

# General Electric Model PG7121EA Gas Turbine

## Estimated Performance - Configuration: DLN Combustor

Compressor Inlet Conditions 59 F (15 C), 60% Relative Humidity

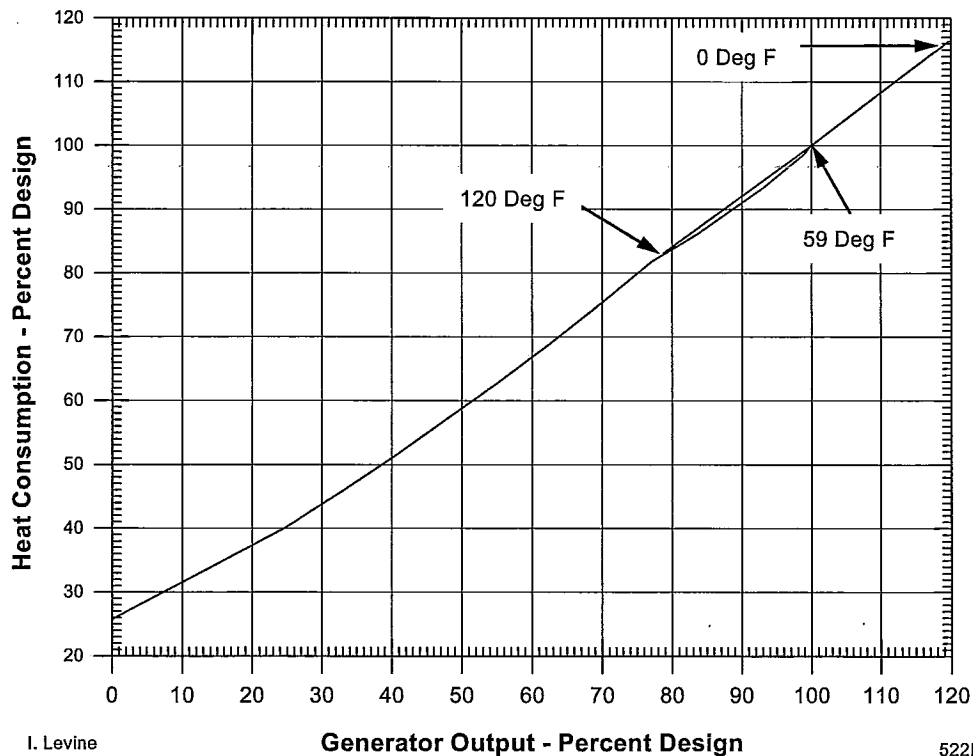
Atmospheric Pressure 14.7 psia (1.013 bar)

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:

1. Altitude correction on curve 416HA662 Rev A.
2. Ambient temperature correction on curve 522HA283 Rev 2.
3. Effect of modulating IGV's on exhaust temperature and flow on curve 522HA284 Rev 2.
4. 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.
5. Plant Performance is measured at the generator terminals and includes allowances for the effects of inlet bleed heating, exitation 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.
6. Additional inlet and exhaust pressure loss effects:

	% Effect on	Effect on
	Output Heat Rate	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)



