

# General Electric Model PG7121EA Gas Turbine

## Estimated Performance - Configuration: DLN Combustor

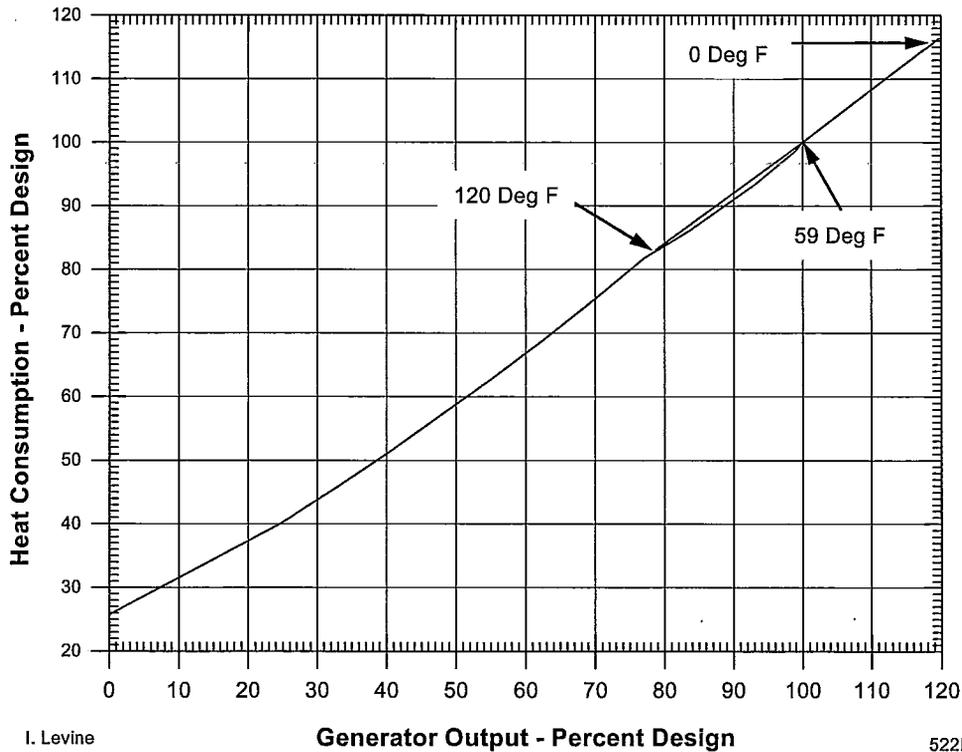
Compressor Inlet Conditions 59 F (15 C), 60% Relative Humidity  
 Atmospheric Pressure 14.7 psia (1.013 bar)

Fuel:		Natural Gas	Distillate
Design Output	kW	84360	82890
Design Heat Rate (LHV)	Btu/kWh (kJ/kWh)	10480 (11050)	10570 (11150)
Design Heat Cons (LHV)	Btu/h (kJ/h)x10 <sup>6</sup>	884.1 (932.5)	876.1 (924.2)
Design Exhaust Flow	lb/h (kg/h)x10 <sup>3</sup>	2361 (1071)	2368 (1074)
Exhaust Temperature	deg. F (deg. C)	998 (536.7)	999 (537.2)
Load		Base	Base

**Notes:**

- Altitude correction on curve 416HA662 Rev A.
- Ambient temperature correction on curve 522HA283 Rev 2.
- Effect of modulating IGV's on exhaust temperature and flow on curve 522HA284 Rev 2.
- Humidity effects on curve 498HA697 Rev. B - all performance calculated with a constant specific humidity of .0064 or less as not to exceed 100% relative humidity.
- Plant Performance is measured at the generator terminals and includes allowances for the effects of inlet bleed heating, excitation power, shaft driven auxiliaries, and 3.5 in H<sub>2</sub>O (7.29 mbar) inlet and 5.5 in H<sub>2</sub>O (13.70 mbar) exhaust pressure drops and a DLN Combustor.
- Additional inlet and exhaust pressure loss effects:

