



GE Generator

Generator Data



Nameplate Data

2 Poles, 3 Phase, WYE Connected, 60 Hertz, 3600 RPM

Total Temperature at Rating Guaranteed not to Exceed: 110°C on Armature by Detector
125°C on Field by Resistance

Maximum Cold Gas/Air Temperature 40°C.

	Rating
kVA (0 ft)	29,900
Armature Amps	1,251
Armature Volts	13,800
Field Amps	427
Exciter Volts	250
Power Factor	0.90

Design Data

Voltage Range at 60 Hertz ±5 Percent

Brush Data

Shaft Grounding Brushes, 2 per set Recommended Grade, National Carbon 634

Gas Cooler Data

Inlet Water Temperature 95°F
Water Flow at Rated Load 600 GPM
Head Loss Through Cooler 11 Ft.
Air or Gas Flow Through Generator 26,094 CFM

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes the matter should be referred to the GE Company.

ESTIMATED GENERATOR DATA

Reactance Data (Per Unit)

	Direct Axis	Quadrature Axis
Saturated Synchronous	(X _{dv}) 1.864	(X _{qv}) 1.733
Unsaturated Synchronous	(X _{di}) 1.864	(X _{qi}) 1.733
Saturated Transient	(X' _{dv}) 0.204	(X' _q) 0.468
Unsaturated Transient	(X' _{di}) 0.266	
Saturated Subtransient	(X'' _{dv}) 0.139	(X'' _{qv}) 0.136
Unsaturated Subtransient	(X'' _{di}) 0.183	(X'' _{qi}) 0.181
Saturated Negative Sequence	(X _{2v}) 0.133	
Unsaturated Negative Sequence	(X _{2i}) 0.174	
Saturated Zero Sequence	(X _{0v}) 0.082	
Unsaturated Zero Sequence	(X _{0i}) 0.097	
Leakage Reactance, Overexcited	(X _{LM,OEX}) 0.154	
Leakage Reactance, Underexcited	(X _{LM,UEX}) 0.154	

Field Time Constant Data (Sec. at 125°C)

Open Circuit	(T' _{do}) 4.011	(T' _{qo}) 0.402
Three Phase Short Circuit Transient	(T' _{d3}) 0.440	(T' _q) 0.402
Line to Line Short Circuit Transient	(T' _{d2}) 0.677	
Line to Neutral Short Circuit Transient	(T' _{d1}) 0.810	
Short Circuit Subtransient	(T'' _d) 0.015	(T'' _q) 0.015
Open Circuit Subtransient	(T'' _{do}) 0.022	(T'' _{qo}) 0.052

Armature DC Component Time Constant Data (Sec. at 100°C)

Three Phase Short Circuit	(T _{a3}) 0.271
Line to Line Short Circuit	(T _{a2}) 0.271
Line to Neutral Short Circuit	(T _{a1}) 0.237

Armature Winding Sequence Resistance Data (Per Unit)

