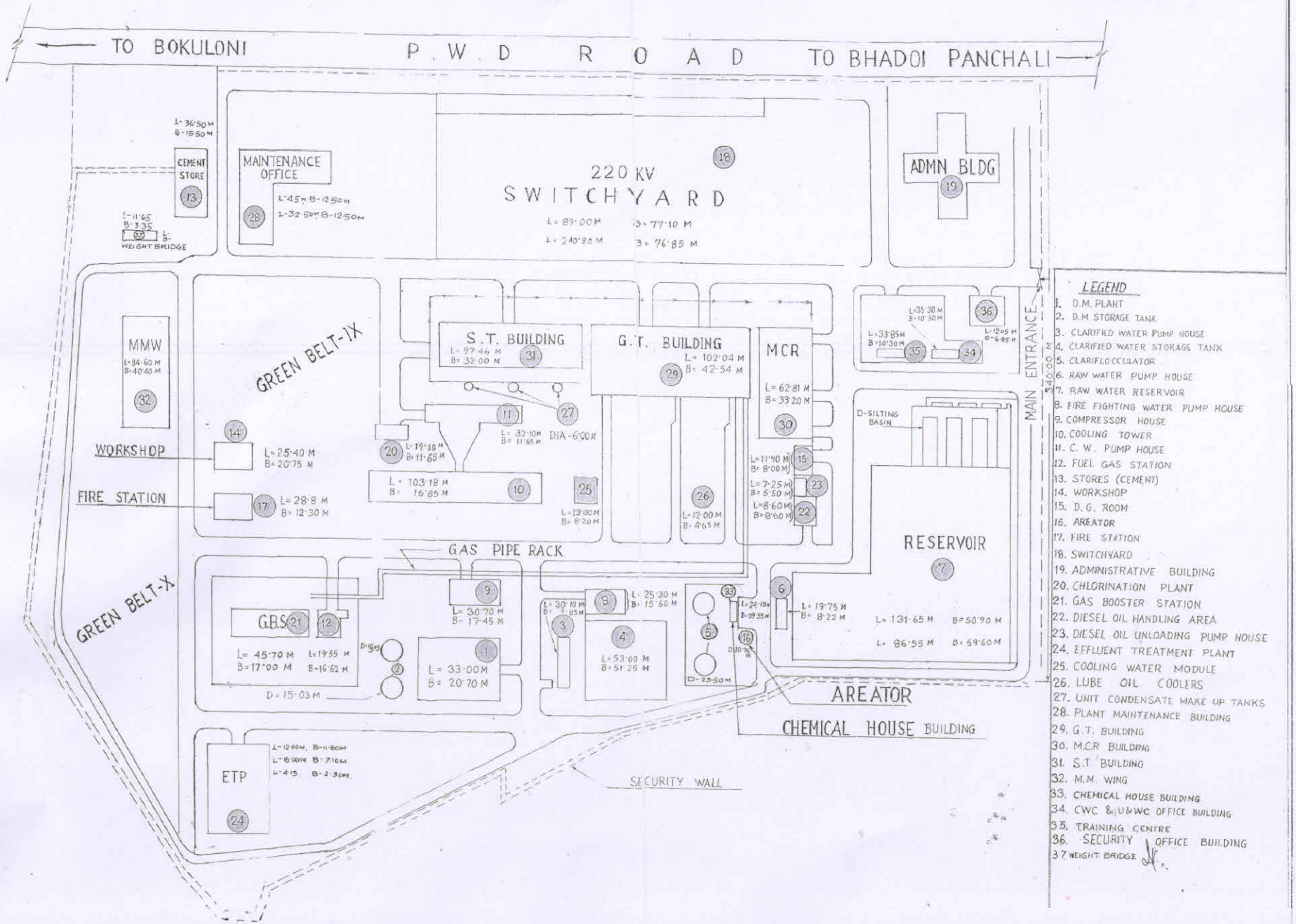
LAYOUT PLAN OF COLONY AREA

ASSAM GAS BASED POWER PLANT



प्रबंधक (वि)
Manager (C)

