

GENERAL ELECTRIC MANUFACTURING COMPANY LTD.

(AN ENTERPRISE OF BANGLADESH STEEL & ENGINEERING CORPORATION)
NORTH PATENGA, CHITTAGONG-4204



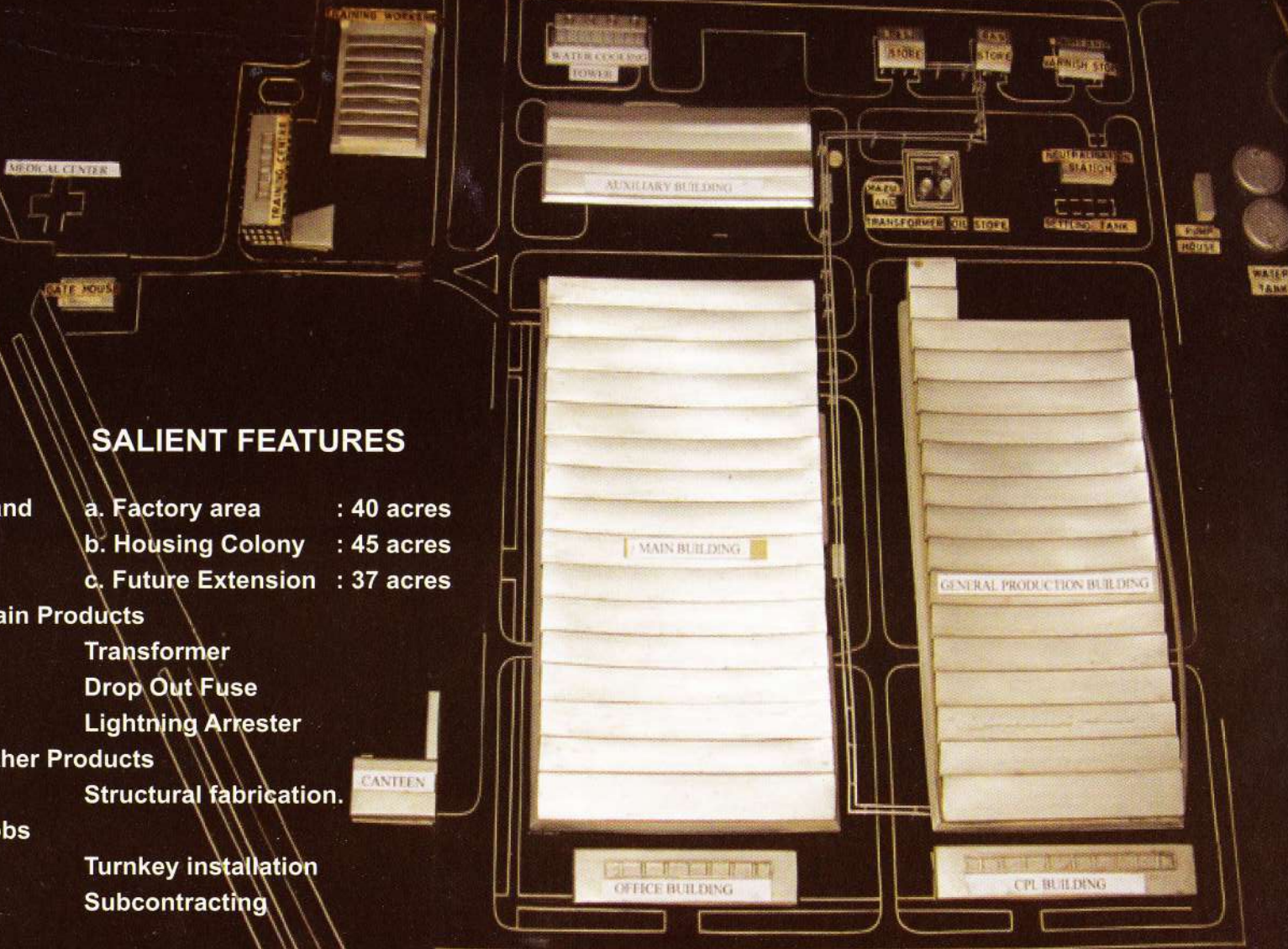
Introduction

Electricity is an index of civilized nation and a necessity on the day to day life of the people. National development of a country is judged by the quantum and amount of electricity it produces and consumes. The Government has taken effective plans to spread electrical network to all corners of the country with a view to developing infrastructure as well as building up and improving the rural economy.

