



GEI-97992

## TURBINE DESIGN DATA

Turbine rating, KW.....	15,625
Steam pressure, psig.....	950
Steam temperature, FTT.....	900
Back pressure, psig.....	40
Rated speed (design speed as specified on turbine nameplate), rpm.....	3600
High-speed point or pre-emergency speed (setting of the high- speed stop on the synchronizing device, and the point at which the Number 1 valve in the order-of-opening sequence will be closed to its cracking point by the speed governor), rpm.....	3870
Tripping speed (speed at which the emergency governor trips the throttle valve closed), rpm.....	3960

MEDIUM STEAM TURBINE  
GENERATOR AND GEAR DEPARTMENT

GENERAL  ELECTRIC

WEST LYNN, MASS.

June 1965

**STEAM TEMPERATURE AND PRESSURE SPECIFICATIONS FOR  
NONREHEAT STEAM TURBINE  
Allowable Pressure and Temperature Variations**

Rated Pressure .....950.....psi gage

Rated Temp. ....900.....F TT

**BASIS OF CALCULATIONS**

Steam performance data in this proposal are based on Keenan and Keyes Steam Table (1936).

**ALLOWABLE PRESSURE AND TEMPERATURE VARIATIONS—GENERAL**

The following allowable pressure and temperature variations are intended to provide for unexpected irregularities during operation and it is expected that steps will be taken to minimize their occurrence, and especially their simultaneous occurrence.

**ALLOWABLE INITIAL PRESSURE VARIATIONS**

The pressure at the turbine main steam valve shall be controlled so that it does not exceed 105 per cent of rated pressure. During abnormal conditions the pressure may exceed rated pressure briefly by as much as 20 per cent but the aggregate duration of such brief swings beyond 105 per cent of rated pressure shall not exceed 12 hours per 12-month operating period.

**ALLOWABLE INITIAL TEMPERATURE VARIATIONS**

The steam temperature at the turbine main steam valve shall average not more than rated temperature over any 12-month operating period. In maintaining this 12-month average, the temperature shall not exceed rated temperature by more than 15 F except during abnormal conditions resulting in temperatures not in excess of rated temperature by more than 25 F for operating periods not more than 400 hours per 12-month operating period nor 50 F above rated temperature for swings of 15 minutes' duration or less, aggregating not more than 80 hours per 12-month operating period.

In maintaining the temperature specified in the preceding paragraph, differences between different steam leads feeding a common valve casing or common turbine shell are not to exceed 20 F, except that during abnormal conditions it is acceptable to operate with temperature differences not in excess of 75 F for periods aggregating not more than 400 hours per 12-month operating period.

15.625 KW  
950 Psig-900°FT-40 Psig  
A.E. @ 150 Psig



Extraction Enthalpy, Btu/#

1330  
1360  
1340  
1320  
1300  
1280

Throttle Flow, in 1000#/Hr.

50 100 150 200 250 300 350

Enthalpy Drop  
Extraction To Exhaust

90  
80  
70  
60  
50  
40  
30  
20  
10  
0

1330  
1310  
1290

Figures on curves are  
extraction enthalpy  
in Btu/#.

Exhaust Flow, in 1000#/Hr.