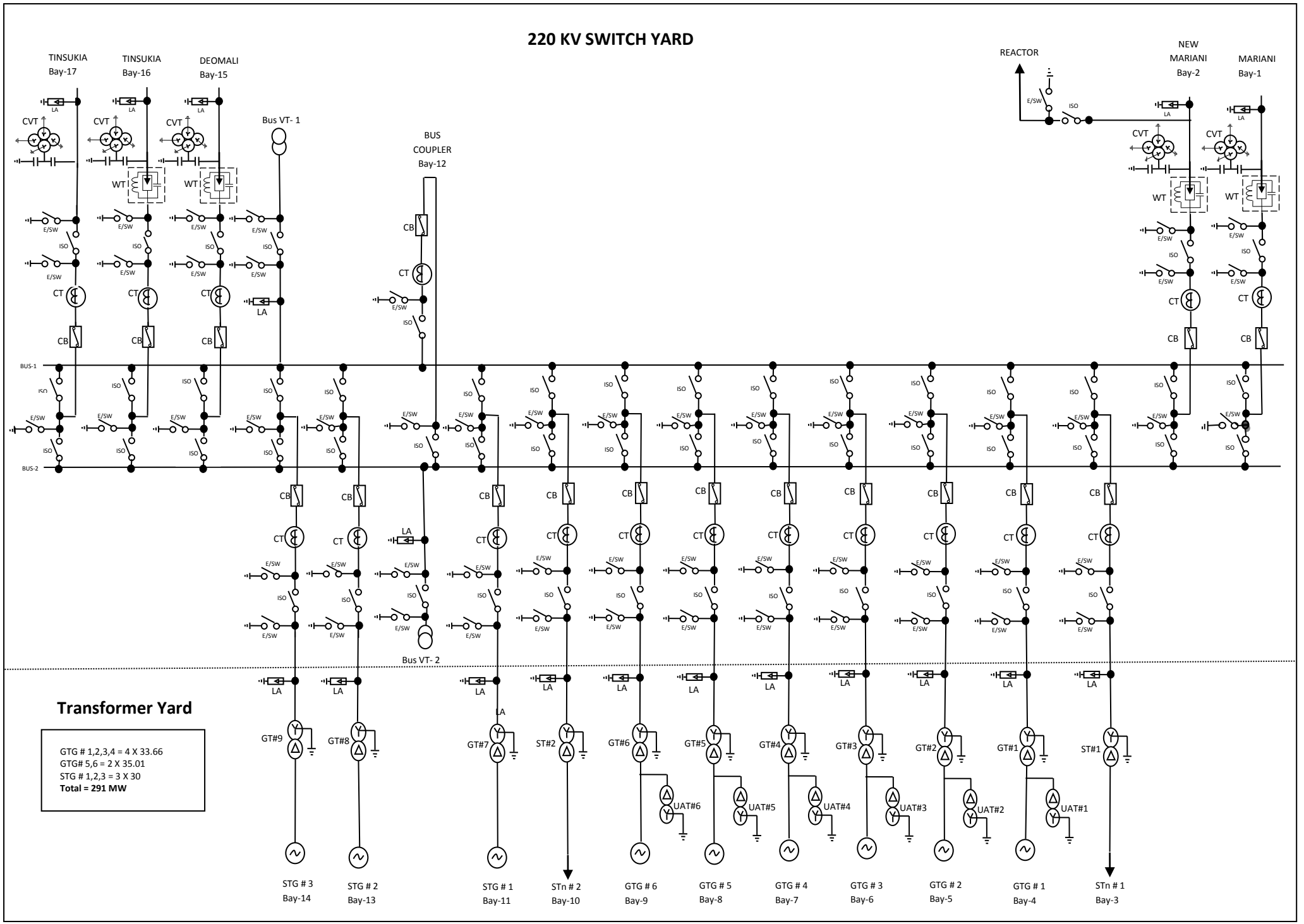
LAYOUT PLAN OF CIVIL WORK AND BUILT-UP AREA (PLANT AREA)
AGBP



