Bridging the Gap between Condition Monitoring Reports & Maintenance Action

Many industrial plants focus on training their condition monitoring analysts to high levels of technical proficiency, or search for service contractors with that capability – and then pay little attention to developing a process to ensure that the condition information drives an appropriate maintenance response.

Tango Web Service, in a supplemental role to the plant's CMMS system, can streamline the flow of equipment condition status between analysts, reliability engineers, and maintenance planners.

A couple of years ago one maintenance specialist at an automobile assembly plant in the Southeast would spend several hours each Tuesday reviewing e-mail reports coming from condition monitoring contractors providing vibration, oil, IR thermography, and ultrasonic analysis. After wading through the different formats and severity scales for each technology report, he would make decisions about which assets needed work orders in their SAP system.

Now his service contractor, Reliability Maintenance Inc. (RMI), uses Tango Web Service to communicate condition monitoring results. This forces the use of standardized reporting format, severity codes, and fault descriptions across all monitoring technologies. As soon as the RMI analyst enters information about a high severity problem, the web system notifies the maintenance specialist by e-mail and he uses his web browser to open the Integrated Condition Status Report (ICSR) for details (Fig 1). The components with the highest severity problems are at the top of the list, and he can quickly see if other technologies have also reported a problem with that asset. He can drill down into findings and recommendation details, plus open any supporting documents such as vibration spectra or thermography images.
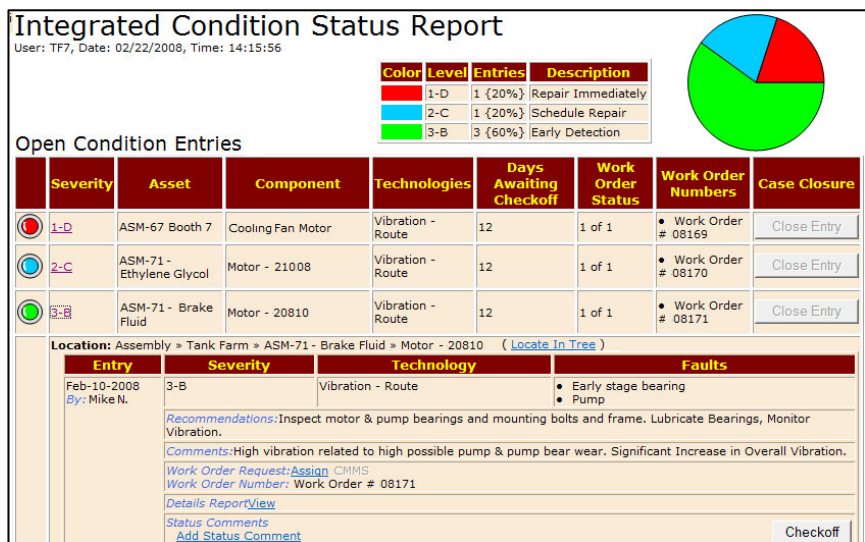

Fig 1: Web report highlights assets with condition problems, along with the analyst's detailed findings, recommendations, and work order status.

The maintenance specialist says he appreciates the timeliness of the e-mail notification, and the convenient web access for checking out the reported problem. Now, instead of waiting for his Tuesday review, he's able to generate the SAP work orders throughout the week as they come up. "I always include the ICSR information in the work order", as well as a copy of the linked IR thermography image, to help out the assigned work team.

Now this maintenance specialist doesn't have to wade through different technology reports each week to decide what work orders to generate, so he uses his Tuesday review to look at the status of open condition-based work orders and check off those that have been completed. He includes comments taken from the work order summary (Fig 2), and RMI's analysts really appreciate the feedback.

According the Mike Newman, vibration analyst for RMI, it's hard to get enough feedback on maintenance actions at most plants. "I mark sensor locations on a piece of equipment with yellow paint dots to make sure measurements are consistent - so if the yellow dots aren't there I can tell that the equipment has been changed out. Then I have to find the maintenance supervisor to see if I got the call right". With the feedback Tango Web Service provides, Newman is able to check the work comments in the ICSR and save himself some time.

Fig 2: Monitoring analysts appreciate feedback letting them know what happened with a condition call.

RMI has been communicating condition monitoring results with Tango Web Service for about one year, and it appears to be helping the maintenance specialist drive condition-based maintenance work at the automotive plant. For most of 2007 the average time from condition call to work order closure exceeded 60 days; since fall 2007 it has averaged around 40 days, even when the number of condition calls jumped in December due to monitoring some additional equipment (Fig 3).

Learn more about Tango Web Service at www.tf7.com, or call Forrest or Dick at 865-681-0282. To contact RMI, call Jimmy or Mike at 828-696-4960.
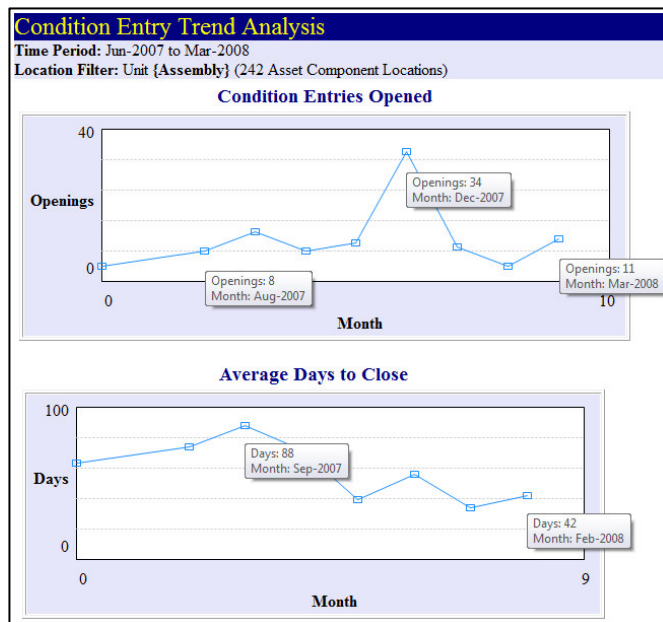

Fig 3: Maintenance response time has been driven down.