I. Levine  
8/17/98

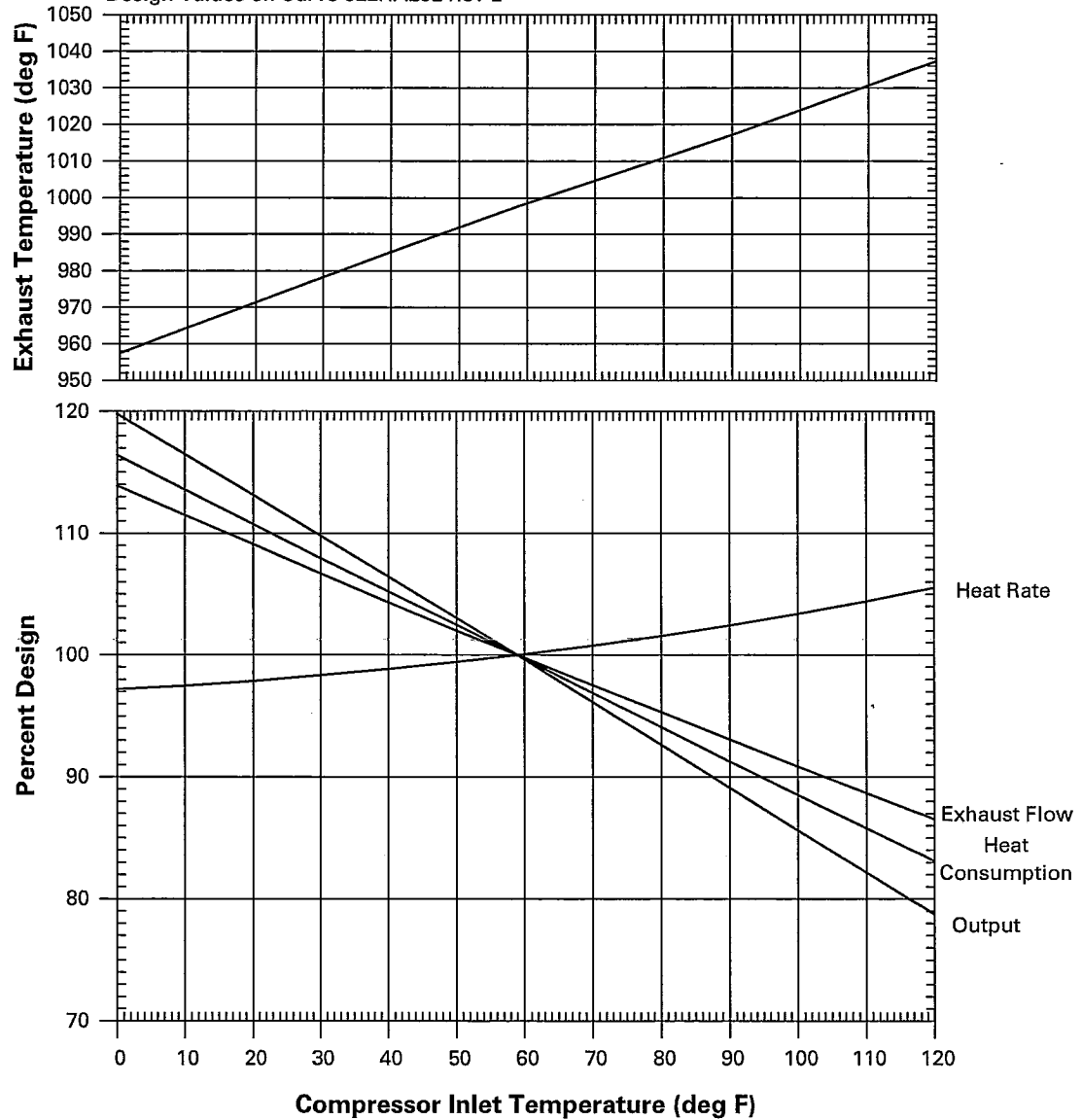
Generator Output - Percent Design

522HA282  
Rev - 2

# 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.

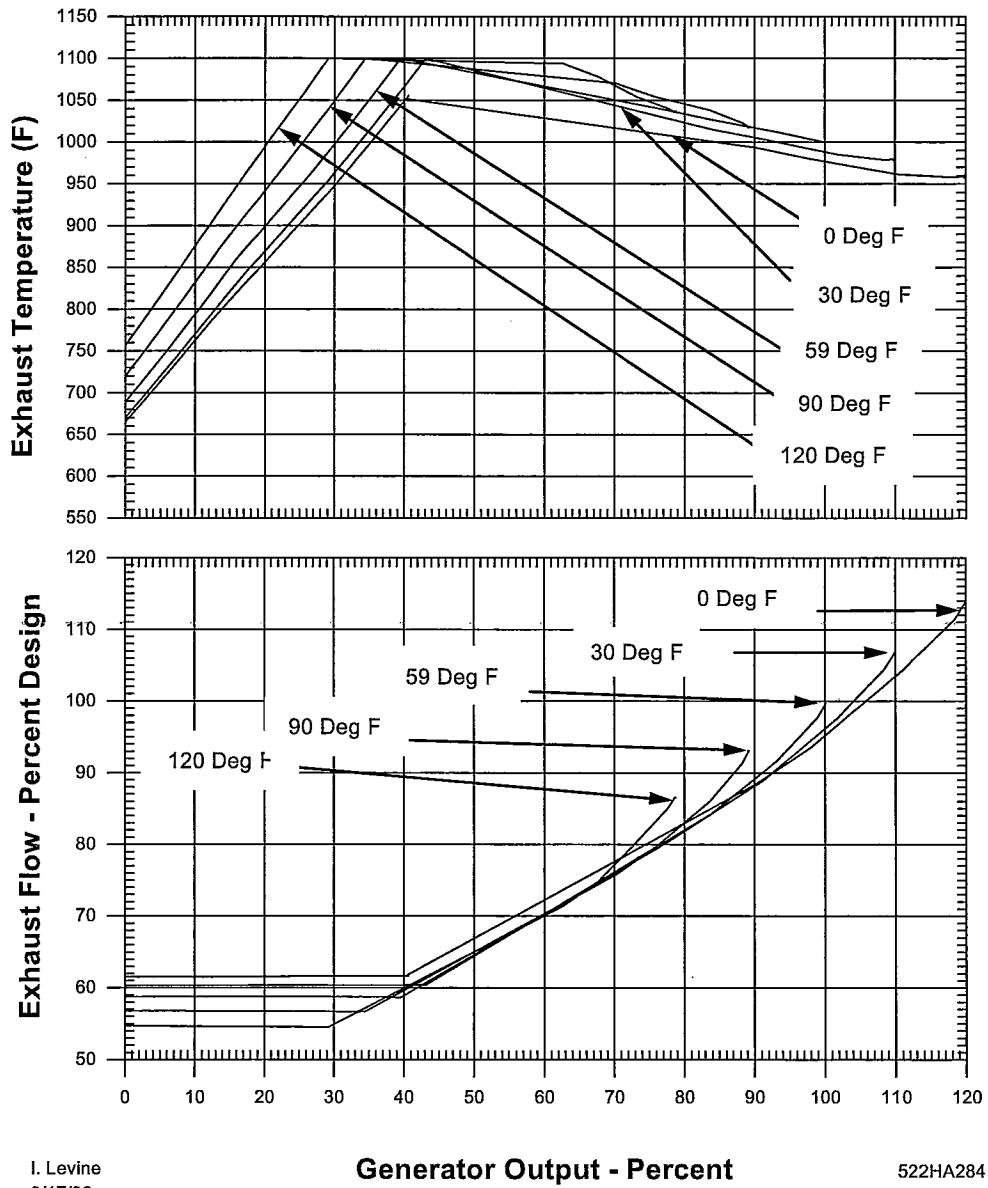
Configuration: DLN Combustor  
