



Customer

Motor Circuit Evaluation

August 15, 2013

Re: Motor Circuit Evaluation Report

Kevin,

Please find the following report from the Predictive Maintenance Services performed on August 13, 2013. The following pages contain a summary of the machinery analyzed followed by diagnosis pages for identified problems.

Thank you for choosing Electrical Equipment Company. If there are any further questions or concerns please contact me at (919) 909-8945

Sincerely,
Billy Flinchum
Reliability Specialist

CC: Troy Guidt
Mike Rathbun

Equipment Summary

Severity Key:



None: The equipment should be operated as normal, with confidence. There are no indications of failure.



Low: The equipment should be operated as normal, with confidence. There are indications conditions that



Medium: The equipment may be operated/operable, but should be monitored closely. There are issues that will effect performance/reliability. The item will need maintenance soon.



High: The equipment should not be operated to prevent the risk of extensive damage or catastrophic failure.

Application Description	Problem Area	Severity
Press Pit Pulper Pump Motor A0150-062O.1	Stator PI; Step Voltage Leakage Current	
Short Fiber Thickener Shower Water Pump Motor A0150-085T.1	Inductive Imbalance	
Saveall Repulper Motor A0010-260T.1	Stator PI	
Saveall Motor A0050-2666T.1		
Saveall Stock Chest Pump Motor A0150-156T.1		
Flat Box Seal Pump Motor C1005486		
Short Fiber Stock Pump Motor to #1 Machine A0200-112T.1		
Primary Course Screen #1 A0250-078T.1		
S.F. Lightweight Cleaners Accepts Booster Pump Motor A0200-111T.1		
S.F. Primary Lightweight Cleaner Feed Pump Motor A0050-085T.1		
Short Fiber Surge Chest Pump Motor A0075-201T.1		
S.F. Primary Lightweight Cleaner Feed Pump Motor A0450-006O.1		
Secondary Fiber Thickener Seal Water Booster Pump Motor A0003-132T.1		

Exceptions Detailed Analysis

Press Pit Pulper Pump Motor

Severity
MEDIUM

Analysis Date:

8-13-2013

Type:

AC Induction Motor

Explanation:

Polarization index is below IEEE 43 recommended minimum. Moisture build up is likely source. Leakage current during step voltage test is elevated indicating insulation degradation.

Fault:

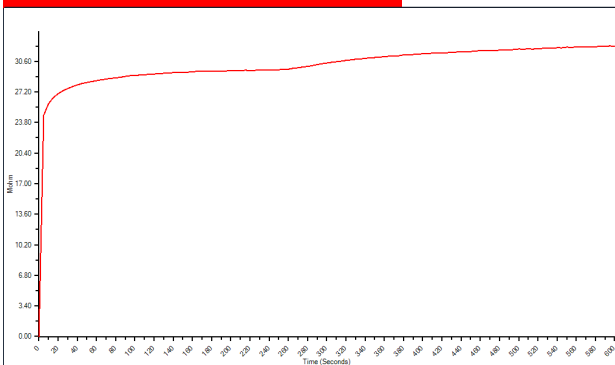
Stator PT; Leakage Current

Test Date	8/13/2013
Test Time	11:30:46 AM
Test Location	T-Leads
User	Administrator
	Baseline
Frequency	1200
Charge Time	600
Voltage	500
Motor Temp	38
Measured Mohm	28.44
Corrected Mohm	24.80
pF Ph 1 to Ground	68750
ohm Ph 1 to 2	0.08800
ohm Ph 1 to 3	0.08750
ohm Ph 2 to 3	0.08800
mH Ph 1 to 2	4.320
mH Ph 1 to 3	4.935
mH Ph 2 to 3	4.795
Average Inductance	4.683
% Res. Imbalance	0.38
% Ind. Imbalance	7.76
D/A Ratio	1.03
Polar Index	1.14

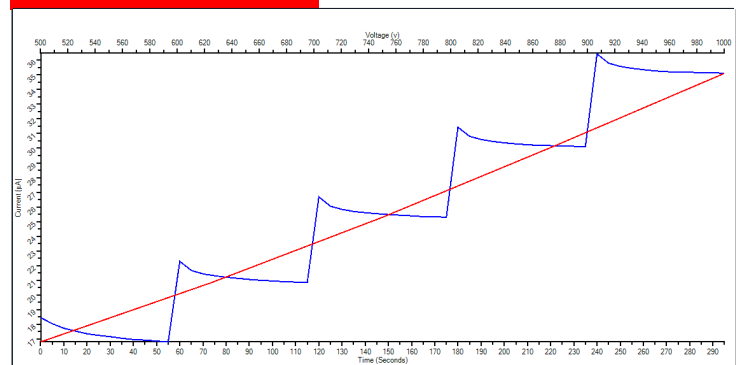
Recommendations:

- Utilize motor heaters during shutdown.
- Re-Test within 6 months and trend for condition.

