

Special Emphasis Programs by MISTRAS

Sulfidation Corrosion Detection Program

Project Scope



Program Desian



Reporting

Sulfidation corrosion is a naturally occurring result of chemical reactions in crude oil, attacking carbon steel and other alloys used in refining equipment. Difficult to predict and costly to repair, sulfidation can cause corrosion failures in your piping, heater tubes, pressure vessels, and other oil refining equipment.

A successful sulfidation corrosion detection program can help you avoid these threats while cost-effectively protecting your asset's integrity. As the industry's leading onesource provider of asset protection solutions, MISTRAS Group has developed an effective three-phase program, customizable to your facility's needs. Our subject matter experts (SMEs) integrate expertise in engineering, non-destructive testing (NDT) inspection, mechanical services, access services, and data management for a value-added corrosion detection and mitigation solution.

Project Scope, Applicability, and Risk Assessment

In the initial assessment, SMEs will define the scope of the project by reviewing piping and other equipment for susceptibility to sulfidation (see flow chart on back). We'll prioritize vulnerable equipment through risk assessments based on material of construction, wall thickness program assessments, flow rates, and other concerns.

Initial Field Visit

After identifying and risk-ranking susceptible equipment, our API-certified inspectors conduct visual inspections to narrow down suspected sulfidation areas. Using unmanned drones or rope access technicians, our experts can inspect hazardous or limitedaccess areas to select the best inspection and testing methodology. We'll work with our clients to implement the most effective inspection plan for their facility (see back for the inspection technology that's right for you).

Field Inspection

MISTRAS SMEs implement and execute customized inspection plans using a variety of advanced and traditional techniques, along with performing any insulation stripping and re-insulation that may be required. We'll evaluate results and perform follow-up inspections, and deliver a report consisting of detailed procedure descriptions and test results. We're able to input these directly into your inspection database management system, including MISTRAS' Plant Condition Management System (PCMS®).

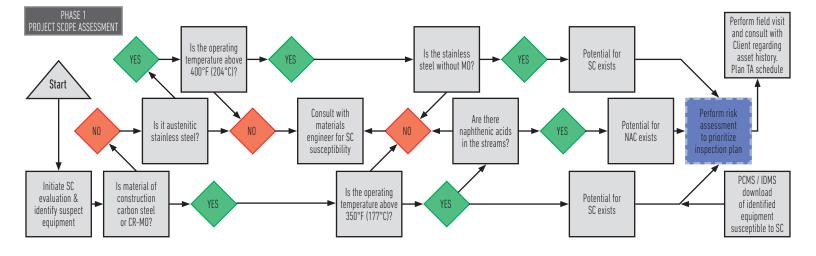
For more information about our comprehensive sulfidation protection programs, call (609) 716-4000 or visit www.mistrasgroup.com.

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	Results:	Advantages:	Applications:
Automated Ultrasonics	Quantitative thickness measurements	Adequate data for Fitness- for-Service Assessments	Small areas of piping, tanks, and vessels
Computed Radiography	Qualitative/Quantitative	 Accurate thickness measurements Identifies OD & ID conditions No insulation removal 	In-service piping
Electro Magnetic Acoustic Transducer (EMAT)	Quantitative	 High-temp (up to 1000°C) Continuous thickness scanning 	Rapid scanning of large components
Fluoroscopy (Real-Time Radiography)	Immediate quantitative results	 Identifies OD conditions No insulation removal No radiation hazards 	Long stretches of piping
Guided Wave	Semi-Qualitative	 Rapid 100% volumetric inspection of long lengths of pipe Limited insulation removal Accurate location of pipe features and corrosion High-temp (up to 650° F) 	Long stretches of piping
Pulsed Eddy Current (PEC)	Qualitative	 Fast No insulation removal High-temp capability Non-contact 	Carbon and low-alloy steel assets





SULFIDATION

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