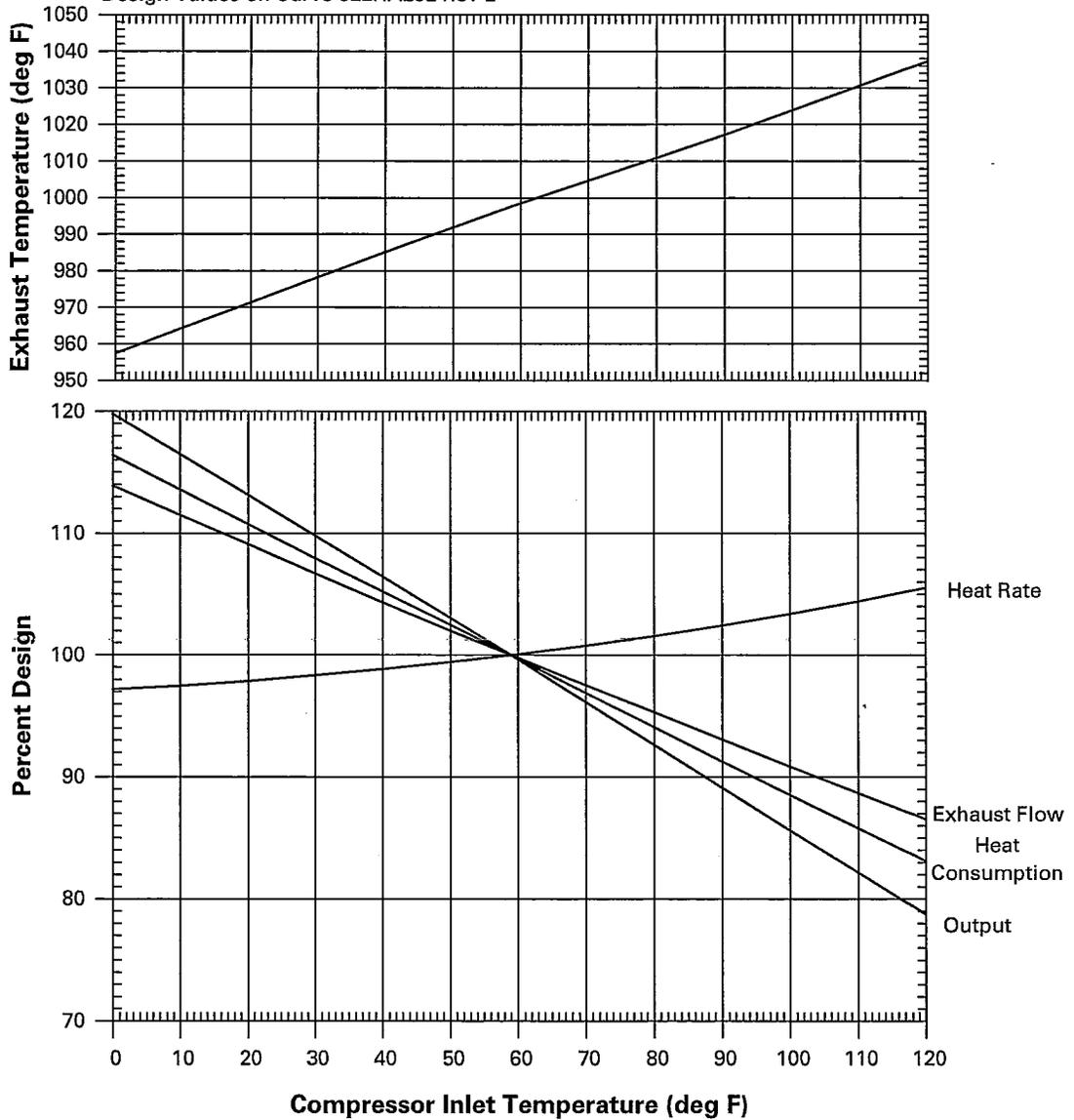
	% Effect on Output Heat Rate	Effect on Exhaust Temp.
4 in Water (10.0 mbar) inlet	-1.40 0.42	1.9F (1.0C)
4 in Water (10.0 mbar) exhaust	-0.42 0.40	1.8F (1.0C)



# GENERAL ELECTRIC MODEL PG7121EA GAS TURBINE

Effect of Compressor Inlet Temperature on  
Output, Heat Rate, Heat Consumption, Exhaust Flow  
And Exhaust Temperature at Base Load and 100% speed.

