Avoiding Run to Failure- Development of a Program for Wastewater Treatment Plant Preventative Maintenance Standardization

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Large rail networks require numerous fixed facilities across their systems to support their operations and necessarily include waste water treatment facilities (WWTF) in many of these locations. Often the systems and equipment in these facilities have developed over several decades and involved multiple managers, contractors, vendors and consultants over that time. As with any well intended program, the railroad industry faces many challenges, including varying levels of knowledge and experience amongst employees, less than full time attendance at facilities, and locally developed programs that do not have corporate standardization. Within the CSX Transportation (CSXT) network, preventative maintenance and inspection (PM&I) programs are a key element to maintaining operations and environmental compliance. PM&I programs develop a consistent system and avoid or mitigate consequences of equipment failure, extend the useful life of the equipment, and assist site operations with meeting compliance regulations.

CSXT evaluated their current PM &I program at their WWTFs and recognized the opportunities for improvement and initiated procedures to standardize the PM&I while encouraging a network culture of proactive operations at the WWTFs. The project objectives were to develop standardized PM&I forms that were intuitive to use and met PM&I requirements, while still maintaining unique characteristics for equipment relevant at each facility. It was extremely important to develop documentation that would allow personnel unfamiliar with a facility treatment system to have tools and easy to use documentation in place that allow for successful operation and maintenance of the facility.

Many sites across the CSXT network do not have full time personnel and Environmental Field Services (EFS) managers support each other across regions. The EFS team developed document templates that could be used and understood by personnel unfamiliar with a facility. These documents included daily monitoring tasks, and monthly, quarterly and annual PM&I checklists. In addition to the lists, the program included a standardize flow schematic for each WWTF and a photo log containing pictures and descriptions of significant equipment or infrastructure.

During the development phase of the documentation, the team faced many challenges. Each site traditionally operated its current PM&I program differently, including the use of maintenance departments, union and non-union resources, or outside contractors. The standardized documentation did not eliminate personnel, but it provided a platform to ensure maintenance requirements were being met in a format that is simple for management to monitor.

At this time, CSXT continues to expand the PM & I program to encompass additional WWTFs, specifically those with a "maintenance" requirement as part of their municipal discharge permits. CSXT is also planning to convert to electronic documents, which would eliminate paper usage, allow PM&I documentation to be instantly available to management, and decrease personnel field time. The success 2 of this program has been evident even in the early phases and has been validated through feedback from both CSXT personnel and maintenance contractors and support staff.