Positive	(R ₁) 0.004
Negative	(R ₂) 0.016
Zero	(R ₀) 0.009

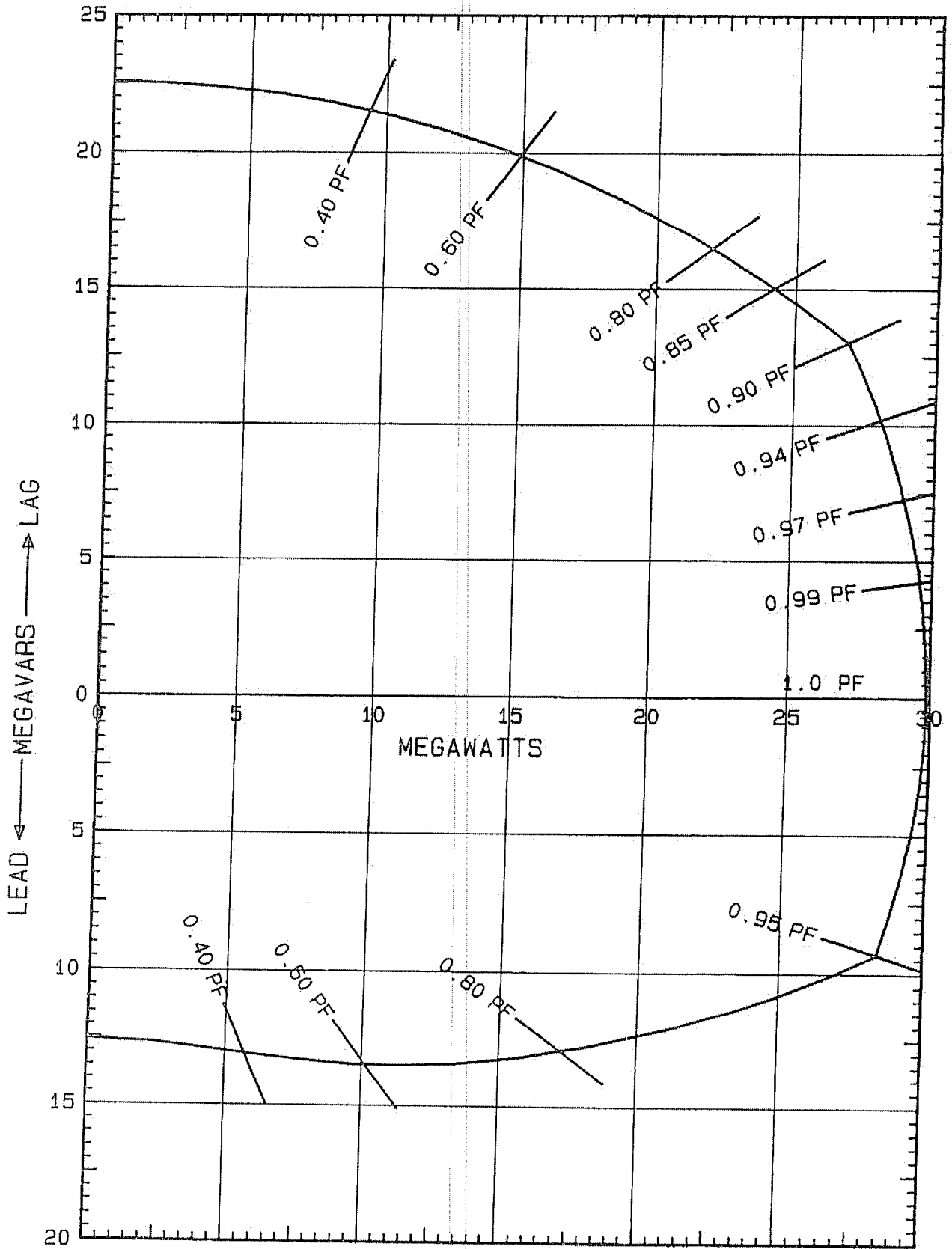
Rotor Short-Time Thermal Capacity, (I ₂) ² t	10
Turbine-Generator Combined Inertia Constant, H	4.84 kW SEC/kVA
Three Phase Armature Winding Capacitance	0.322 Microfarads
Armature Winding DC Resistance (Per Phase)	0.00828 Ohms at 100°C
Field Winding DC Resistance	0.400 Ohms at 125°C
Field Current at Rated kVA, Armature Voltage and PF	422.0 Amperes
Field Current at Rated kVA and Armature Voltage, 0 PF Lagging	514.9 Amperes

(FOR SYSTEMS STUDY ONLY – NOT ALLOWABLE OPERATING POINT)