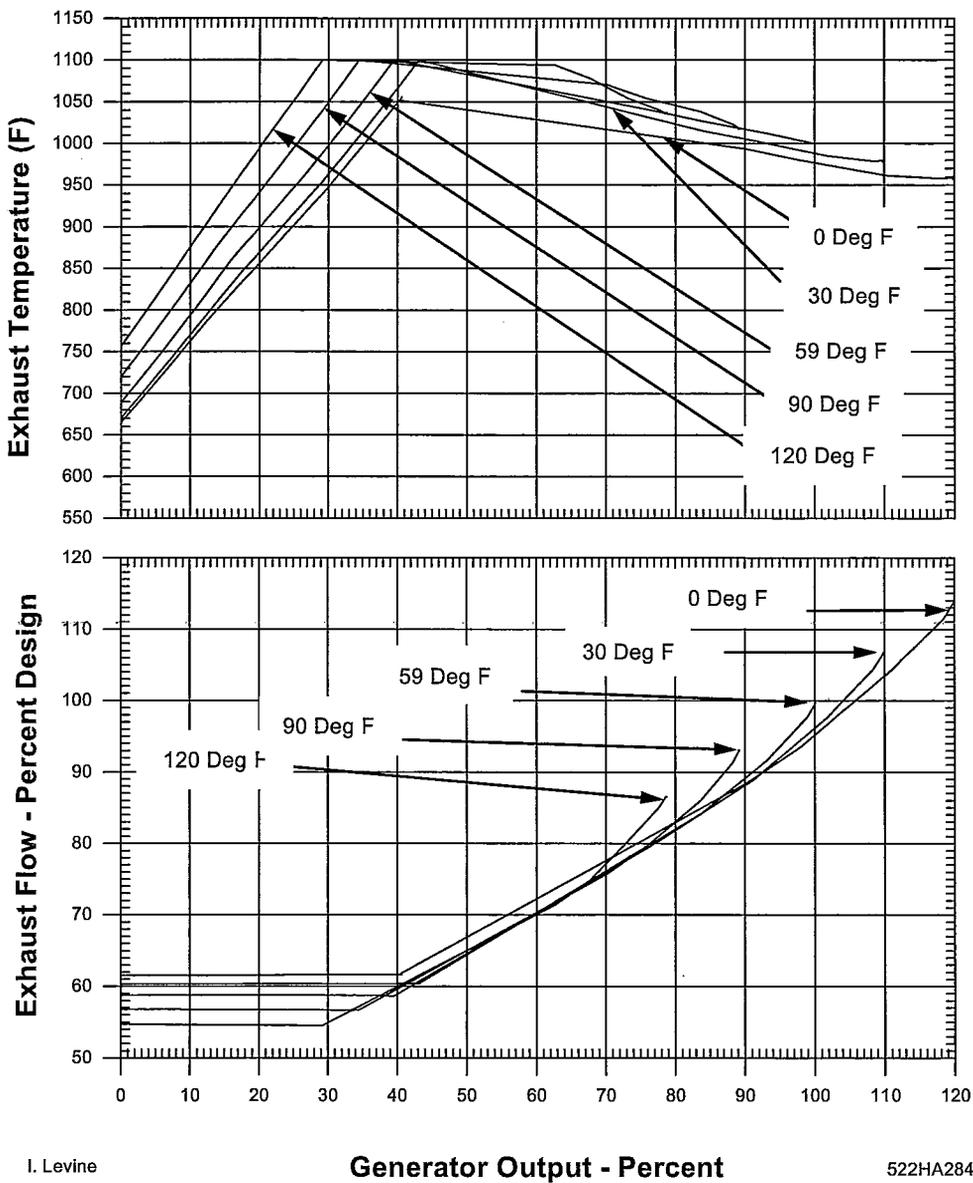
Configuration: DLN Combustor  
Fuel: Natural Gas  
Design Values on Curve 522HA282 Rev 2