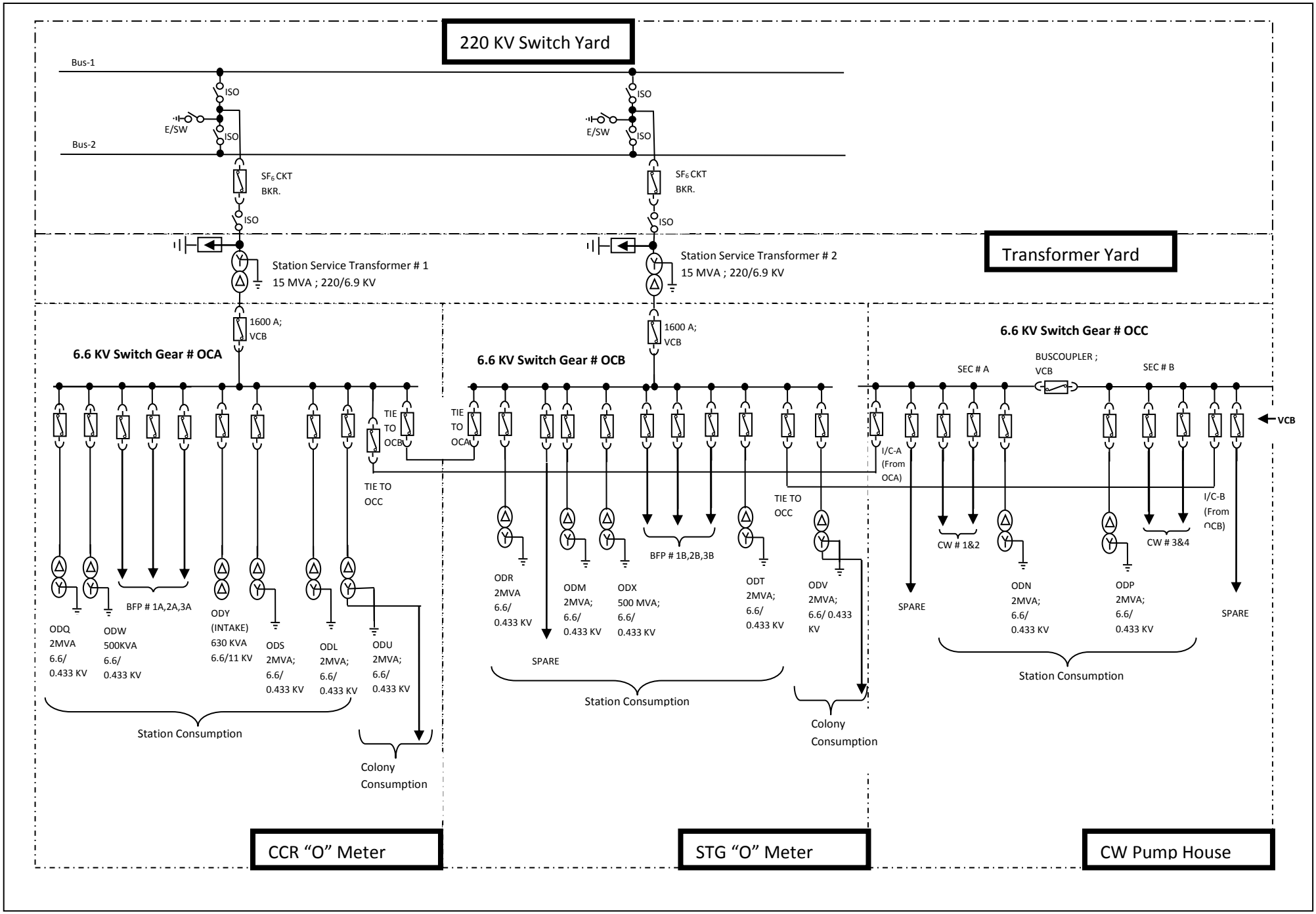
LEGEND

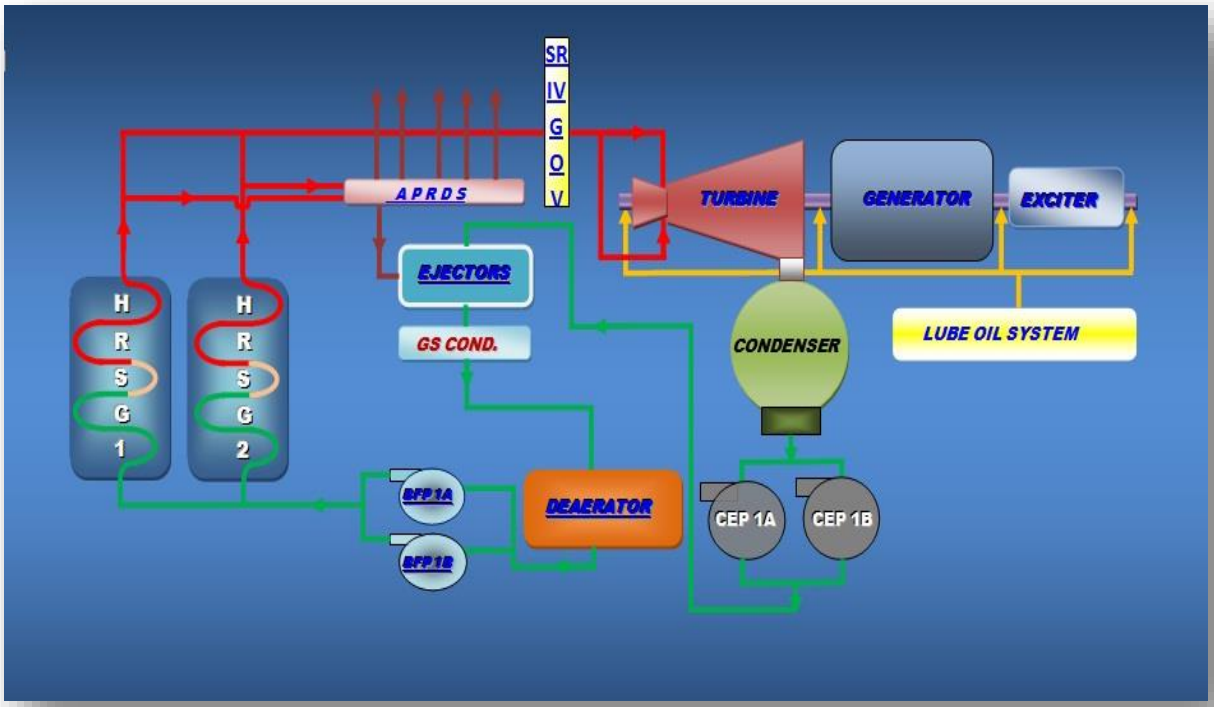
1. D.M. PLANT
2. D.M STORAGE TANK
3. CLARIFIED WATER PUMP HOUSE
4. CLARIFIED WATER STORAGE TANK
5. CLARIFLOCCULATOR
6. RAW WATER PUMP HOUSE
7. RAW WATER RESERVOIR
8. FIRE FIGHTING WATER PUMP HOUSE
9. COMPRESSOR HOUSE
10. COOLING TOWER
11. C. W. PUMP HOUSE
12. FUEL GAS STATION
13. STORES (CEMENT)
14. WORKSHOP
15. D. G. ROOM
16. AREATOR
17. FIRE STATION
18. SWITCHYARD
19. ADMINISTRATIVE BUILDING
20. CHLORINATION PLANT
21. GAS BOOSTER STATION
22. DIESEL OIL HANDLING AREA
23. DIESEL OIL UNLOADING PUMP HOUSE
24. EFFLUENT TREATMENT PLANT
25. COOLING WATER MODULE
26. LUBE OIL COOLERS
27. UNIT CONDENSATE MAKE UP TANKS
28. PLANT MAINTENANCE BUILDING
29. G.T. BUILDING
30. M.C.R BUILDING
31. S.T BUILDING
32. M.M. WING
33. CHEMICAL HOUSE BUILDING
34. CWC & U&WC OFFICE BUILDING
35. TRAINING CENTRE
36. SECURITY OFFICE BUILDING
37. WEIGHT BRIDGE

