Tango Reliability Management News

24/7 Systems, Inc.

In This Issue

Measuring Condition-Based Maintenance Effectiveness with Tango Web Service - Part 1

Many industrial plants have technically proficient predictive maintenance programs using technologies such as vibration analysis, IR thermography, and motor testing. However, those same plants often struggle with knowing how well condition monitoring results are being used to drive maintenance execution.

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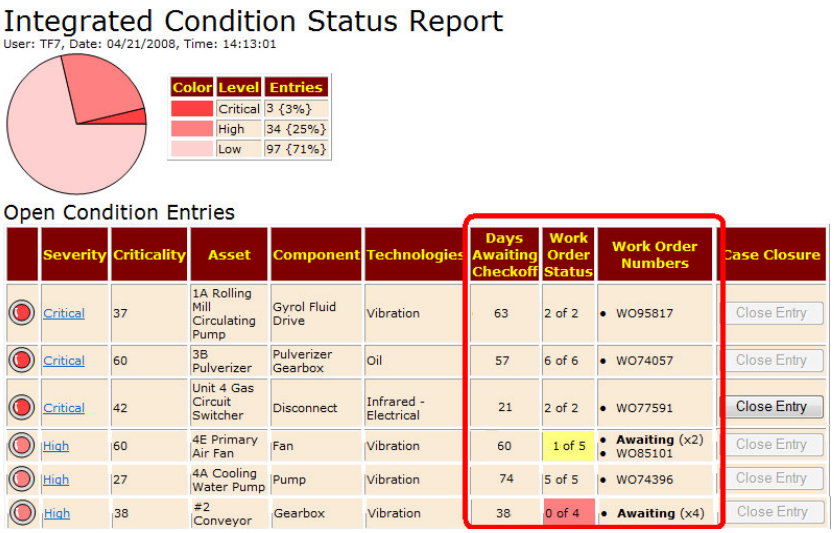
One measure of condition-based maintenance effectiveness is trending the time from problem identification to work order closure and confirmation.

All too often a plant's condition monitoring team (or service contractor) may report on the same equipment health problem time after time for many months, yet the maintenance organization does not respond until the equipment actually fails. Successful condition-based maintenance organizations create accountability for resolving condition-based work requests. For example, reliability engineering at the Indiana power plant of a major metals producer set a 2008 goal to drive the average time for completing condition-based work requests from 120 days down to less than 90. At Eastman Chemicals in Kingsport, operations and maintenance managers receive monthly reports that compare the condition-based work performance in each of their areas. Both organizations use Tango Web Service to produce and communicate those metrics to a broad plant audience.

Tango Web Service integrates the results from all condition monitoring activities in a single database, and communicates the status of condition-based work requests through a web browser. Having all the results, including those coming from service contractors, in a single web-hosted database makes it easy to create and distribute condition-based work metrics.

The metrics begin with the Integrated Condition Status Report (ICSR). Users can sort to show the highest severity or criticality issues at the top, and planners can interact with the report to show that work orders have been issued or completed. This interaction makes it convenient to update work order status, and that in turn provides current information every time a user opens the ICSR (Fig 1). The "Days Awaiting Checkoff" column provides an aging statement showing how long each identified problem has been open; the "Work Order Status" and "Work Order Numbers" columns show if work orders have been generated, and the reference number in the plant's CMMS. The broad distribution of this status information helps drive the accountability mentioned earlier. Once all the condition driven work orders for an asset component have been closed, the 'Close Entry' button alerts users that it's time for a follow up measurement to confirm the problem has been eliminated.