Polarization Index Graph



Step Voltage Graph



Exceptions Detailed Analysis

Short Fiber Thickener Motor

Severity
MEDIUM

Analysis Date:

8-13-2013

Type:

AC Induction Motor

Explanation:

Elevated Inductive imbalance is possible indication of rotor, stator, air gap faults and/or unique motor design.

Fault:

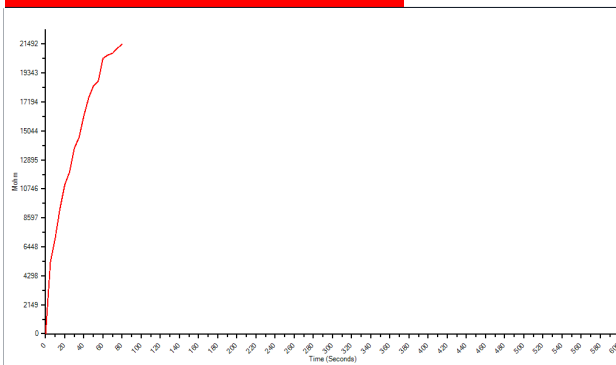
Inductive Imbalance

Test Date	8/13/2013
Test Time	4:37:06 PM
Test Location	T-Leads
User	Administrator
	Baseline
Frequency	1200
Charge Time	600
Voltage	500
Motor Temp	38
Measured Mohm	20430.00
Corrected Mohm	17800.00
pF Ph 1 to Ground	38250
ohm Ph 1 to 2	0.07250
ohm Ph 1 to 3	0.07250
ohm Ph 2 to 3	0.07250
mH Ph 1 to 2	6.295
mH Ph 1 to 3	5.480
mH Ph 2 to 3	6.380
Average Inductance	6.052
% Res. Imbalance	0.00
% Ind. Imbalance	9.45
D/A Ratio	1.49
Polar. Index	N/A

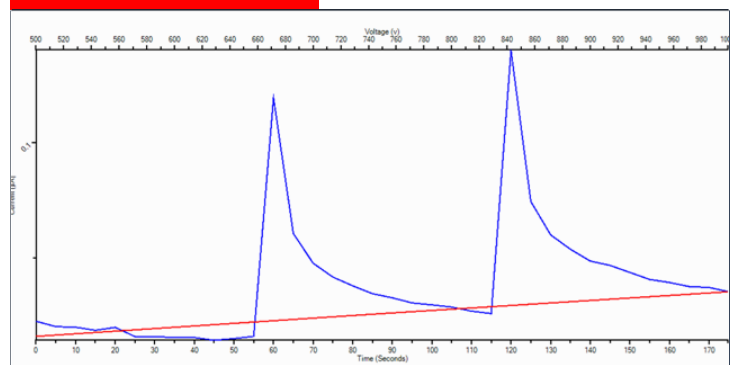
Recommendations:

Conduct re-test within 3 months and trend for condition

Polarization Index Graph



Step Voltage Graph



Exceptions Detailed Analysis

Saveall Repulper Motor

Severity **LOW**

Analysis Date:
8-13-2013

Type:
AC Induction Motor

Explanation:
Polarization index is below IEEE 43 recommended minimum. Moisture build up is likely source.

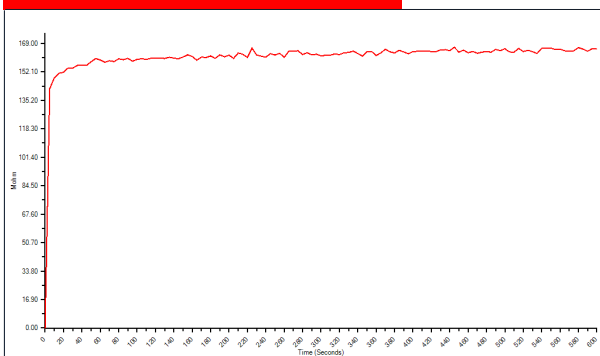
Fault:
Stator PI

Test Date	8/13/2013
Test Time	9:33:58 AM
Test Location	T-Leads
User	Administrator
	Baseline
Frequency	1200
Charge Time	600
Voltage	500
Motor Temp	38
Measured Mohm	159.10
Corrected Mohm	139.00
pF Ph 1 to Ground	14000
ohm Ph 1 to 2	2.34500
ohm Ph 1 to 3	2.34000
ohm Ph 2 to 3	2.35000
mH Ph 1 to 2	75.050
mH Ph 1 to 3	71.150
mH Ph 2 to 3	71.250
Average Inductance	72.483
% Res. Imbalance	0.21
% Ind. Imbalance	3.54
D/A Ratio	1.03
Polar. Index	1.04

Recommendations:

Utilize motor heaters during shutdown. Re-test within 6 months and trend for condition.

Polarization Index Graph



Step Voltage Graph