0 50 100 150 200 250



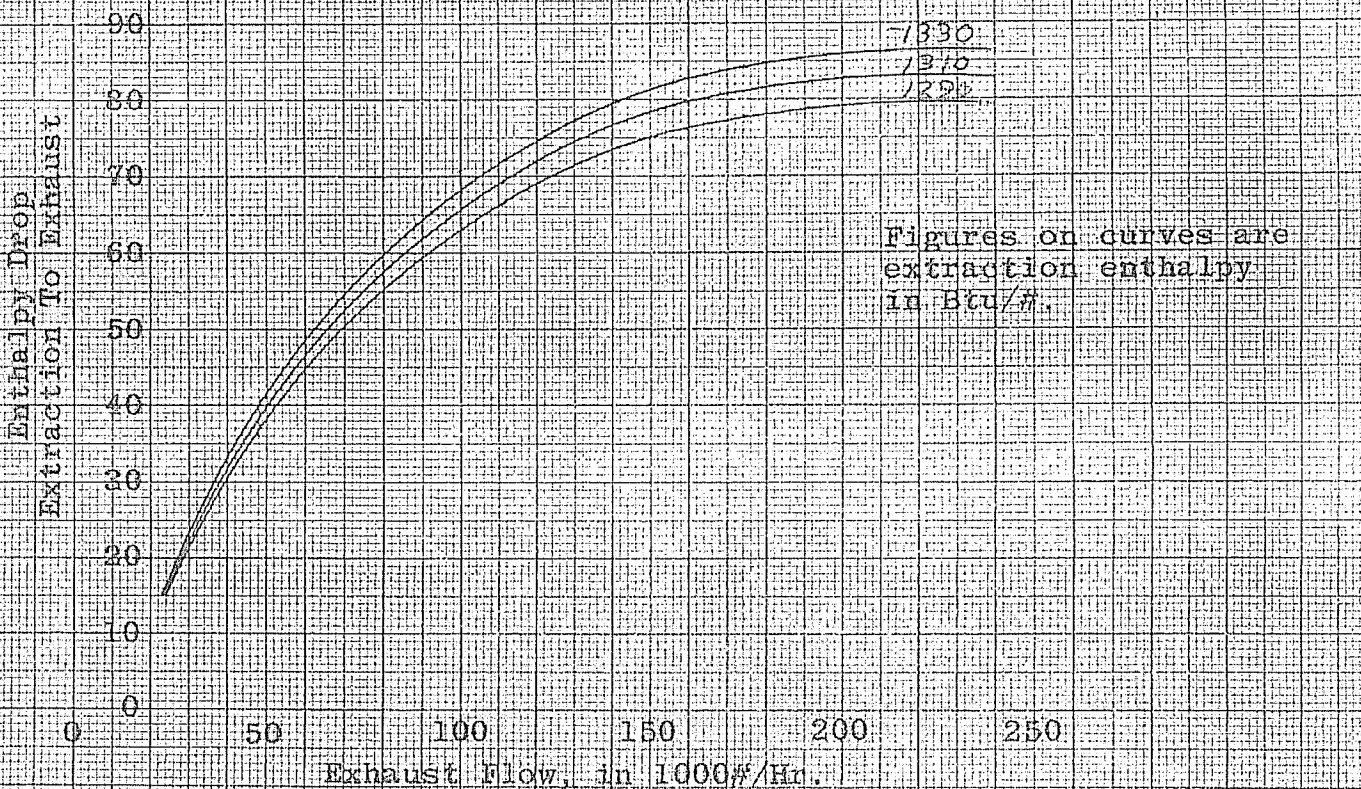
