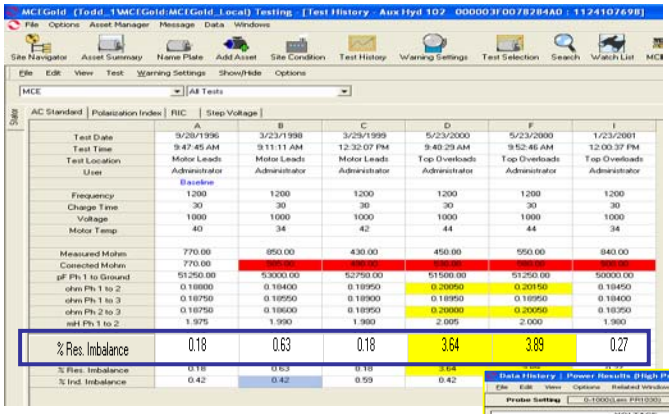
Fault Zone – **Power Circuit**

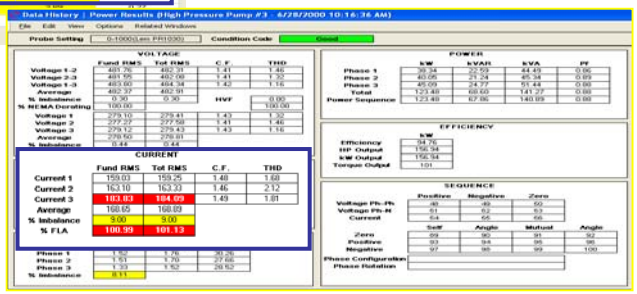
The power circuit refers to all of the conductors and connections that exist from the point at which the testing starts through to the connections at the motor. It can include circuit breakers, fuses, contactors, overloads, disconnects, and lug connections. Research on industrial power distribution systems has shown that connectors and conductors are the source of 46% of the faults reducing motor efficiency.

The MCEMAX powered by MCEGold™ provides a unique advantage to test the power circuit and all the associated components. Many times a motor, although initially in perfect health, is installed into a faulty power circuit. This causes problems like voltage imbalances, current imbalances, sequence currents, etc. As these problems become more severe, the horsepower rating of the motor drops, causing temperatures to increase and insulation damage to occur. It is important to evaluate the resistance and inductance of a motor circuit once a motor is installed for service. High imbalances of voltage, current, resistance, or inductance could indicate problems with the motor or power circuit. Identifying minor imbalances early will eliminate catastrophic failures and headaches later.

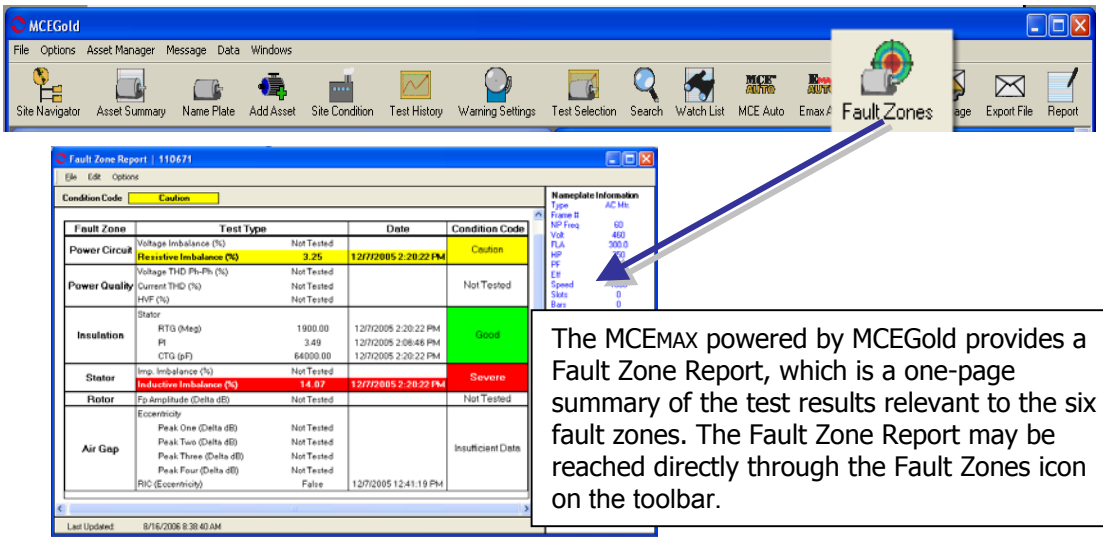


Test Date	9/28/1996	3/23/1998	3/29/1999	5/23/2000	5/23/2000	1/23/2001
Test Time	9:47:45 AM	9:11:11 AM	12:32:07 PM	9:40:29 AM	9:52:46 AM	12:00:37 PM
Test Location	Motor Leads	Motor Leads	Motor Leads	Top Overloads	Top Overloads	Top Overloads
User	Administrator	Administrator	Administrator	Administrator	Administrator	Administrator
	Baseline					
Frequency	1200	1200	1200	1200	1200	1200
Charge Time	30	30	30	30	30	30
Voltage	1000	1000	1000	1000	1000	1000
Motor Temp	40	34	42	44	44	34
Measured Mohm	770.00	850.00	430.00	450.00	550.00	840.00
Corrected Mohm	770.00	850.00	430.00	450.00	550.00	840.00
pF Ph 1 to Ground	51250.00	53000.00	52750.00	51500.00	51250.00	50000.00
ohm Ph 1 to 2	0.18800	0.18400	0.18950	0.20050	0.20150	0.18450
ohm Ph 1 to 3	0.18750	0.18550	0.18900	0.18950	0.18950	0.18400
ohm Ph 2 to 3	0.18750	0.18600	0.18950	0.20000	0.20050	0.18350
mH Ph 1 to 2	1.975	1.990	1.980	2.005	2.000	1.980
% Res. Imbalance	0.18	0.63	0.18	3.64	3.89	0.27
% Ind. Imbalance	0.42	0.42	0.59	0.42		

Trend Phase-to Phase resistance over time. If an out of tolerance condition occurs MCEGold will alert you.



All three phases of current are calculated and displayed. You are immediately alerted to any over current or imbalance condition



The MCEMAX powered by MCEGold provides a Fault Zone Report, which is a one-page summary of the test results relevant to the six fault zones. The Fault Zone Report may be reached directly through the Fault Zones icon on the toolbar.