Fuel: Natural Gas  
Design Values on Curve 522HA282 Rev 2



# 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

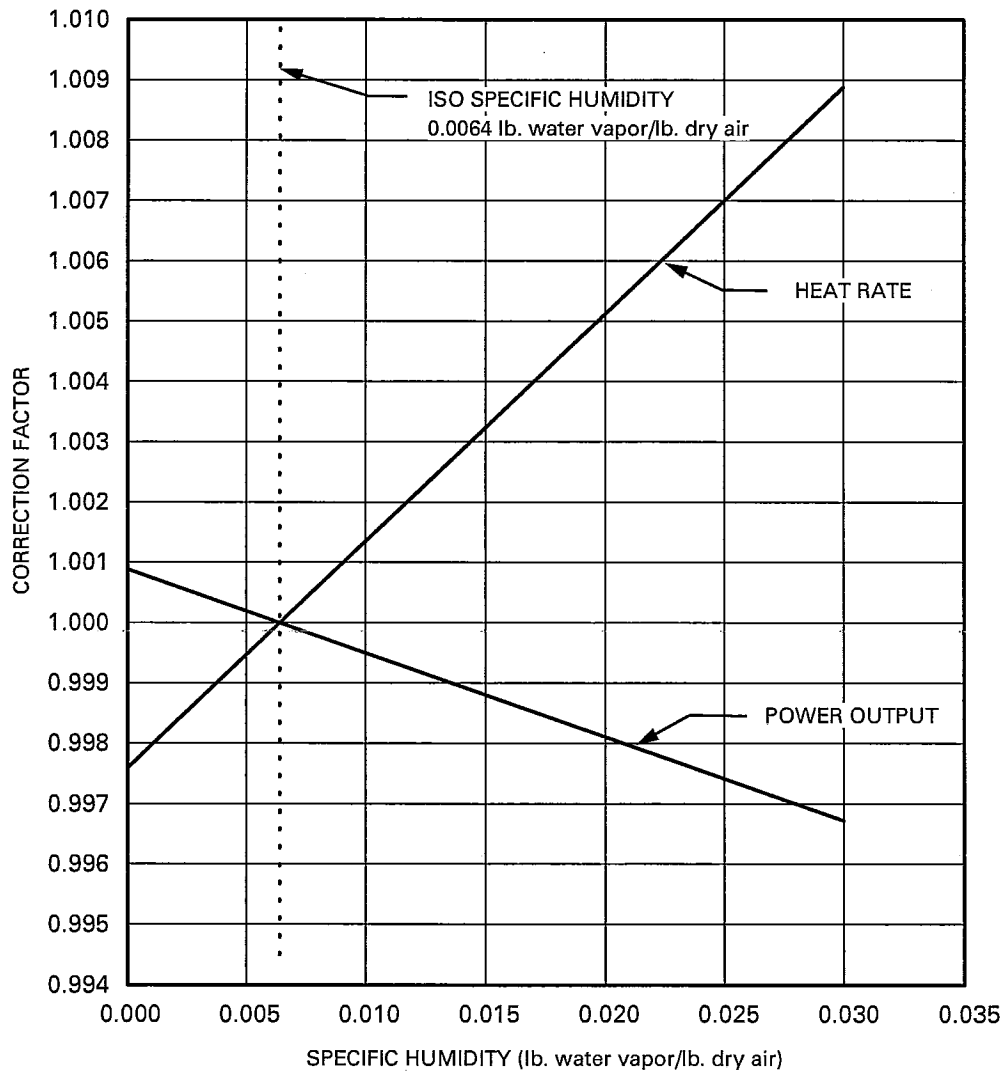
Fuel: Natural Gas  
Design Values on Curve 522HA282 Rev 2