In order to achieve the above objectives the scheme of establishment of a heavy electrical complex in the name of General Electric Manufacturing Plant at North Patenga, Chittagong was formally and finally approved by the Government of Bangladesh in 1976, An enterprise of Bangladesh Steel & Engineering Corporation, it was emerged as a public limited company in 1979 and renamed General Electric Manufacturing Company Limited popularly known as GEMCO. It is today the largest engineering and manufacturing enterprise of its kind in Bangladesh.

GEMCO is now manufacturing and supplying a major portion of Electrical Distribution equipments required by the power sector of the country. In present open and free market scenario its products have been established as highly reliable and competitive with international manufacturers.

GEMCO has already stamped its mark significantly cantly through its products and services by maintaining highest degree of quality and technical standard. A vast reservoir of manufacturing skills and management - the GEMCO family comprises a formidable team of engineers, managers and trained technicians. Together they are able to offer high quality products and services with professional excellence.



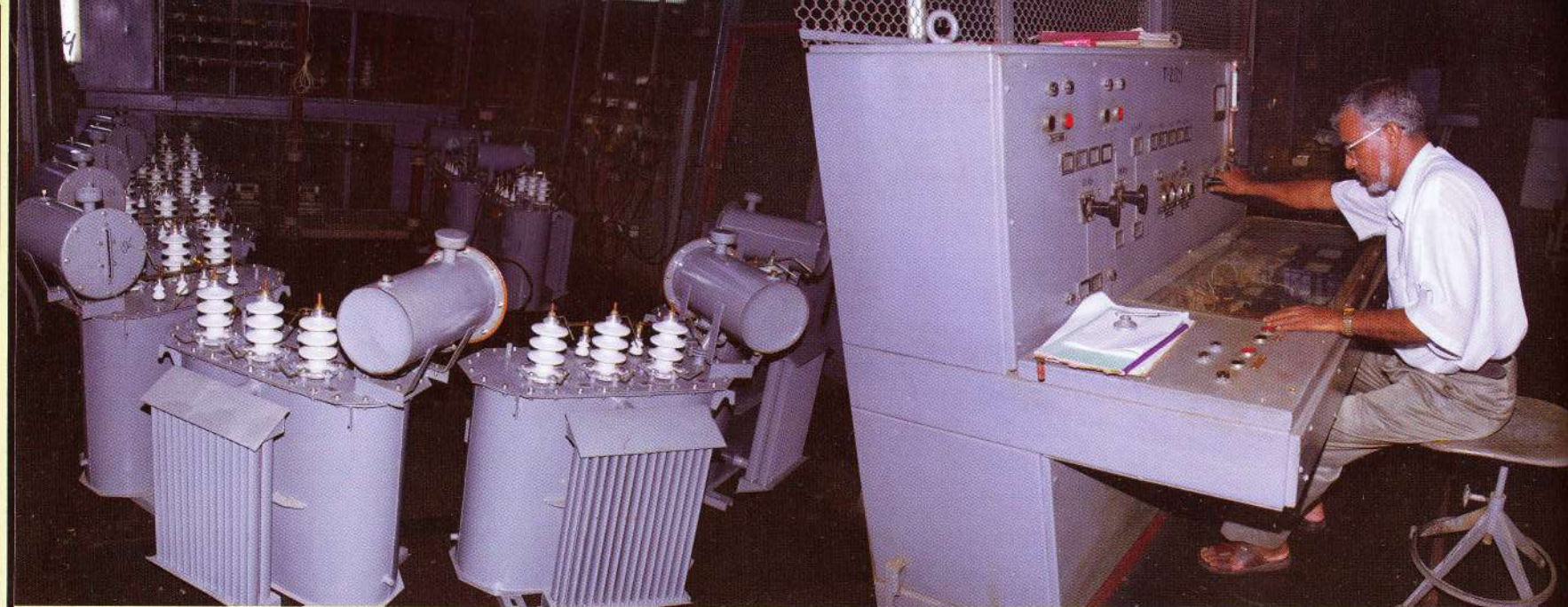
SALIENT FEATURES

- A. Land
 - a. Factory area : 40 acres
 - b. Housing Colony : 45 acres
 - c. Future Extension : 37 acres
- B. Main Products
 - Transformer
 - Drop Out Fuse
 - Lightning Arrester
- C. Other Products