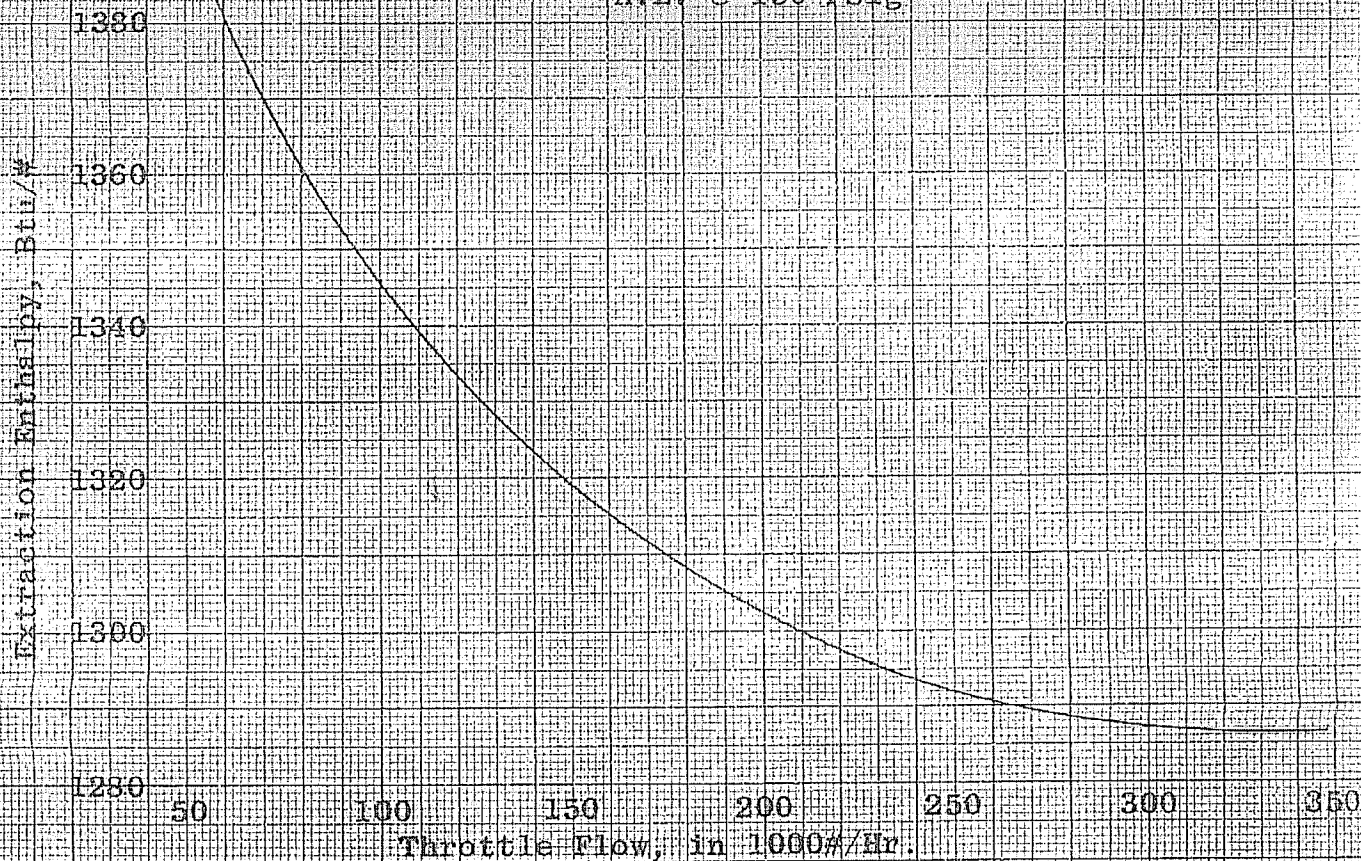
10-120 (8-2)