## 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

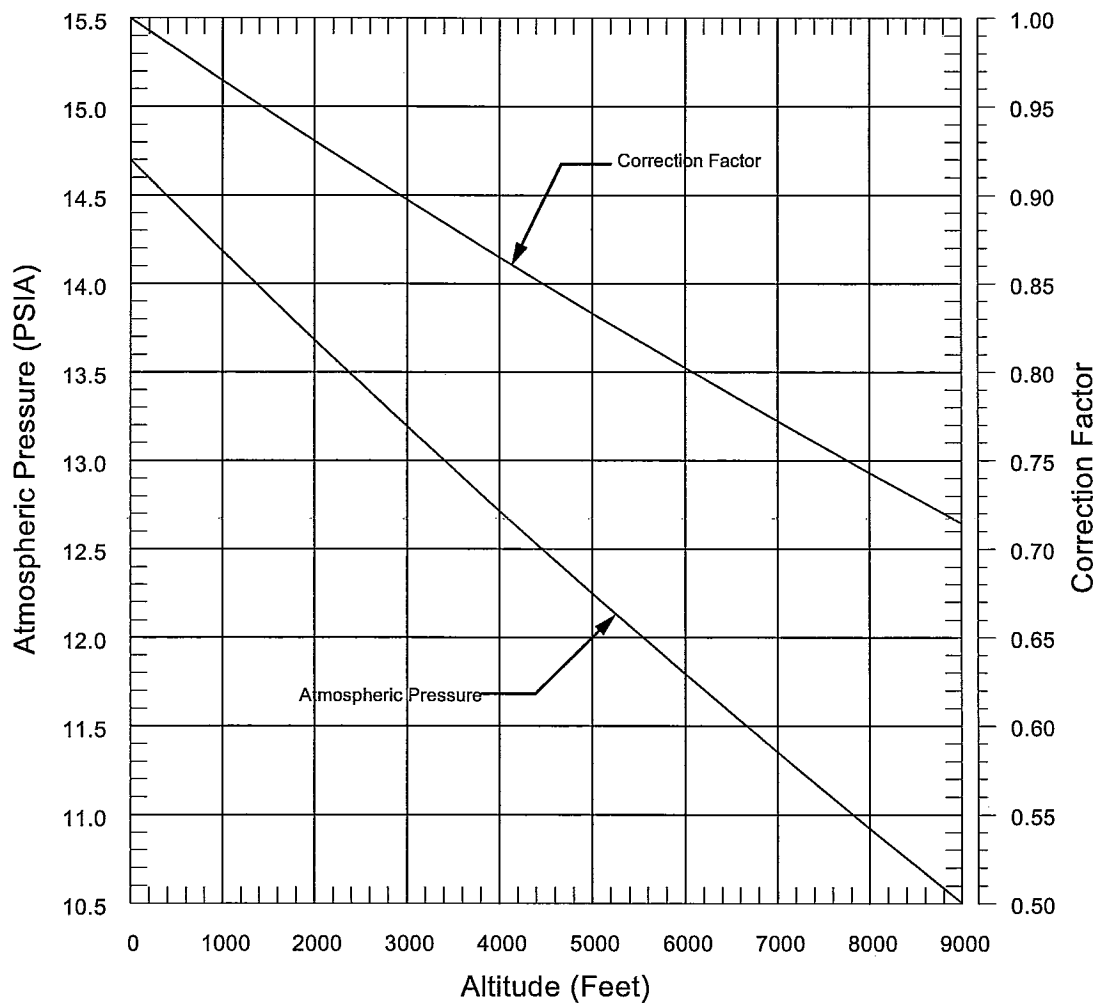


# GENERAL ELECTRIC GAS TURBINE ALTITUDE CORRECTION CURVE