 - Structural fabrication.
- D. Jobs
 - Turnkey installation
 - Subcontracting

FACTORY FACILITIES



Machining	Turning Cylindrical Grinding Surface Grinding Heavy planing Shaping
Gear	Gear Hobbing Gear Milling
Heat Treatment	Carborizing Hardening Tempering Annealing
Surface preparation for painting	Mechanical Chemical
Painting	Spray Painting
Drying	Stove Natural
Tools, Jigs and Fixtures	Die making & repairing Jig making Fixture making
Welding	Arc, Gas, Mig
Bending	Angle, Channel fabrication, Sheet rolling
Press	All sorts of press work
Shear	Shearing up to 12mm thick sheet metal
Cutting	Gas



LABORATORY FACILITIES

Electrical Insulation Lab

Test of insulating strength of liquid and solid insulating materials
Determination of specific resistivity of electrical conductor
Measurement of DC resistance (1 to 999900 Ohm)

Mechanical Lab

Measurement of tensile strength, compression, strength, elongation.
Test for elasticity, oil resistance, density and hardness of rubber and rubber products

Chemical Lab

Test for viscosity, acid number, flash point of transformer oil/lubricating oil

Test of paints

Stoving enamel, synthetic enamel, oil resistant

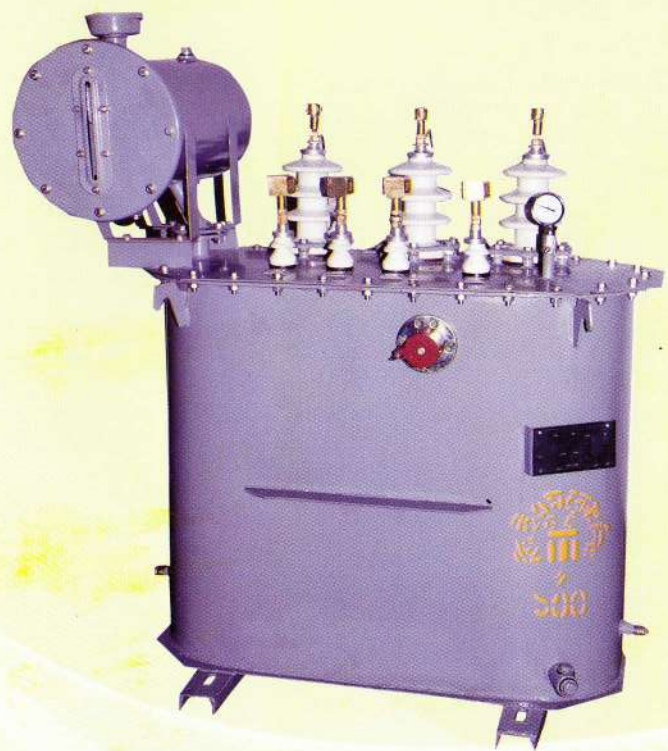
TESTING FACILITIES

Testing Facilities for both Distribution and Power Transformer upto 10 MVA & 33KV system voltage

TRAINING FACILITIES

Industrial (Training) attachment programmes for Graduate/Diploma Engg. Students and for TTC students.
In house Training Programme for GEMCO's employees.