GENERAL ELECTRIC COMPANY, WATKINSVILLE, N. Y. U.S.A.

10-120 (8-2) Division

LTSD-1285D-2

15,625 KW  
950 Psig-900°FTT-40 Psig  
A.E. @ 150 Psig



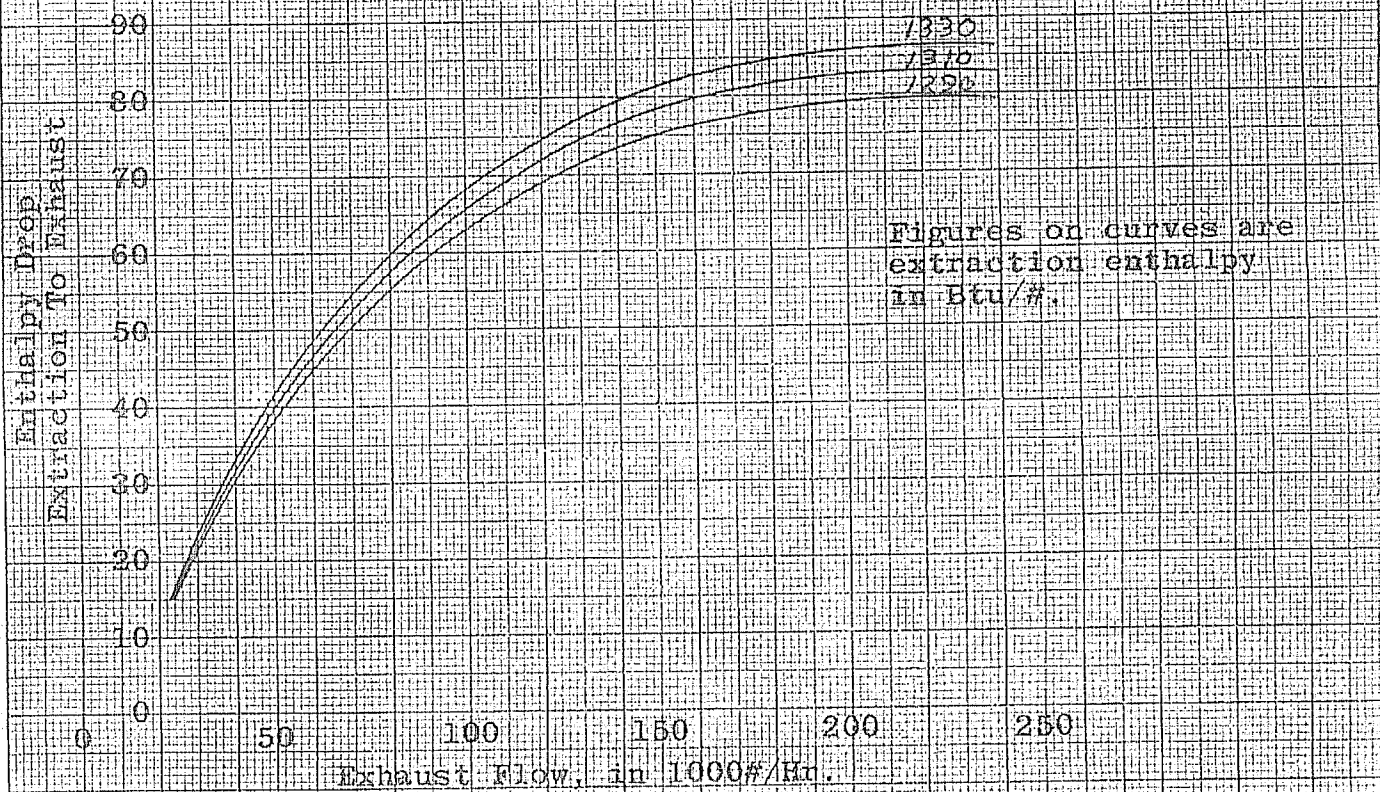
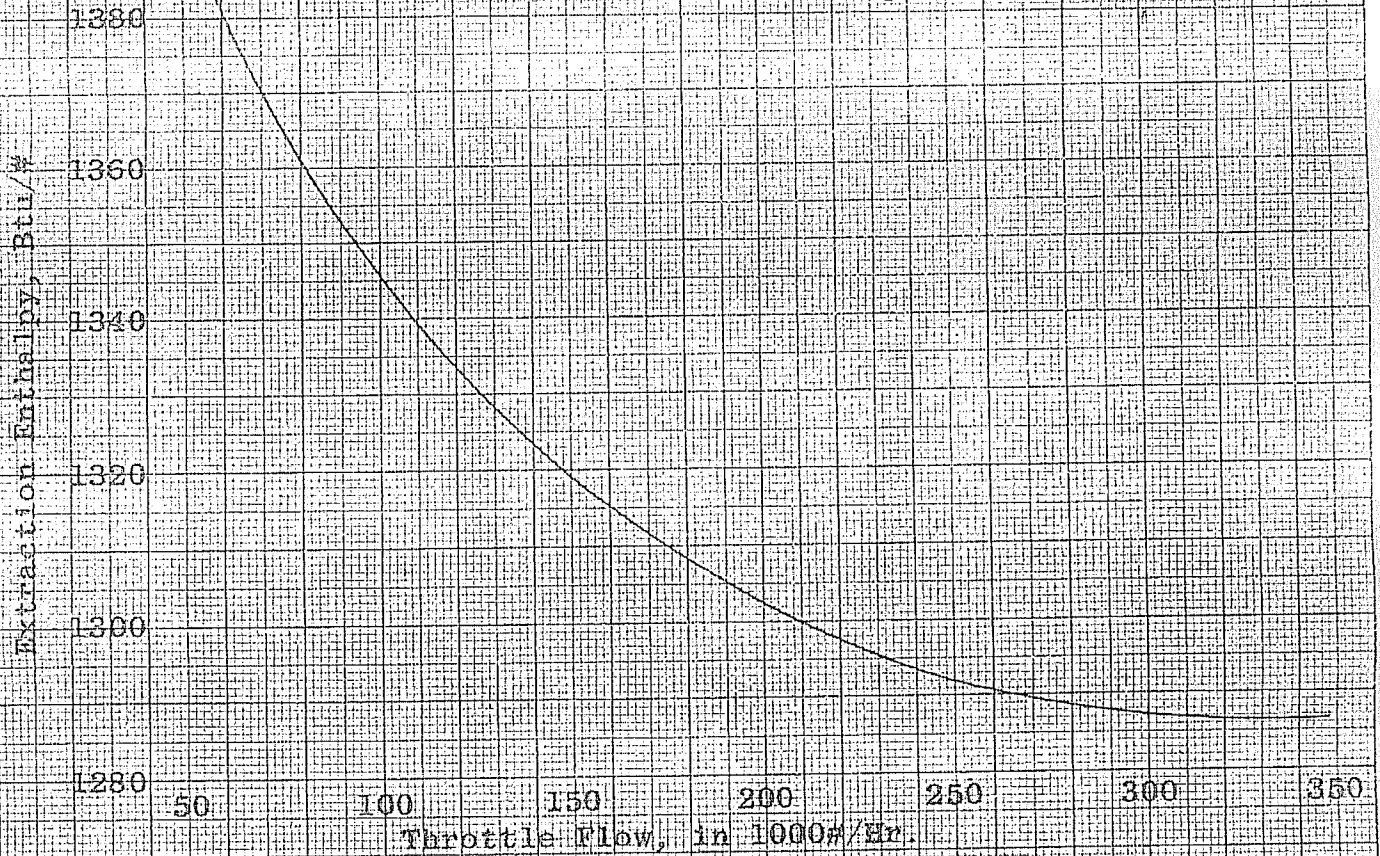
A.H. 8/21/67