Integrated Condition Status Report

User: TF7, Date: 04/21/2008, Time: 14:13:01

Color	Level	Entries
	Critical	3 {3%}
	High	34 {25%}
	Low	97 {71%}

Open Condition Entries

	Severity	Criticality	Asset	Component	Technologies	Days Awaiting Checkoff	Work Order Status	Work Order Numbers	Case Closure
	Critical	37	1A Rolling Mill Circulating Pump	Gyrol Fluid Drive	Vibration	63	2 of 2	• WO95817	Close Entry
	Critical	60	3B Pulverizer	Pulverizer Gearbox	Oil	57	6 of 6	• WO74057	Close Entry
	Critical	42	Unit 4 Gas Circuit Switcher	Disconnect	Infrared - Electrical	21	2 of 2	• WO77591	Close Entry
	High	60	4E Primary Air Fan	Fan	Vibration	60	1 of 5	• **Awaiting** (x2) • WO85101	Close Entry
	High	27	4A Cooling Water Pump	Pump	Vibration	74	5 of 5	• WO74396	Close Entry
	High	38	#2 Conveyor	Gearbox	Vibration	38	0 of 4	• **Awaiting** (x4)	Close Entry

Figure 1 - Integrated Condition Status Report

All of these updates are captured in the Tango database, so a user can also run a Condition Entry Analysis to see the current metrics. This analysis shows several trends:

·Number of condition entries opened each month
·Number of condition entries closed each month
·Average number of days to close condition entries, by month
·Number of condition entries that remained open on last day of each month

For example, in the Condition Entry Analysis shown below (Fig. 2), condition-based maintenance effectiveness is in good shape at this plant. The trend for time to close condition entries shows that the plant is consistently responding to condition-based work requests within one to two months. Filtering the analysis by discrete areas of maintenance responsibility would be helpful in identifying outstanding team performance or further opportunities for improvement.

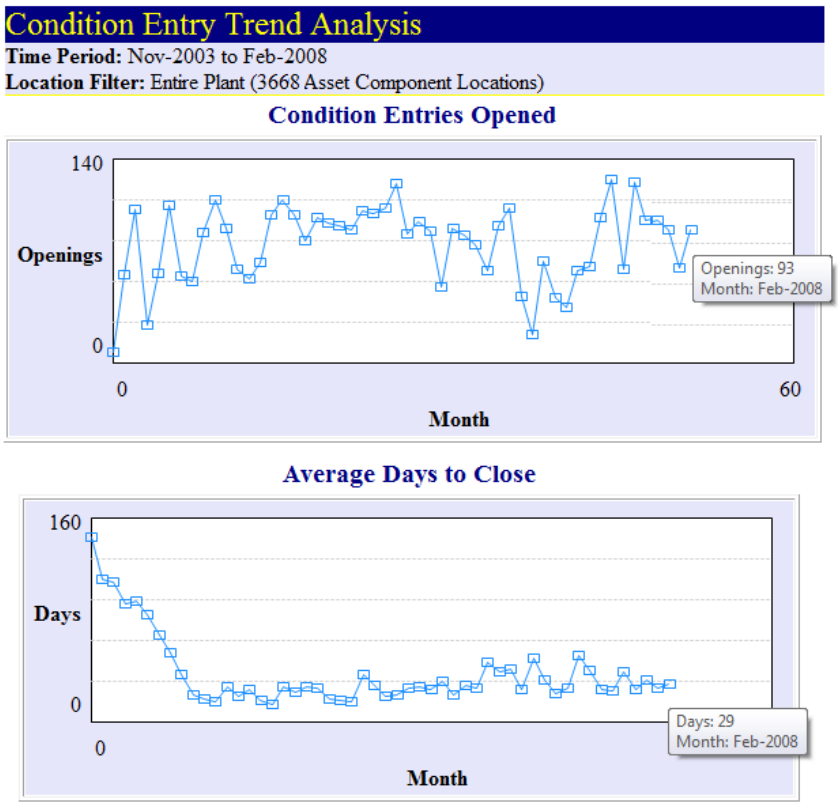


Figure 2 - Condition Entry Analysis Reports

Learn more about Tango Web Service at www.tf7.com, or call Forrest or Dick at 865-681-0282 to discuss Condition Entry Analysis for tracking your condition-based maintenance effectiveness.

New Features In Tango

The Condition Assessment Report Search has been improved. Now you can view open condition entries effortlessly by clicking on the report results. This feature lets you save time by quickly getting you to the problem areas.
You can also go directly to open assignments and enter data, directly from the search.

You can also view open condition entries directly from the condition assessment data entry window. This allows you to close a condition entry for a component that has been assessed in a good state, without exiting out of the assessment.