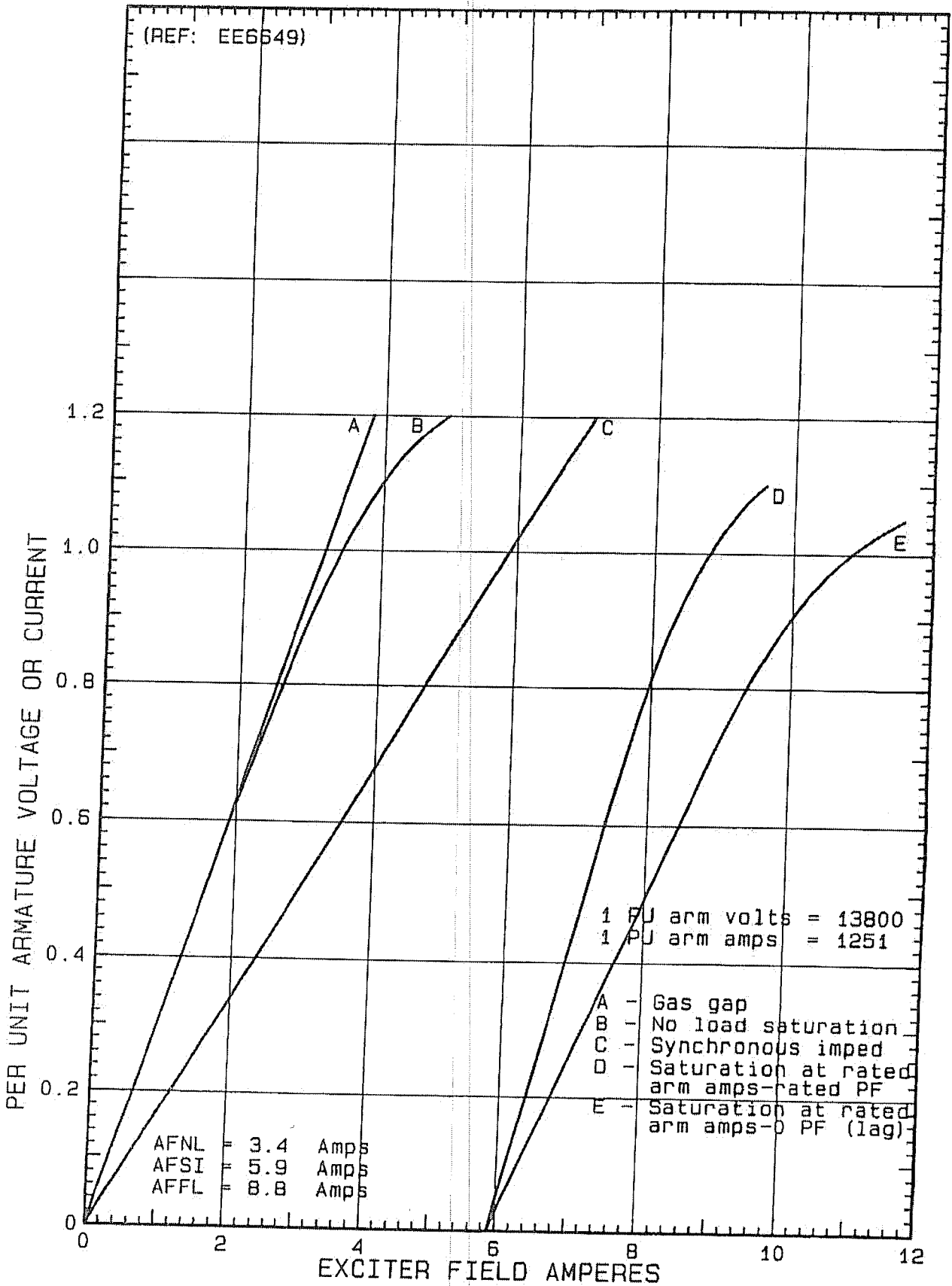
GE Generator

29900 kVA — 3600 RPM — 13800 VOLTS — 0.90 PF
 0.57 SCR — 280 FT ALT — 250 FLD VOLTS



ESTIMATED REACTIVE CAPABILITY CURVES

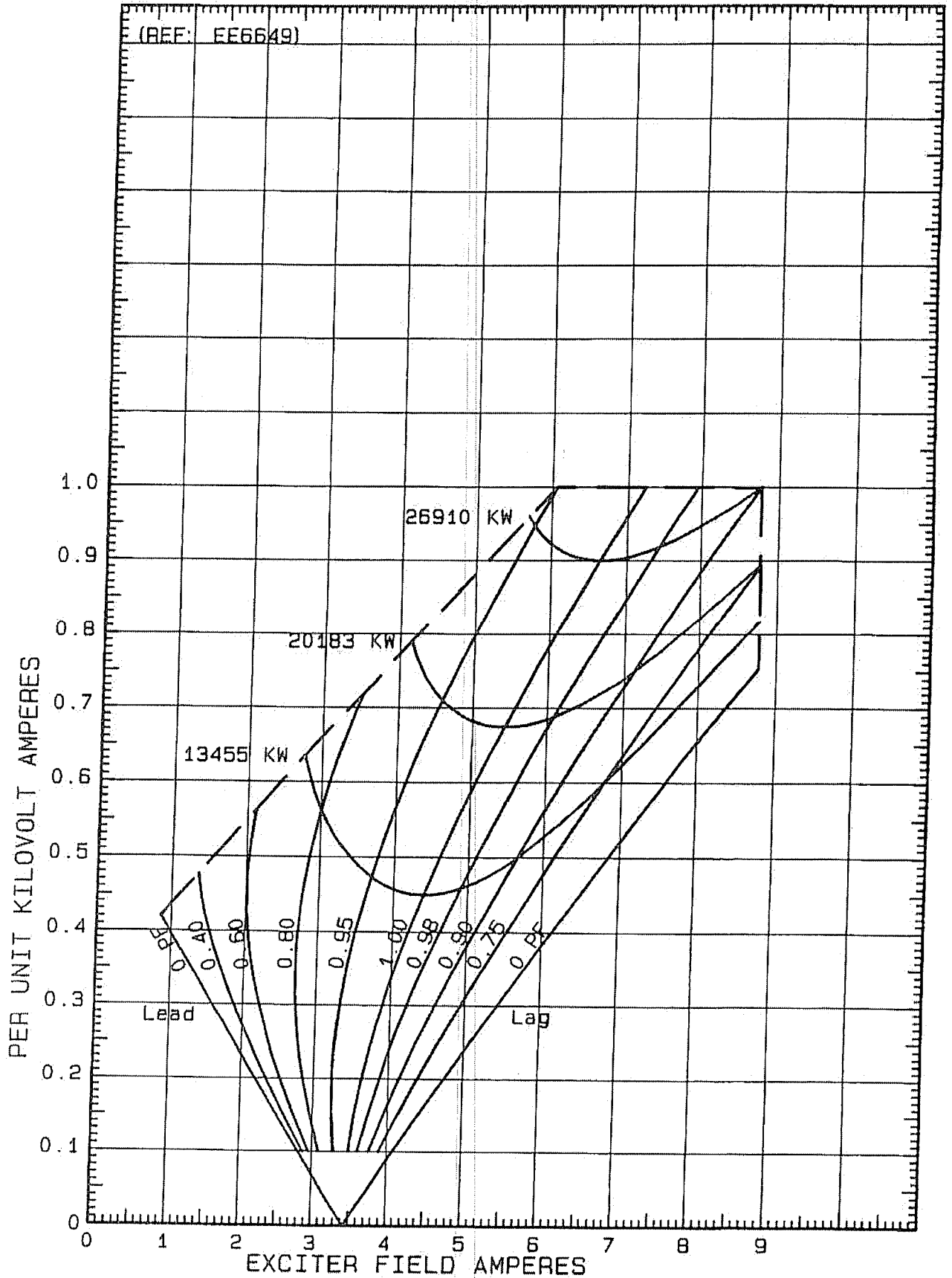
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ESTIMATED SATURATION AND SYNCHRONOUS IMPEDANCE CURVES

NUMBER OF PAGES

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ESTIMATED EXCITATION V CURVES