TRANSFORMERS



1. Designed for Transmission & Distribution of a.c. electric power of frequency 50Hz, 3-phase.
2. Intended for continuous duty in damp tropical climate under conditions:
 - a. ambient air temperature from -10⁰C to 50⁰C
 - b. relative humidity not over 98% at 35⁰C
 - c. altitude not over 1000 metre above sea level
 - d. explosion-proof medium free of vapour & gases damaging protecting coating of the transformers as well as dust in concentrations impermissibly affecting the equipment.
3. Allowable overheating (above ambient temperature)
 - For windings - 65⁰C
 - For top oil - 60⁰C
4. Intended for operation in both outdoor & indoor installations:
 - a. in open air
 - b. in rooms with temperature and humidity fluctuations significantly different from those in the open air.
 - c. in closed rooms with natural ventilation providing significant decrease in solar radiation, wind, atmospheric precipitation effect, dew absence.
 - d. in premises with artificially regulated climatic conditions providing protection against direct effect of atmospheric precipitation and wind as well as sand and dust of the ambient (in ventilated industrial or other room).
 - e. cooling system is ONAN (Oil Natural Air Natural)
5. Permissible overload:

at an ambient temperature over 50⁰C

 - 30% for 2 hours, 45% for 80 minutes
 - 60% for 45 minutes & 100% for 10 minutes.

At the ambient temperature over 50⁰C (but not over 55⁰C) the transformer rated power should be reduced by 1.5% per ⁰C. In this case power is calculated from the formula:

$$P = P_H \frac{175 - 1.5t}{100}$$

Where PH is the rated power, t is the ambient temperature

SPECIFICATION OF THREE PHASE DISTRIBUTION TRANSFORMER



- | | |
|--------------------------------------|---|
| 1. Voltage Rating: | |
| a. HV Winding | 11KV |
| b. LV Winding | 0.415KV |
| 2. No. Of Phase | Three |
| 3. Vector Group | Dyn-11 |
| 4. Tap Changer | +1 X 2.5%, 0, -3 X 2.5% |
| 5. Frequency | 50Hz |
| 6. Duty | Continuous |
| 7. Cooling System | ONAN (Oil Natural Air Natural) |
| 8. Basi Insulation Level | 75KV |
| 9. Temp Rise (Above Ambient): | |
| a. For Winding | 65 ⁰ c |
| b. For Top Oil | 60 ⁰ c |
| 10. Standard | Iec60076 |
| 11. Mounting | Out Door/indoor Not Over 1000m
Above Sea Level |
| Power Rating | 500/300/250/200/100/50KVA |

Also in accordance with the desire & requirement of the customer

SPECIFICATION OF SINGLE PHASE DISTRIBUTION TRANSFORMER



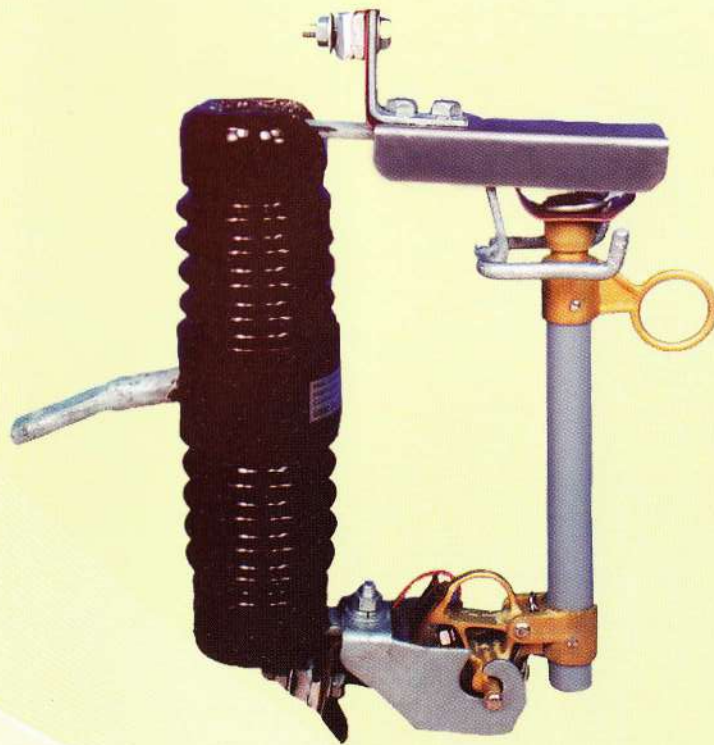
1. **Voltage Rating:**
 - a. HV Winding 6.35, 11KV
 - b. LV Winding 0.24KV
 2. **No. Of Phase** Single
 3. **Vector Group** I/i-0
 4. **Frequency** 50Hz
 5. **Duty** Continuous
 6. **Cooling System** ONAN (Oil Natural Air Natural)
 7. **Basi Insulation Level** 95KV
 8. **Temp Rise (Above Ambient):**
 - a. For Winding 65⁰C
 - b. For Top Oil 60⁰C
 9. **Standard** IEC 60076
 10. **Mounting** Out Door/indoor Not Over 1000m Above Sea Level
- Power Rating 25/15/10/5KVA