Single Line Diagram of 220 KV Switch yard

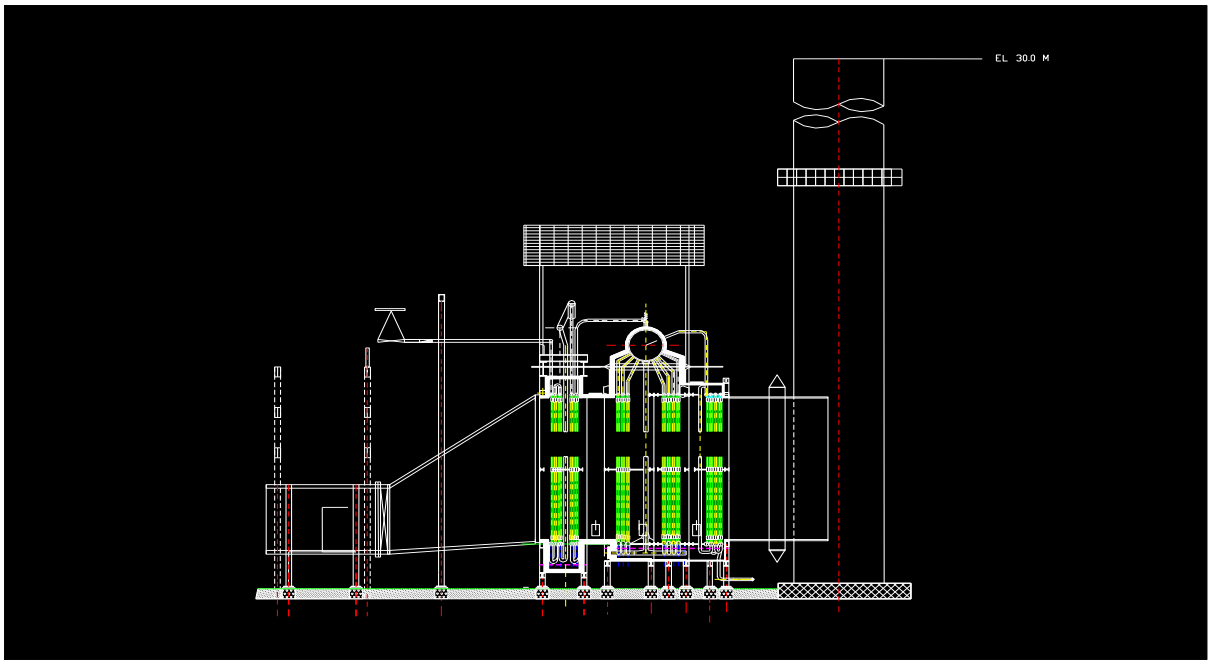


Single Line Diagram of Station & colony consumption



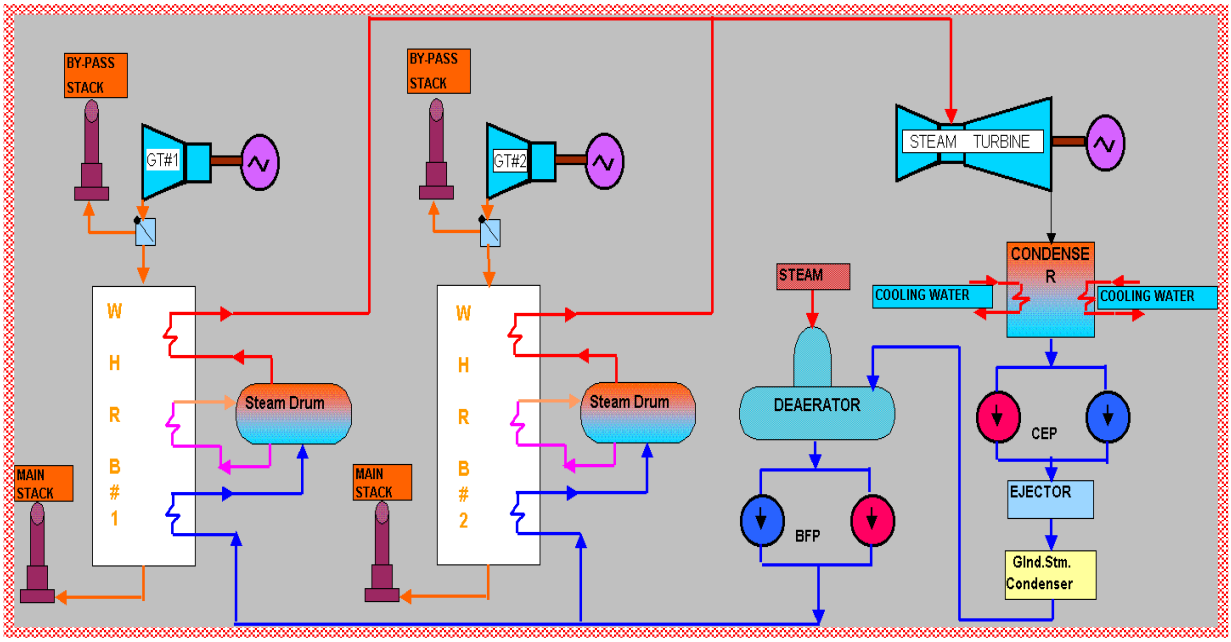


Schematic of ST



The Boiler

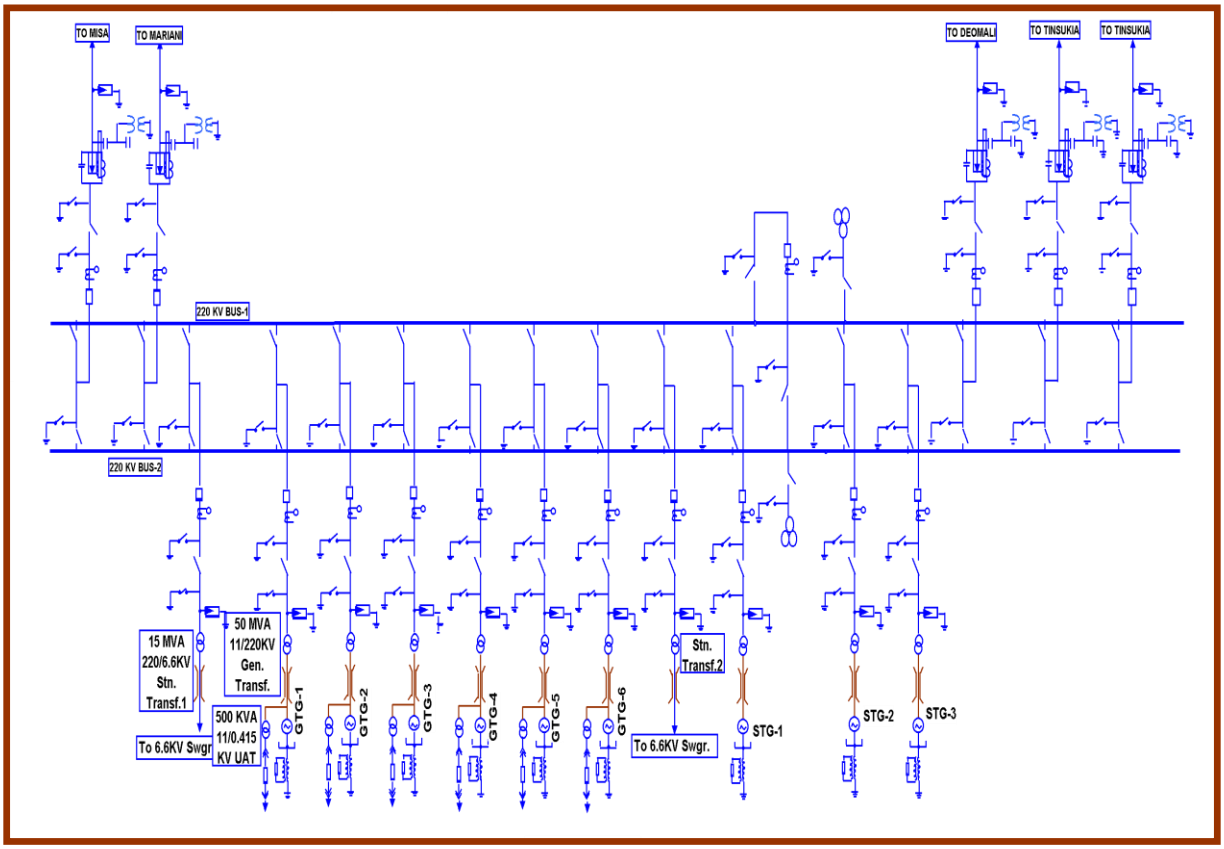
A view of the Cooling Towers



COMBINED CYCLE MODULE OVERVIEW (AGBP)

GENERATOR UNITS	RATING	MAKE	MODULE OUTPUT AT BASE LOAD
GAS TURBINE GENERATOR # 1	33.5 MW	MITSUBSHI HEAVY INDUSTRIES, JAPAN	97 MW
GAS TURBINE GENERATOR # 2	33.5 MW	MITSUBSHI HEAVY INDUSTRIES, JAPAN	
STEAM TURBINE GENERATOR # 1	30 MW	BHEL , INDIA	
GAS TURBINE GENERATOR # 3	33.5 MW	MITSUBSHI HEAVY INDUSTRIES, JAPAN	97 MW
GAS TURBINE GENERATOR # 4	33.5 MW	MITSUBSHI HEAVY INDUSTRIES, JAPAN	
STEAM TURBINE GENERATOR # 2	30 MW	BHEL , INDIA	
GAS TURBINE GENERATOR # 5	33.5 MW	BHEL , INDIA	97 MW
GAS TURBINE GENERATOR # 6	33.5 MW	BHEL , INDIA	
STEAM TURBINE GENERATOR # 3	30 MW	BHEL , INDIA	
TOTAL INSTALLED CAPACITY			*291 MW*

MAIN & BY-PASS STACK



Single line diagram of 220 KV Switchyard

RAW WATER RESERVOIR

CENTRAL CONTROL ROOM

220 KV Swiutchyard