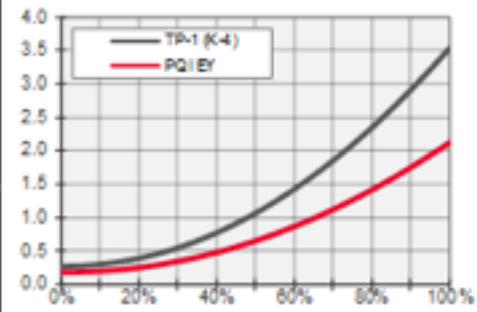


The PQI Calculator™

TRANSFORMER LOAD

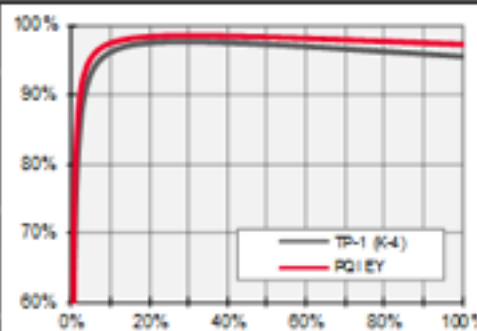
Project	Sample
Description	To compare the performance of a 75 kVA K-Rated TP-1 Transformer and a 75 kVA Type EYE-Rated Distribution TransFilter, under K-4 loading.
Date	November 9, 2012



Rating & Efficiency			
TP-1 (K-4)	kVA Rating	75.0	
Zero-Sequence Harmonic Flux Cancellation		No	
Linear Eff. at 100% of TX Rated kVA		96.11%	
PQI EY	kVA Rating	75.0	
Zero-Sequence Harmonic Flux Cancellation		No	
Linear Eff. at 100% of TX Rated kVA		97.62%	

Losses (kW) vs. Loading (pu)

Capital Costs	
TP-1 (K-4)	\$3,000
PQI EY	\$4,000
Installation [if replaced before end-of-life]	



Power Costs	
Average kWh Rate (\$/kWh)	\$0.140
Average Demand Rate (\$/kW/month)	\$0.00

Efficiency (pu) vs. Loading (pu)

Air Conditioning Requirement	
Months/Year [direct or indirect]	8

Transformer Load		Daytime	Evening	Weekend	Total
% of Nameplate kVA Rating for TP-1 (K-4)		50%	20%	20%	32.5%
% of Nameplate kVA Rating for PQI EY		50%	20%	20%	32.5%
Hours/Day for Segment		14	10	24	
Days/Year for Segment		261	261	104	

Calculation of Energy Losses		Daytime	Evening	Weekend	Average
Actual kW Losses for TP-1 (K-4)		1.059	0.388	0.388	0.668
Actual kW Losses for PQI EY		0.648	0.249	0.249	0.415
Difference in kW TP-1 (K-4) PQI EY		0.411	0.138	0.138	0.252

Calculation of Annual Savings		Daytime	Evening	Weekend	Total
Cost of Losses for TP-1 (K-4)		\$575.50	\$154.09	\$147.91	\$877.50
Cost of Losses for PQI EY		\$352.03	\$99.07	\$95.09	\$546.20
Annual Savings, including A/C Costs		\$275.60	\$67.86	\$65.14	\$408.60

Calculation of Financial Benefits	
Annual Savings, including A/C Costs, when using PQI EY	\$408.60 / year
Payback on Incremental Cost [substitution]	2.4 years
Return-on-Investment (ROI) on Incremental Cost [substitution]	40.9 %
Payback on Installed Cost [before end-of-life replacement]	N/A years
Return-on-Investment (ROI) on Installed Cost [before end-of-life replacement]	N/A %
Annual Reduction in kWh	2,723 kWh saved
Annual Energy Savings	1.3 %