

Plant Services

PERFORMANCE | RELIABILITY | EFFICIENCY | ASSET MANAGEMENT

Condition Monitoring Implementation Survey

March 03, 2009

1. Please indicate your current and/or planned use of the condition monitoring technologies listed below during the next 12 months.
(please check all that apply)

Item	Use now	Plan to increase use	Plan to implement	Total
Vibration	72.3%	13.5%	14.2%	148
Thermal imaging	67.9%	20.4%	11.7%	162
Temperature (contact)	80.6%	12.7%	6.7%	134
Oil/fluid analysis	77.6%	13.2%	9.2%	152
Power monitoring	59.4%	23.2%	17.4%	138
Current signature analysis	42.3%	24.4%	33.3%	78
Ultrasound	59.1%	17.4%	23.5%	115

Total responses to this question: 182

2. Please indicate your current and/or planned use of the condition monitoring technologies listed below during the next 12 months.
(please check all that apply)

Item	Continuous Monitoring	Monitoring at intervals	Total
Vibration	31.0%	69.0%	145
Thermal imaging	8.3%	91.7%	156
Temperature (contact)	48.9%	51.1%	139
Oil/fluid analysis	10.7%	89.3%	150
Power monitoring	58.7%	41.3%	126
Current signature analysis	20.6%	79.4%	68
Ultrasound	7.7%	92.3%	104

Total responses to this question: 180

3. Please indicate your current and/or planned use of the condition monitoring technologies listed below during the next 12 months. (please check all that apply)

Item	In-house capabilities	Outsourced services	Total
Vibration	65.8%	34.2%	149
Thermal imaging	67.9%	32.1%	156
Temperature (contact)	93.4%	6.6%	136
Oil/fluid analysis	20.1%	79.9%	149
Power monitoring	82.5%	17.5%	126
Current signature analysis	52.8%	47.2%	72
Ultrasound	64.5%	35.5%	107

Total responses to this question: 176

4. Please indicate your current and/or planned use of the condition monitoring technologies listed below during the next 12 months. (please check all that apply)

Item	On-site Monitoring	Remote Monitoring	Total
Vibration	90.8%	9.2%	142
Thermal imaging	94.0%	6.0%	151
Temperature (contact)	91.4%	8.6%	128
Oil/fluid analysis	69.9%	30.1%	133
Power monitoring	85.4%	14.6%	123
Current signature analysis	73.1%	26.9%	67
Ultrasound	87.8%	12.2%	98

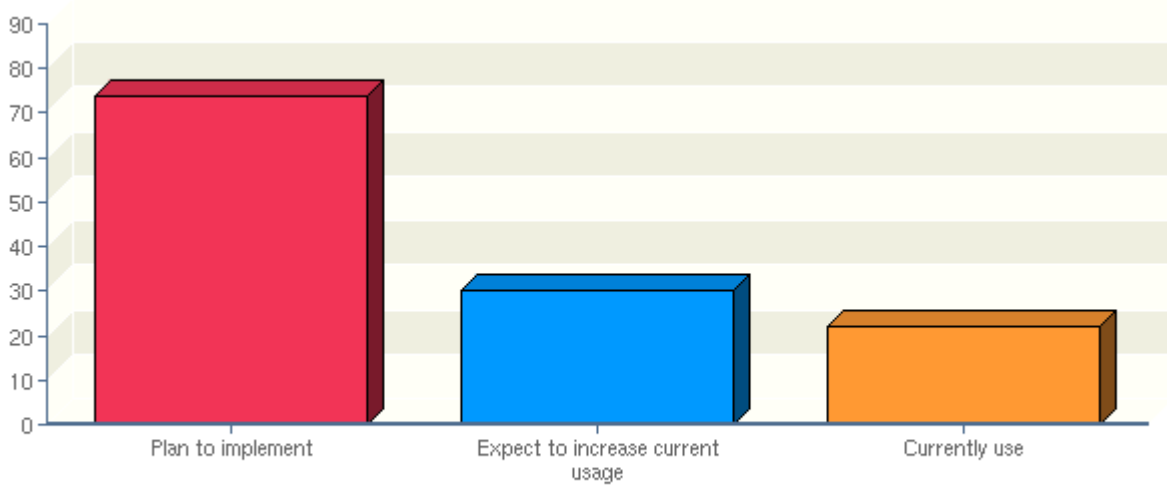
Total responses to this question: 174

**5. What barriers do you face in implementing the technologies listed below?
(please check all that apply)**

Item	Vibration	Thermal Imaging	Temperature	Oil/ fluid	Power monitoring	Current Signature Analysis	Ultrasound	Total
Equipment costs too much	22.8%	35.9%	4.3%	9.8%	6.5%	7.6%	13.0%	92
Can't quantify benefits	11.0%	7.7%	12.1%	4.4%	17.6%	28.6%	18.7%	91
Can't calculate ROI	9.4%	12.5%	7.8%	9.4%	20.3%	21.9%	18.8%	64
ROI not high enough	9.5%	12.7%	7.9%	6.3%	14.3%	22.2%	27.0%	63
Can't communicate benefits/ROI	20.0%	13.8%	6.2%	4.6%	9.2%	21.5%	24.6%	65
Don't understand the technology	4.3%		5.7%	7.1%	7.1%	54.3%	21.4%	70
Manpower not available	25.6%	16.3%	2.3%	16.3%	8.1%	16.3%	15.1%	86
Personnel lack skills	30.1%	12.0%	2.4%	14.5%	8.4%	15.7%	16.9%	83
Don't need it	7.0%	7.0%	12.7%	8.5%	7.0%	21.1%	36.6%	71

Total responses to this question: 163

6. What are your plans for using wireless technology for condition monitoring?



Item	Count	Percent %
Plan to implement	74	58.73%
Expect to increase current usage	30	23.81%
Currently use	22	17.46%

Total responses to this question: 126