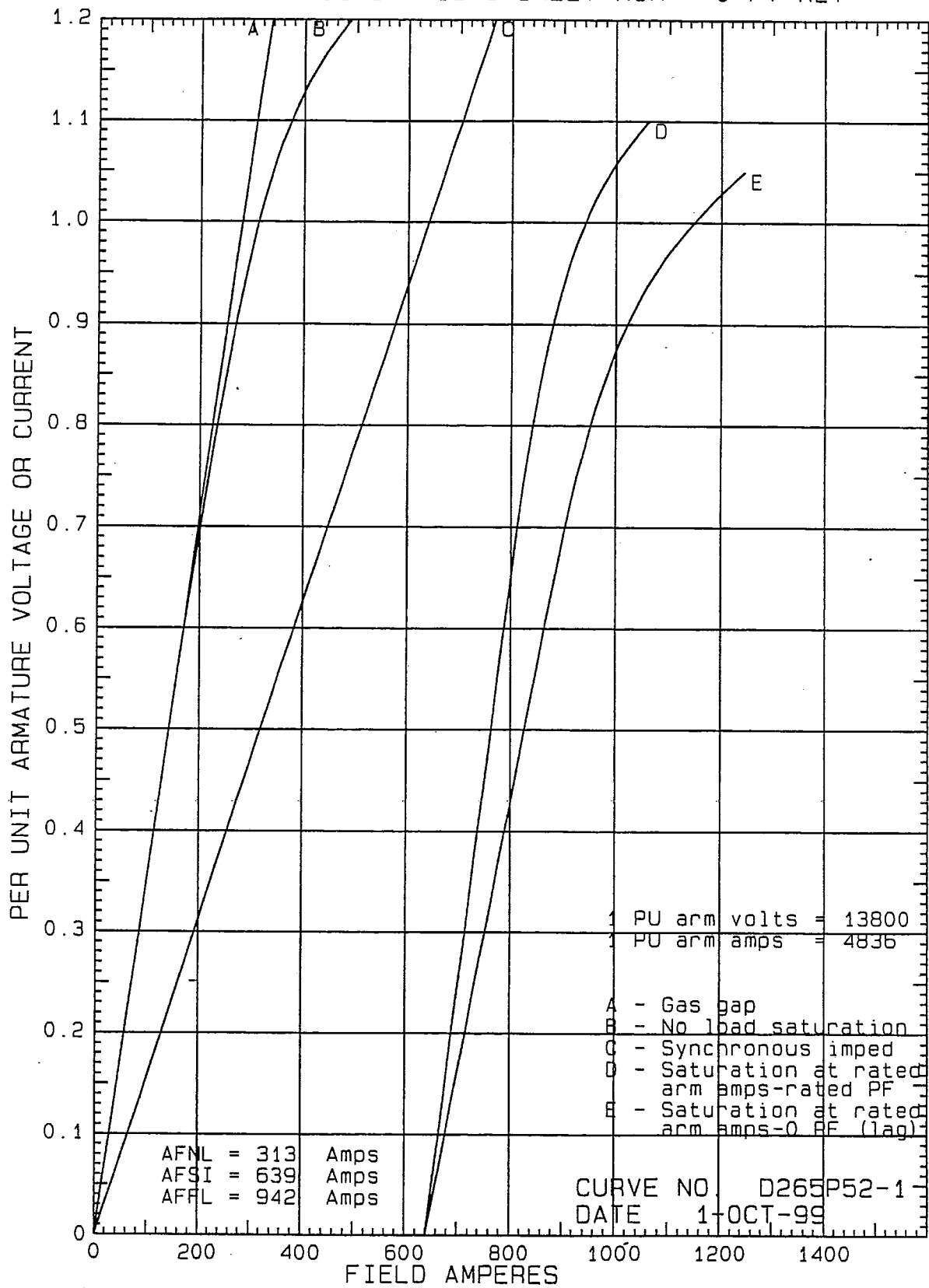
ALTITUDE VS ATMOSPHERIC PRESSURE  
AND  
ALTITUDE VS CORRECTION FACTOR  
FOR GASTURBINE OUTPUT, FUEL CONSUMPTION, AND EXHAUST FLOW