SPECIFICATION OF LIGHTNING ARRESTER 11 KV



- **Construction** : Single unit, basically consisting of gapless hermetically sealed in with non-linear characteristics with high energy capacity, all enclosed in porcelain housing.
- **Application** : Protection of Distribution transformer
- **Type of Arrester** : Metal Oxide (ZnO) Gapless
- **Installation** : Outdoor cross arm angle/channel/structure mounted.
- **Mounting** : Pole Mounted steel bracket
- **Nominal system Voltage** : 11KV
- **Maximum system Voltage** : 12KV
- **System frequency** : 50Hz
- **Rated Arrester Voltage** : 10.5KV (rms)
- **Maximum Continuous Operating Voltage** : 8.4KV (rms)
- **Rated Arrester Current** : 5KA
- **Power frequency withstand voltage** : 28KV
- **Standard** : Performance, Design & Testing are in accordance to IEC-99-4.

SPECIFICATION OF DROP OUT FUSE CUT-OUT 11KV, 100A



- **Installation** : Outdoor mounted on cross-arm angle/channel structure
- **Application** : Protection of Distribution Transformer.
- **Type** : Open drop out expulsion
- **Nominal Rated Voltage** : 11KV
- **Maximum System Voltage** : 12KV
- **Frequency** : 50Hz
- **Continuous Current Rating** : 100A
- **Basic Insulation Level** : 75KV (To earth and between poles)
- **Power Frequency Withstand Voltage** : 35KV (To earth and between poles)
- **Fuse Link Continuous Ratings** : As per Customer's requirements.
- **Rated Interrupting Capacity** : 8 KA (rms)
- **Standard** : Design, Manufacture, Testing and performance are in accordance with IEC 282-2.

PRODUCT VIEW



PROCESS VIEW



TECHNICAL SPECIFICATION

Capacity (KVA)	Losses (watt)		Imp (%)	Regulation at unity power factor (%)	Efficiency at Unity Power factor (%)	Out line Dimension Approx (mm)			Oil (Kg)	Total Weight (kg)
	No Load	Load at 75°C		af P.F=1		H	L	W		

6350/240V, 1-PHASE TRANSFORMER

5	40	100	2.5	2.0	99.91	650	400	450	24.0	104.0
10	50	220	3.8	2.2	99.93	795	500	540	32.0	170.0
15	90	250	3.96	1.67	99.93	795	500	540	32.0	170.0

11000/240V, 1-PHASE TRANSFORMER

15	80	350	3.0	1.92	99.98	856	580	570	32.0	175.0
25	120	480	3.8	1.92	99.98	990	690	580	39.0	280

11000/415V, 3-PHASE TRANSFORMER

50	190	1100	4.0	2.20	97.45	1300	11000	640	148.0	480.0
100	245	1635	4.0	1.63	98.47	1325	1150	725	182.0	660.0
200	435	2820	4.0	1.52	98.38	1530	1200	900	244.0	985.0
250	520	3180	4.0	1.76	98.52	1530	1200	900	244.0	1100.0
300	650	4500	4.00	1.50	98.98	1600	1275	950	390.0	1450.0
500	1000	6200	6.36	1.24	98.988	1930	1510	1055	550.0	2100.0

