# MFL Pipeline Inspection Services

Introduction

MFL In-Line Inspection (MFL-ILI) is a well-established inspection technology proven to provide accurate wall thickness measurements in ferrous pipelines. What sets the MFL inspection service offered by Russell NDE Systems apart from conventional MFL tools are the industry leading data sampling rate and sensor count for exceptional accuracy and repeatability. In addition, tools can be configured to be bi-directional to allow inspections from a single access point.

How it Works

Using rare-earth magnets, a strong magnetic field is imposed on the pipe wall parallel to the pipe axis. The magnetic flux lines prefer the path offered by the ferrous pipe, and are concentrated in the pipe wall. Under anomalous conditions the magnetic flux lines are deflected, and a "leakage field" is created if:
- there is metal loss within the pipe wall.
- there is ferrous material near the pipe wall.
- the properties of the pipe wall steel change.

A solid state sensor detects the leakage field, and the corresponding signals are stored for analysis.
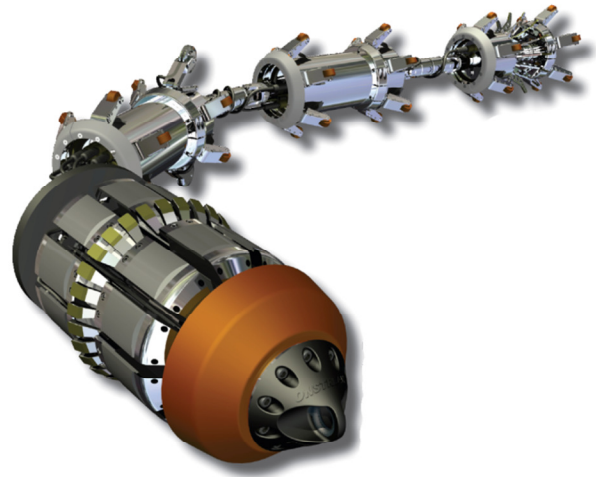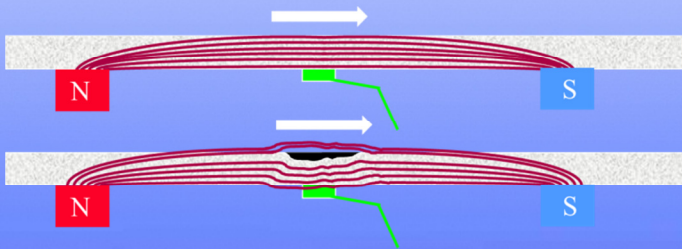
MFL-ILI Advantage

- Exceptional Accuracy and Repeatability through industry leading sampling rate and sensor spacing.
- High data quality in gas lines through low-drag and low-wear design.
- Wall thickness readings, High Resolution Multi Channel Geometry data and inertial navigation information all in the same run with a data sampling rate of 2mm.
- Deployable without launch and receive facilities (tools are bi-directional and can be tethered).
- Can inspect up to schedule 80 wall thickness.
- Acquires data up to 180m/min and for long lines (>200km).

Comprehensive Reporting Deliverables

All data obtained during a run is stored in a single data set. This seamless integration allows the pipeline operator to achieve a comprehensive overview of the pipeline's condition. Final deliverables include:

- Full Metal Loss Defect Analysis ranging from 10% - 80%
- ID/OD Discrimination
- Burst Pressure Calculations (using B31G and Modified B31G,)
- Exported Listings:
  - Joint, Marker Listings
  - Metal Loss Listing
  - Cluster Listing
  - Geometry Listing
  - Bend Listing
 - Wall Thickness Listing
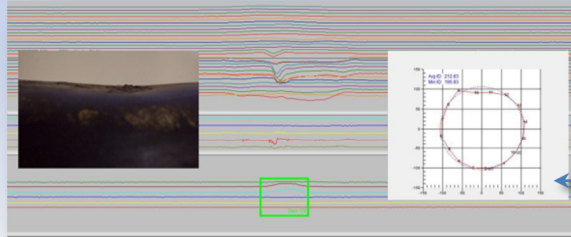
- Geometry Data:
  - Geometry Features vs. Distance
  - Wall Thickness vs. Distance
  - Speed vs. Distance
- Marker Map
- Dig Sheet Generator

By obtaining both the Geometry and Metal Loss data sets on the same odometer system there is no possibility of a distance error during analysis integration.

After an inspection, the above deliverables are presented on one hard copy and one electronic copy of the final report. All spreadsheet information is provided in Excel format for ease of manipulation. The complimentary Client Interpretation Software Package allows the client to view all data sets at one time on a single screen. This includes: Metal Loss including ID/OD, Geometry, Inertial (X,Y&Z) and Speed data, all at the same time.

Please contact us at one of the links below for more information.
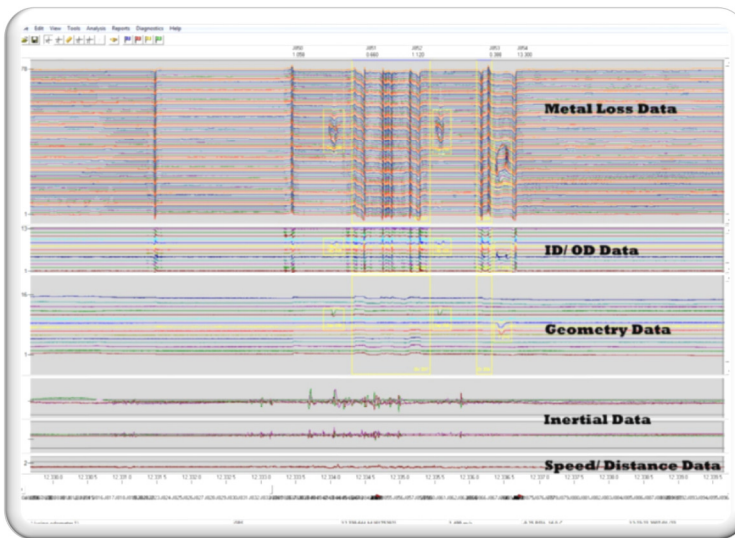
- Run Profile Charts:
  - Metal Loss Data
  - Defect Orientation vs. Distance
  - Metal Loss Depth vs. Distance
  - ERF vs. Distance
  - PSafe vs. Distance
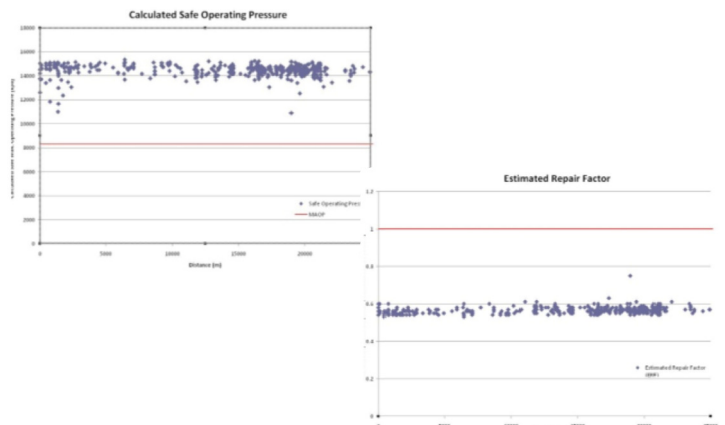
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