Damage Management Locations

Don’t Just Monitor Damage – Manage It

Inspectors within the refining, petrochemical, and other industrial processing industries conduct several types of non-destructive examinations to determine component thickness and monitor various damage mechanisms. A significant challenge when applying the inspection results to asset integrity is that thickness is not an indicator of several damage types, including brittle fracture, crack-like flaws, creep, or even mechanical damage.

Equity Software’s® MAWP Approach

Using our expertise in fitness-for-service (FFS), Equity’s groundbreaking new maximum allowable working pressure (MAWP) approach aligns with API 579-1ASME FFS-1 standards, ensures integrity with continued operation, and works with the damage classes listed in API 579. MAWP versus temperature versus time provides owner-users the data they need to make informed run decisions.

Our damage management location (DML) workflow, available exclusively in PlantManager ASSET™, uses MAWP to determine inspection schedules from FFS assessment results, inspection data, and condition monitoring location (CML) data to proactively manage risk and optimize equipment performance. PlantManager ASSET automates and guides the appropriate damage data collection and seamlessly incorporates FFS calculations to support informed engineering decisions as well as delivers a complete view of the components for accurate inspection planning.

Equity’s new methodology will help facilities effectively extend asset life, minimize unplanned shutdowns, and improve overall safety and reliability across industrial facilities.

> OUR CLIENTS REPEATEDLY ASK US, “AT WHAT PRESSURE AND COINCIDENT TEMPERATURE AND FOR HOW LONG CAN I SAFELY OPERATE PER JURISDICTIONAL REQUIREMENTS?” IT’S ALL ABOUT PRESSURE, TEMPERATURE, SAFETY, AND HOW LONG THE EQUIPMENT WILL RUN. **DMLS ARE THE ONLY WAY TO ANSWER THIS FUNDAMENTAL QUESTION.**
>
> *David A. Osage, President & CEO, Equity*

Increase production

Comply with jurisdictional requirements

Improve operational safety

Inspection Monitoring Techniques

Damage Management Locations (DMLs)

Definition: DMLs use MAWP to determine inspection schedules from FFS assessment results, inspection data, and CML data.

Accounts for general thinning, local thin areas (LTA), pitting, stress-oriented hydrogen-induced cracking (SOHIC), cracking, creep, etc.

Benefits:

- Effectively extend asset life
- Minimize unplanned shutdowns
- Improve overall safety and reliability across industrial facilities

Condition Monitoring Locations (CMLs)

Definition: CMLs are specific locations on pressure vessels and piping where monitoring is conducted to observe potential damage and corrosion.

Benefits:

- Quality check circuitization
- Quantify localized and generalized corrosion
- Apply informed corrosion rates to RBI program

Thickness Management Locations (TMLs)

Definition: TMLs are a specific place on a piece of equipment or component where thickness measurement readings and minimum thickness calculations are taken.

Thickness is not an indicator for brittle fracture, crack-like flaws, creep, or mechanical damage.

Benefits:

- Establish long- or short-term corrosion rates

IDMS: PlantManager ASSET®

Across the industry, commercially available inspection data management systems (IDMS) and asset integrity management systems (AIMS) both lack the construction code and FFS calculation capabilities to implement the MAWP approach required for inspection scheduling. PlantManager ASSET is the only cloud-native platform that provides end-to-end asset lifecycle management capabilities by managing inspection activities, recording DMLs, and calculating fully quantitative API 581 risk assessments for inspection optimization.

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