# GENERAL ELECTRIC MODEL PG7121EA GAS TURBINE

## Effect of Inlet Guide Vane on Exhaust Flow and Temperature As a Function of Output and Compressor Inlet Temperature

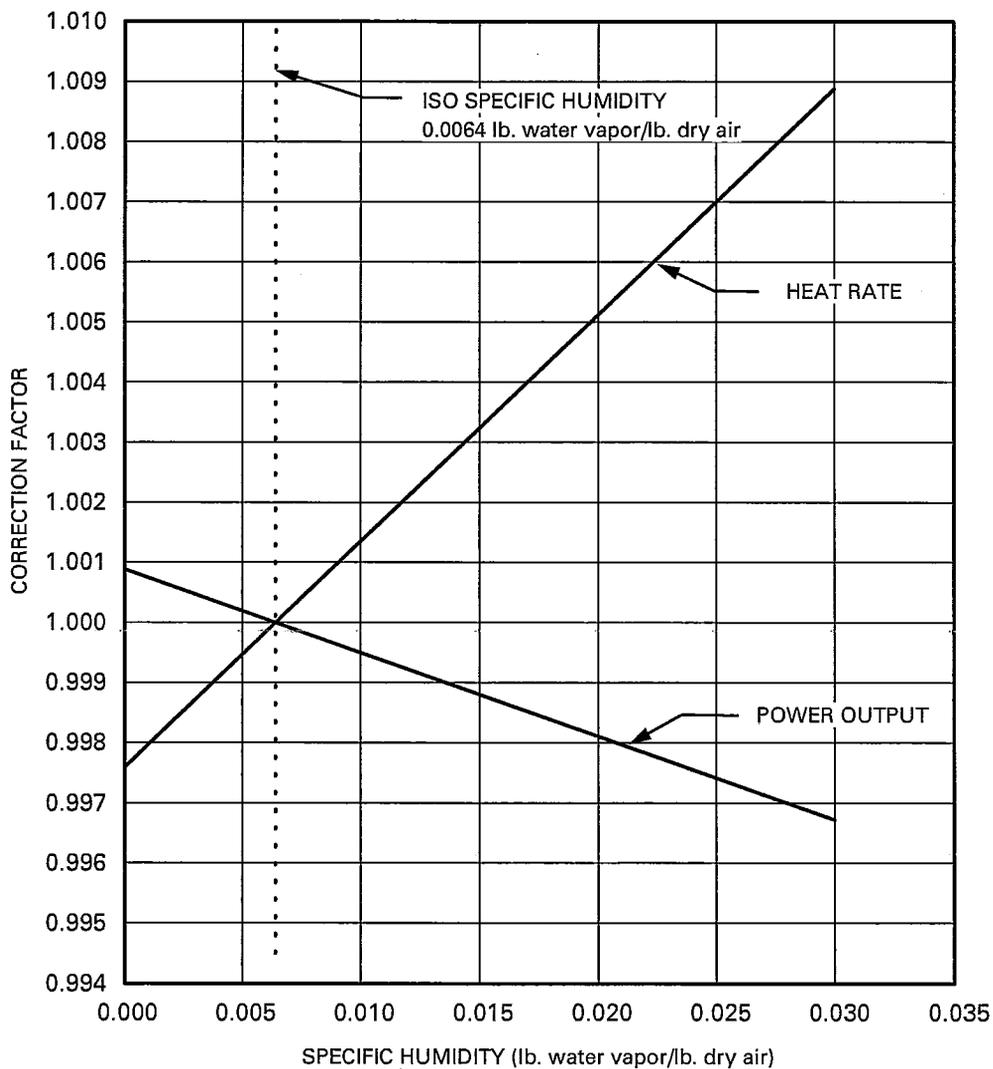
Fuel: Natural Gas  
Design Values on Curve 522HA282 Rev 2