NOTES:

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

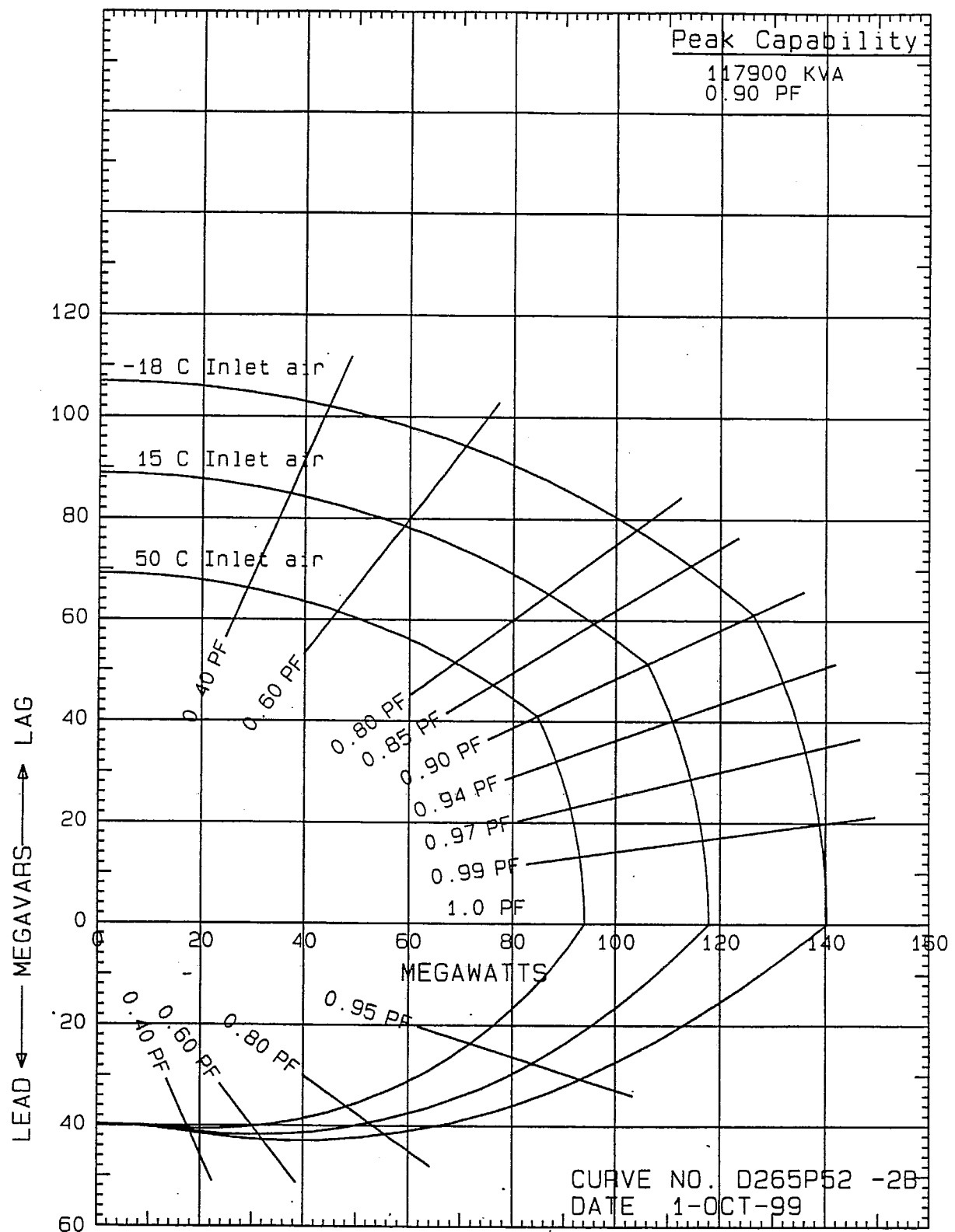


ESTIMATED SATURATION AND SYNCHRONOUS IMPEDANCE CURVES  
 115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF  
 300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT



# ESTIMATED REACTIVE CAPABILITY CURVES

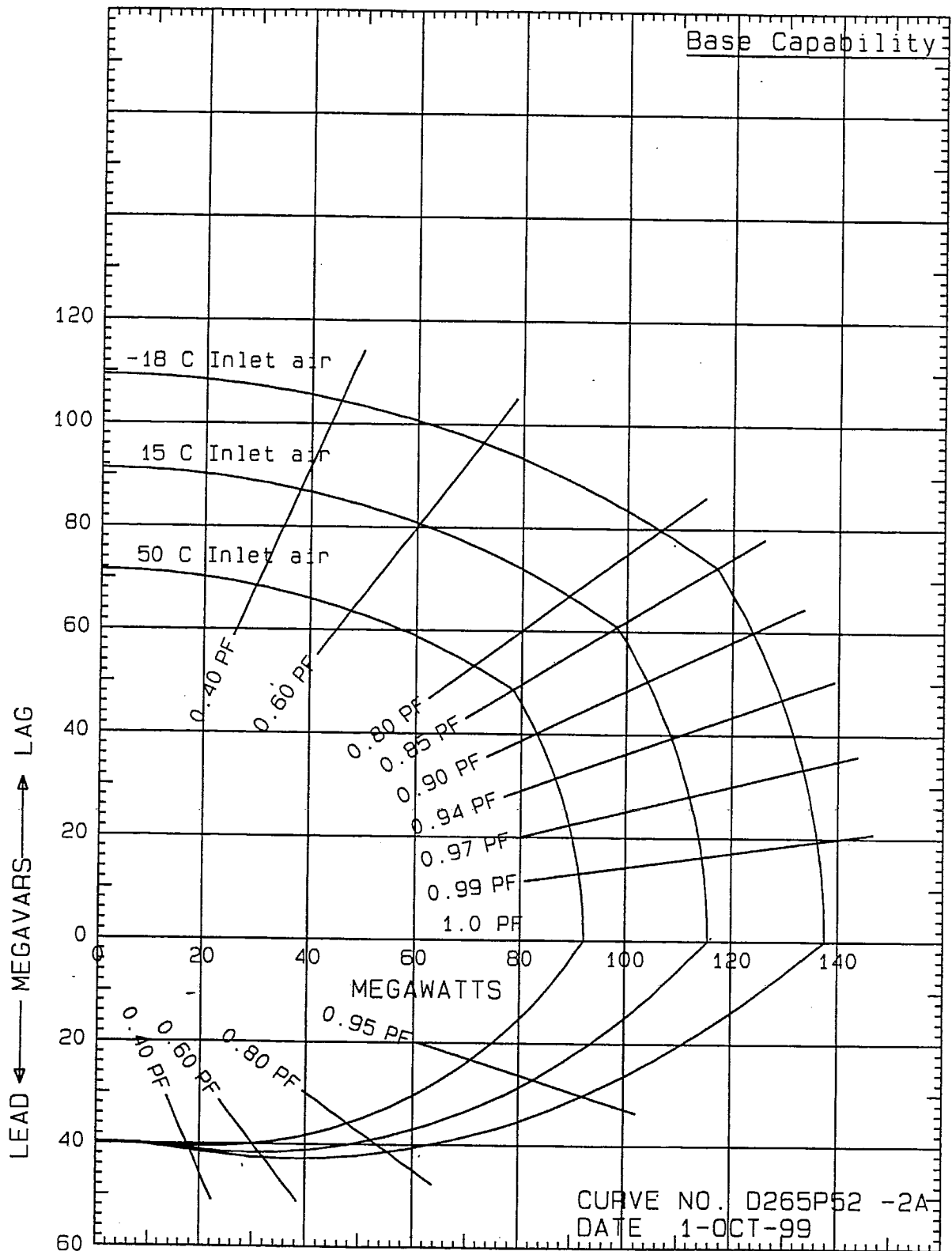
115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF  
300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT



# ESTIMATED REACTIVE CAPABILITY CURVES

115600 KVA - 3600 RPM - 13800 VOLTS - 0.85 PF

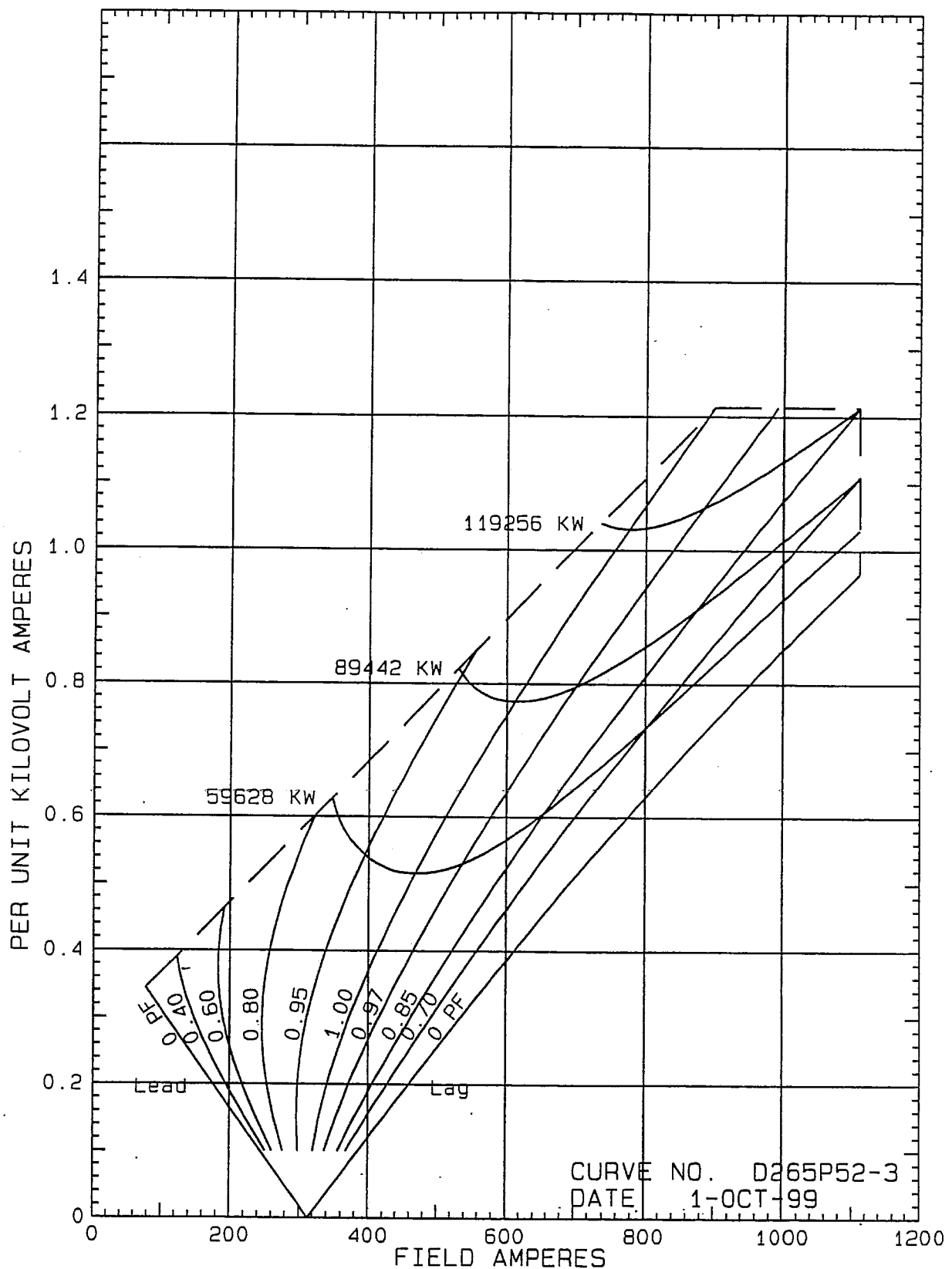
300 FLD VOLTS - 15 C INLET AIR - 0 FT ALT





# 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