K-1078421-173272-2

ISSUED 8-21-67-153

LTSD-1285D-2

15,625 KW  
950 Psig-900°FTT-40 Psig  
A.E. @ 150 Psig



Figures on curves are  
extraction enthalpy  
in Btu/#.

A.E. 8/21/87

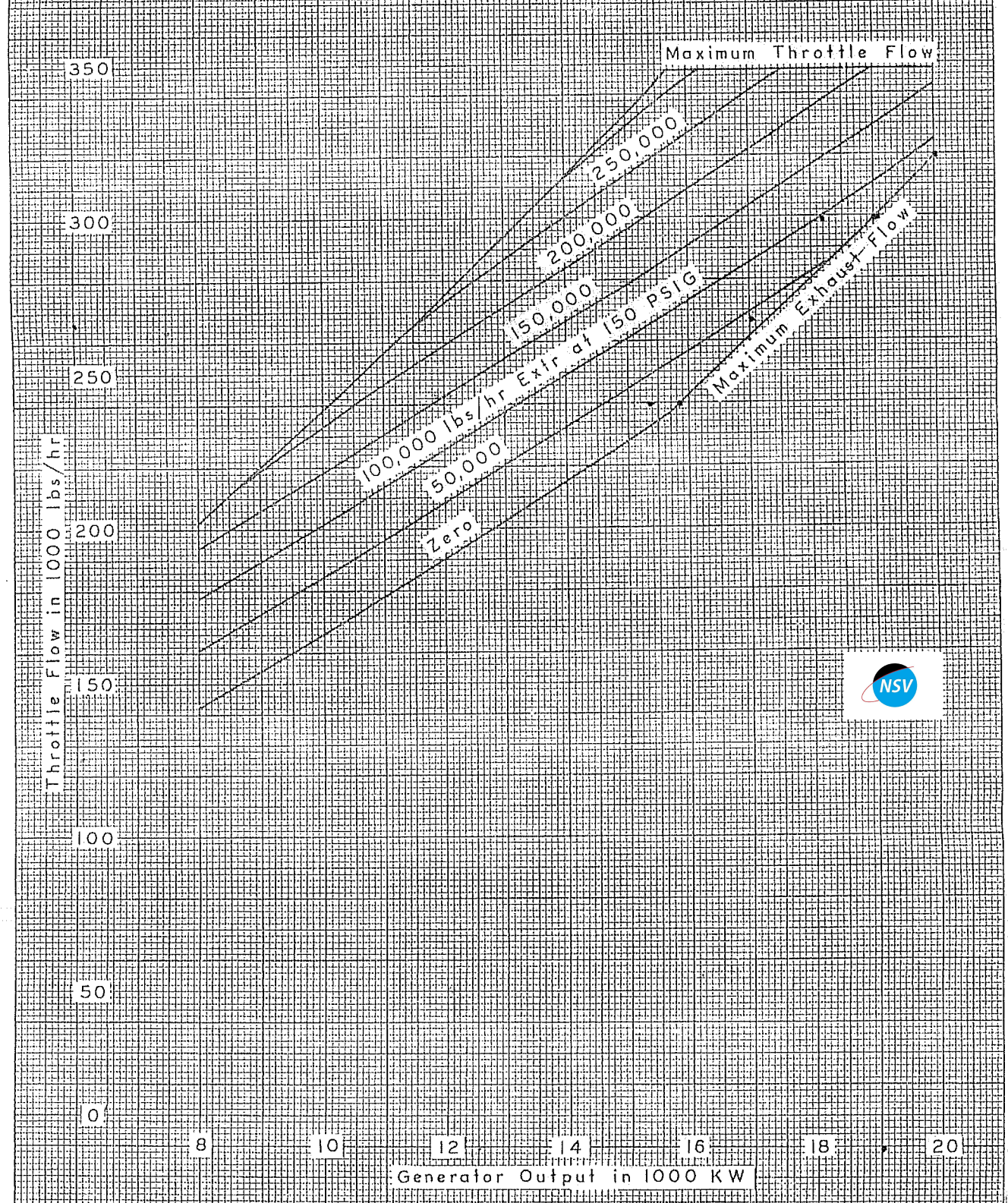
K-1078421-173272-2



19,000 KVA F. Load

15,625 KW  
950 PSIG-900° FTT- 40 PSIG  
A.E. at 150 PSIG

Note: Copied from K-1078471-173272-1



2129715

## GENERATOR DESIGN DATA

### NAMEPLATE DATA

ATB-2 Poles, 60 Cycles, WYE Connected for 13,800 Volts, Excitation 250 Volts  
 Temperature Rise at Rated Load Guaranteed not to Exceed;  
 60°C on Stator Winding by Detector 85°C on Field by Resistance.

#### Rating

KVA	24,063
Stator Amperes	1007
Field Amperes	307
Power Factor	0.8

### GENERATOR DATA

Inlet Air Temperature.....40°C  
 No Load Field Current.....137 Amperes  
 Armature Capacitance to Ground (per phase).....0.08 Microfarads  
 Armature Winding Resistance (per phase).....0.0139 Ohms at 25°C  
 Field Winding Resistance.....0.502 Ohms at 25°C

### AIR COOLER DATA

Inlet Water Temperature.....70°F  
 Water Flow at Rated Load.....210 GPM  
 Head Loss Through Cooler.....6.1 Feet  
 Gas Flow Through Generator.....40,000 CFM

### BRUSH DATA

Number: 14 Recommended Grade: J-600  
 If brushes spark or chatter, refer to: GEI-74536

MEDIUM STEAM TURBINE  
 GENERATOR AND GEAR DEPARTMENT

GENERAL  ELECTRIC

WEST LYNN, MASS.