# General Electric MS6001, MS7001 And MS9001 Gas Turbines

Corrections To Output And Heat Rate  
For Non-Iso Specific Humidity Conditions

For Operation At Base Load On Exhaust  
Temperature Control Curve

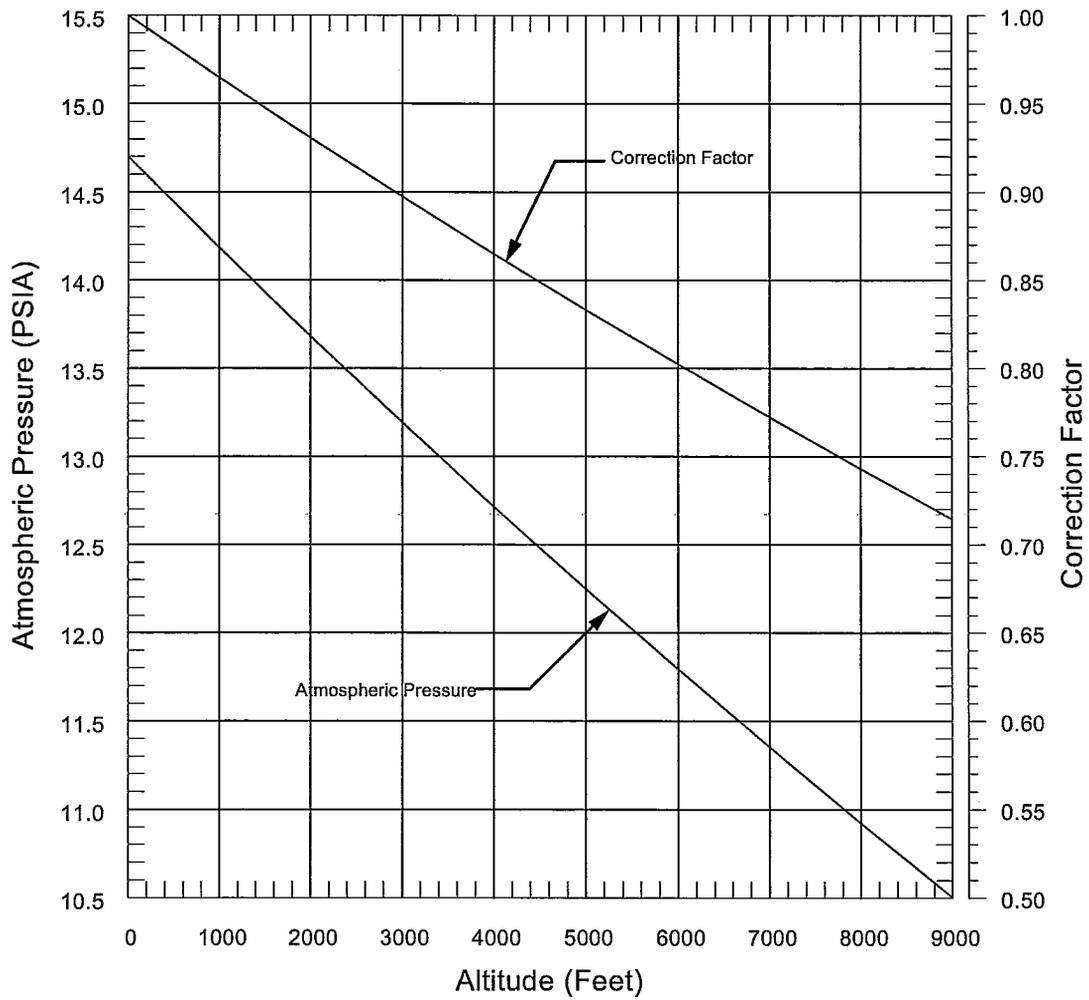


# GENERAL ELECTRIC GAS TURBINE ALTITUDE CORRECTION CURVE

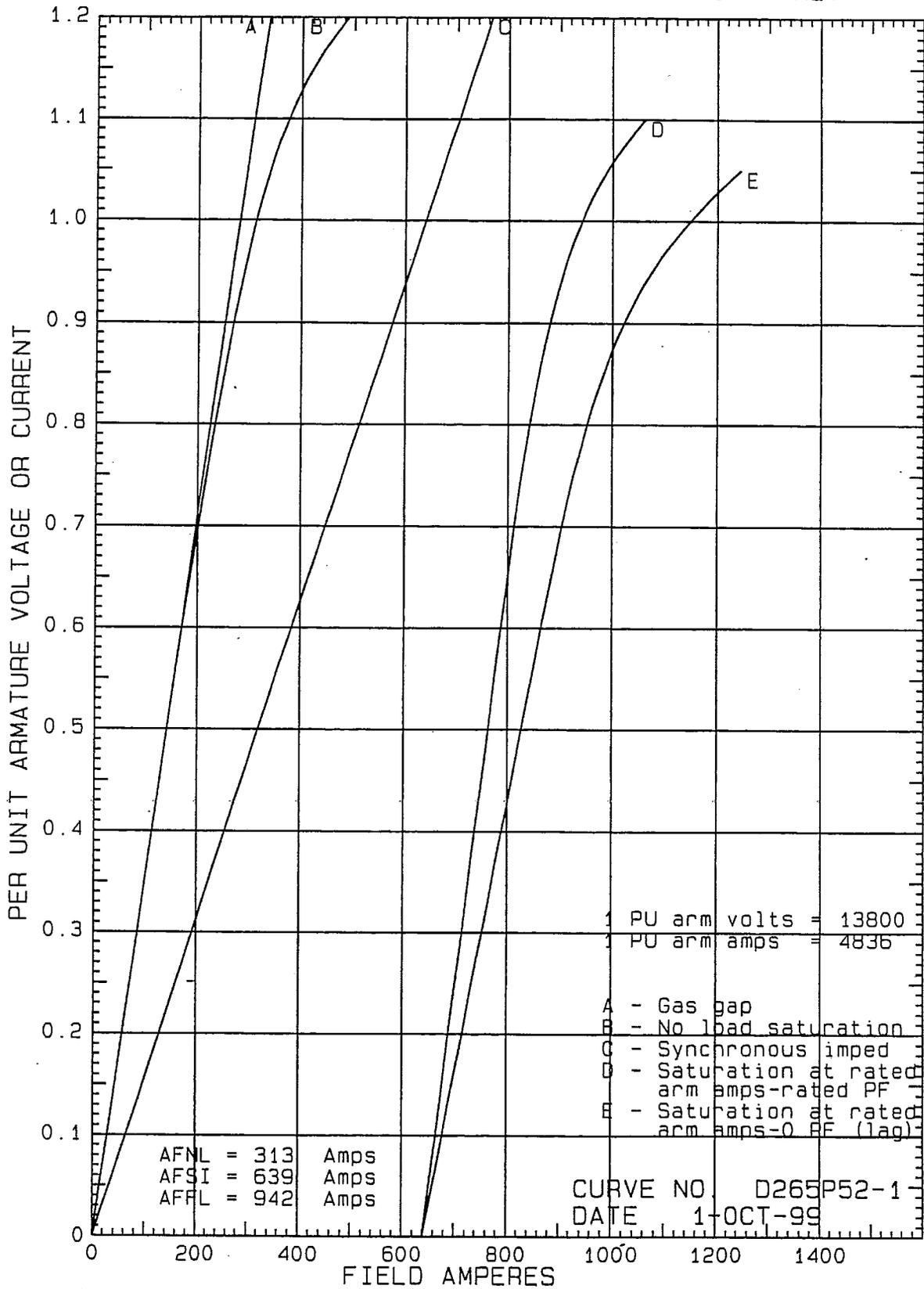
ALTITUDE VS ATMOSPHERIC PRESSURE  
AND  
ALTITUDE VS CORRECTION FACTOR  
FOR GASTURBINE OUTPUT, FUEL CONSUMPTION, AND EXHAUST FLOW