June 1965

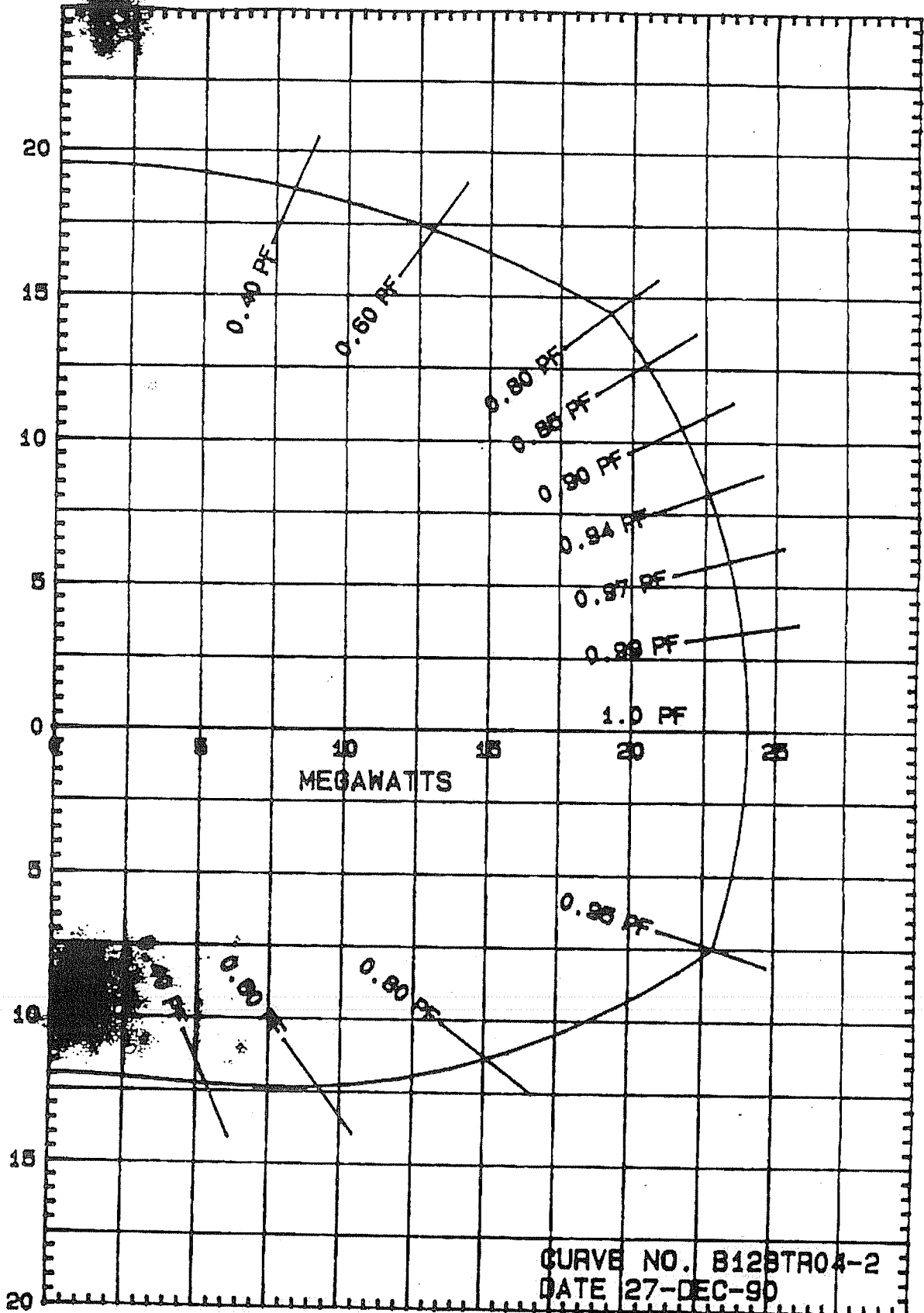
# ESTIMATED REACTIVE CAPABILITY CURVES

24083 KVA - 3600 RPM - 13800 VOLTS - 0.80 PF

0.87 SCR - 0 FT ALT - 250 FLD VOLTS

GENERAL ELECTRIC

LEAD ← MEGAVARS → LAG

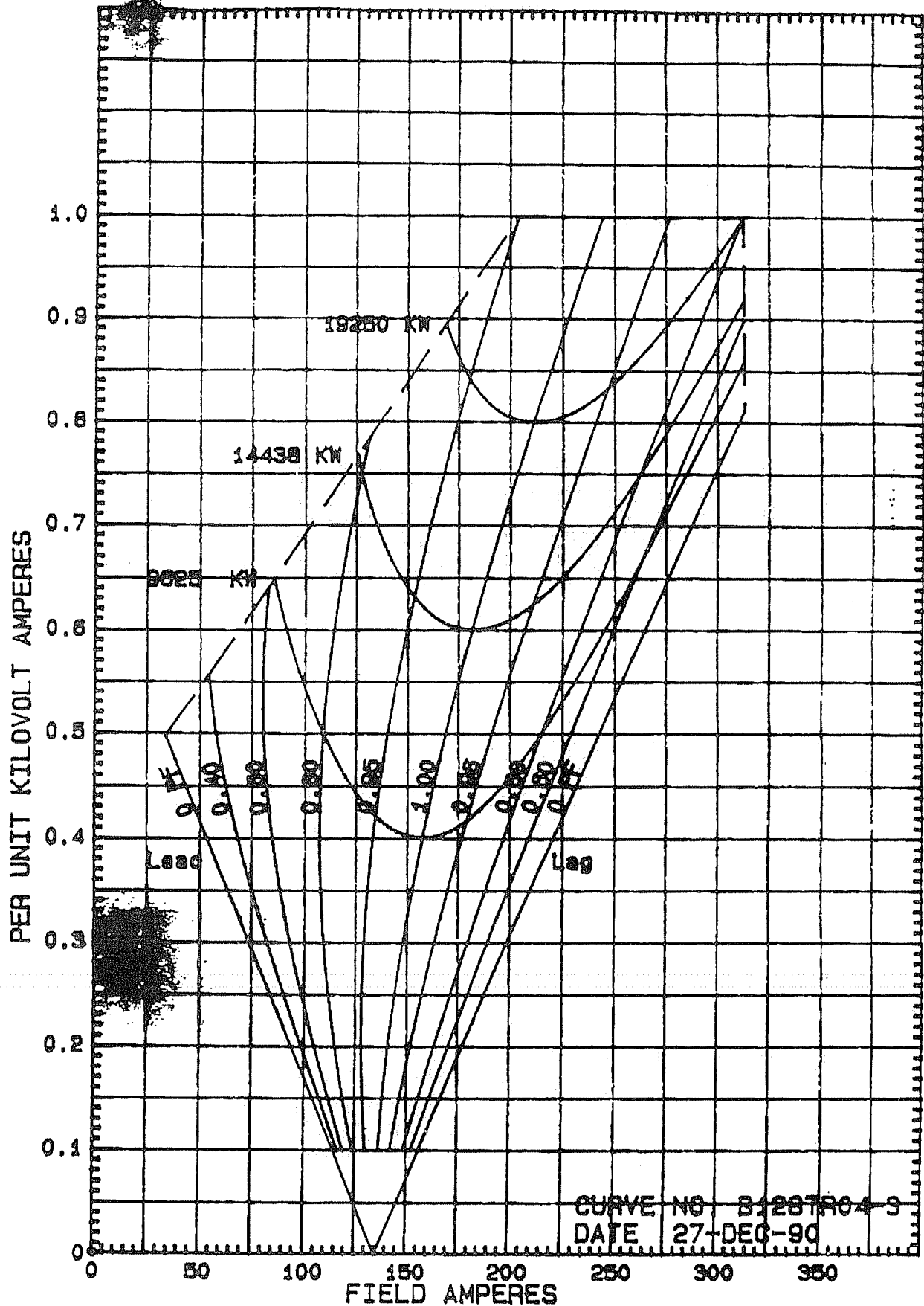




# ESTIMATED EXCITATION V CURVES

24063 KVA - 3600 RPM - 13800 VOLTS - 0.80 PF  
0.67 SCR - 0 FT ALT - 250 FLD VOLTS

GENERAL ELECTRIC



ESTIMATED SATURATION AND SYNCHRONOUS IMPEDANCE CURVES  
 24069 KVA - 3600 RPM - 13800 VOLTS - 0.80 PF  
 0.67 SCR - 0 FT ALT - 250 FLD VOLTS

GENERAL ELECTRIC