NOTES:

1. Exhaust Temperature, Heat Rate, and Thermal Efficiency are not affected by altitude.
2. Correction Factor =  $P(\text{atm})/14.7$



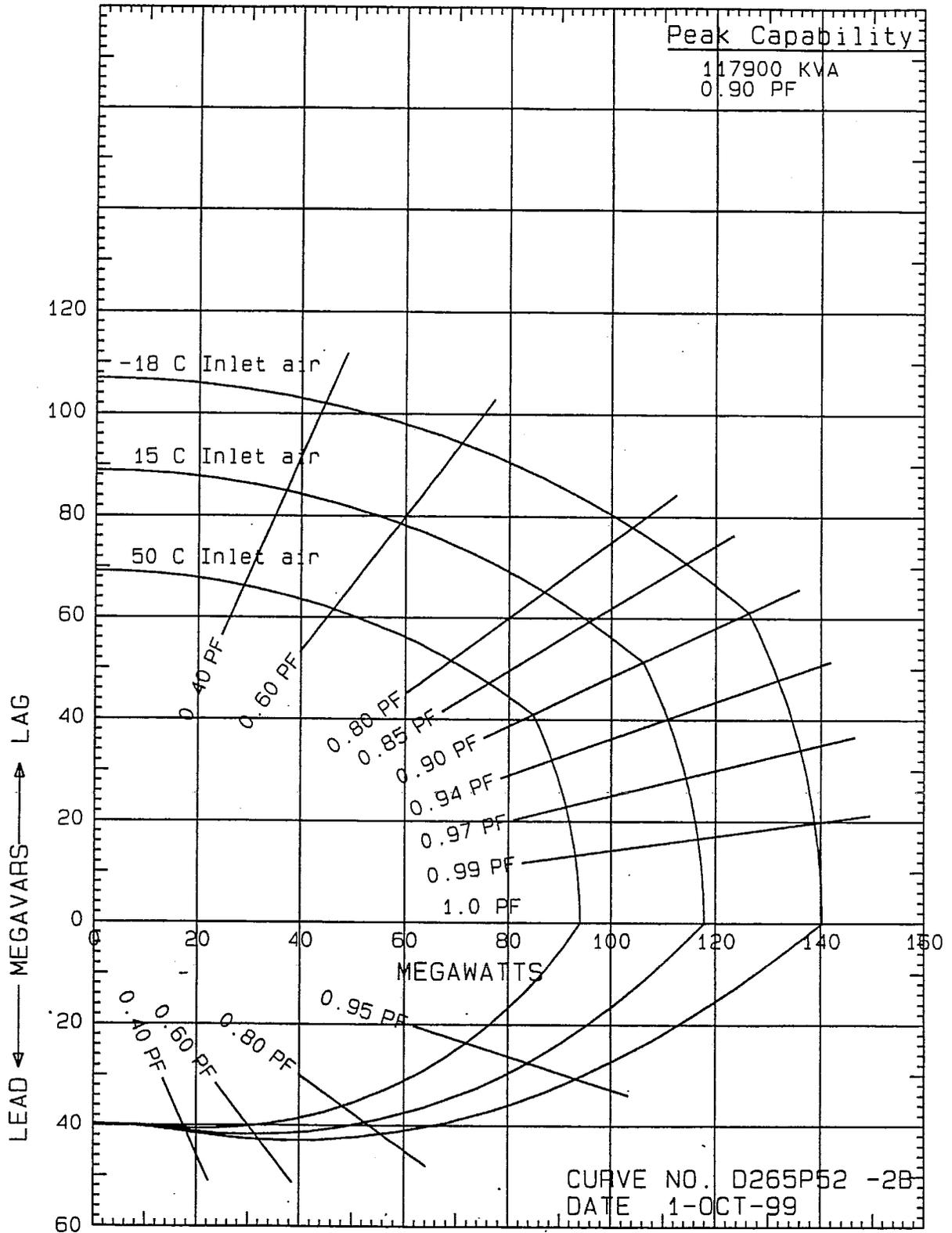
ESTIMATED SATURATION AND SYNCHRONOUS IMPEDANCE CURVES  
 115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF  
 300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT



# ESTIMATED REACTIVE CAPABILITY CURVES

115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF

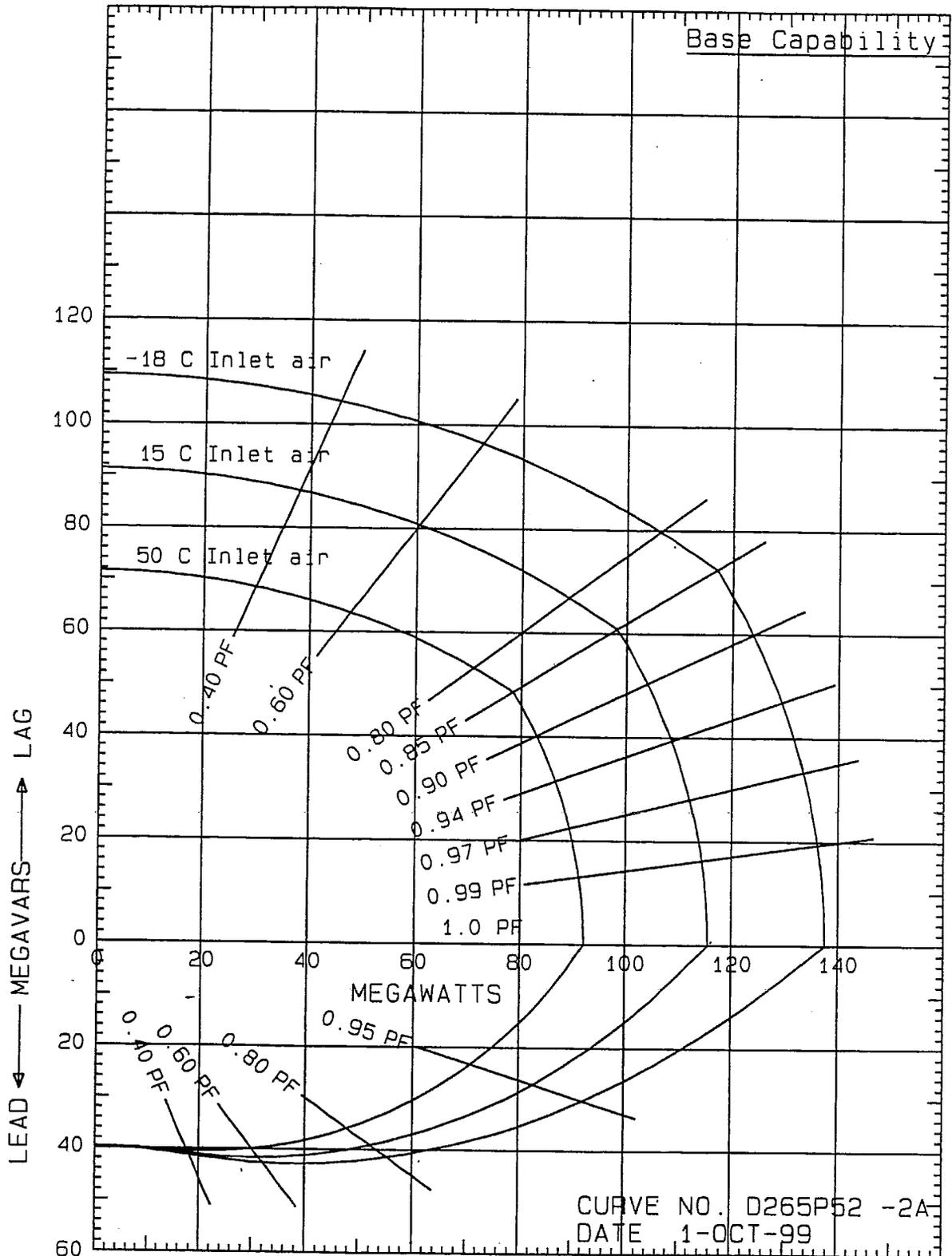
300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT



# ESTIMATED REACTIVE CAPABILITY CURVES

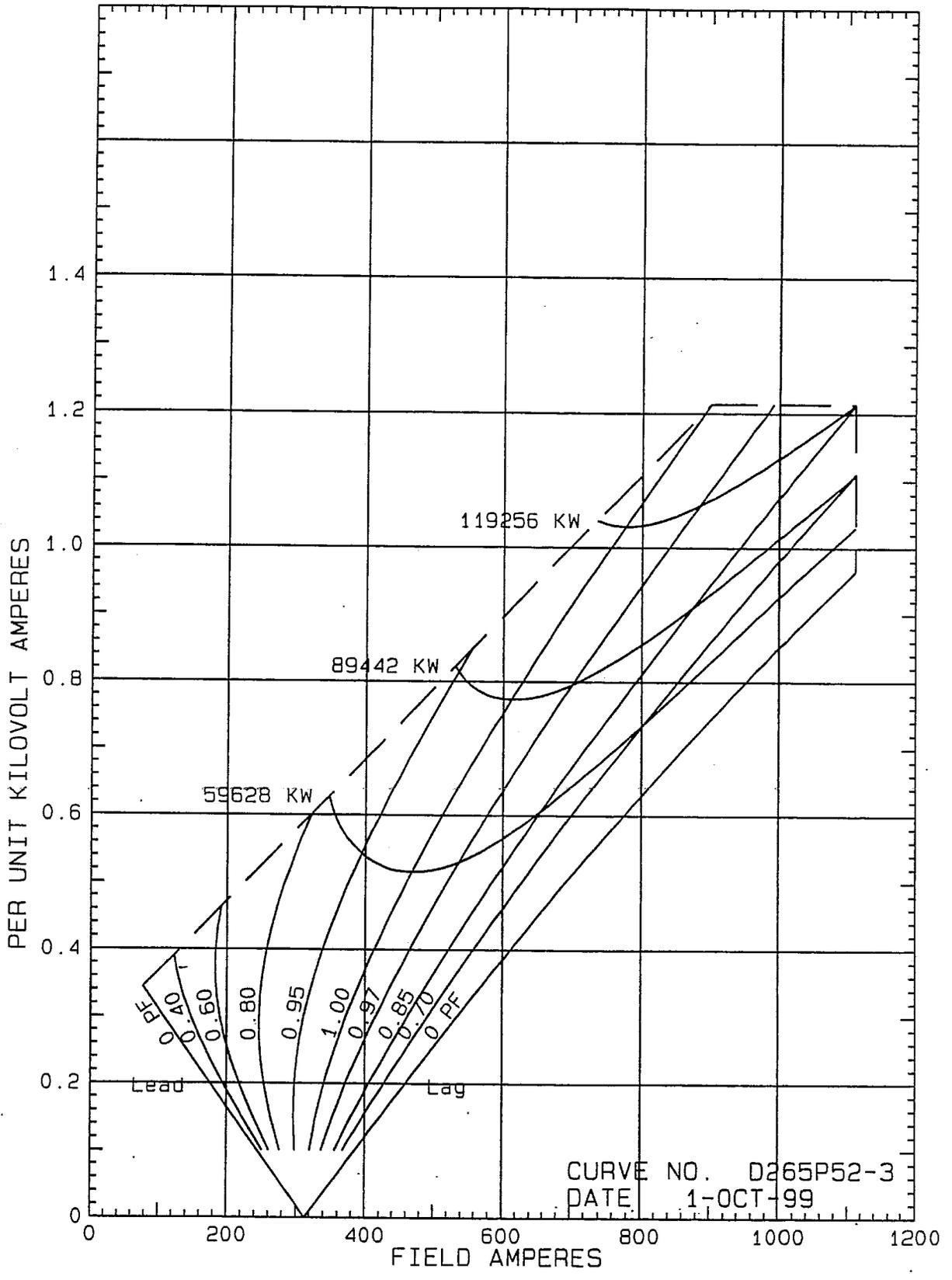
115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF

300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT



# ESTIMATED EXCITATION V CURVES

115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF  
300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT



GENERATOR OUTPUT AS A FUNCTION OF INLET AIR TEMPERATURE  
115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF  
300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT

