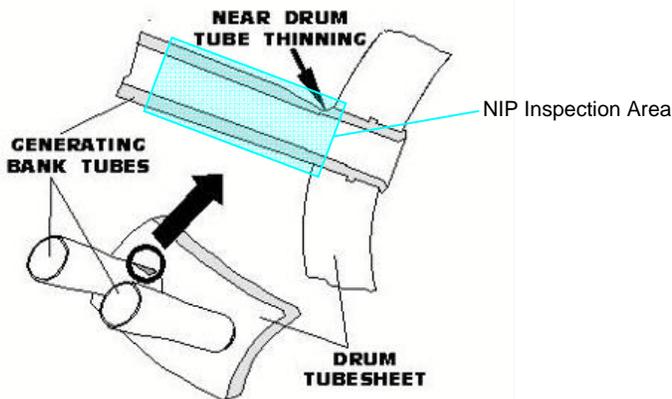


NIP – NEAR DRUM INSPECTION PROBE

System Description

The NIP data acquisition system uses a pulse echo ultrasonic technique and takes thousands of thickness readings circumferentially while traveling along the tube axis. It assembles this data into B-scans (edge profile of tube) and C-scans (plan view of unrolled tube). This is an effective method to represent the tube thickness data for analysis.

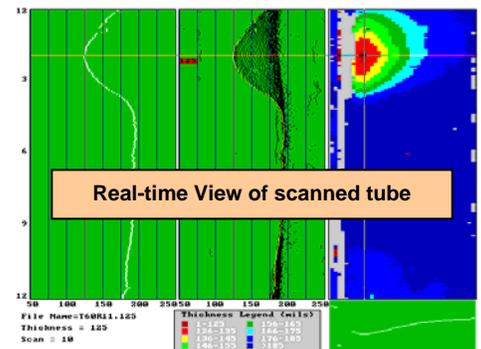


The NIP system scans start from approximately ¼" within the drum and extends up to 6" past the drum interface. The system is programmable to allow for varying resolutions and scan distances.

Why our system works

The NIP system is based on proven immersion ultrasonic techniques which do not rely on smooth tube inner tube surfaces or tubes with perfect roundness. The NIP system provides advantages over competitor systems which rely on perfect inner tube geometry.

The NIP system displays thickness data in real time while scanning enabling us to spot problem tubes immediately. Our trained NIP operators will see 3 different views of the tube data displayed to them while scanning the tube. The image to the right shows how the NIP system displays the tube



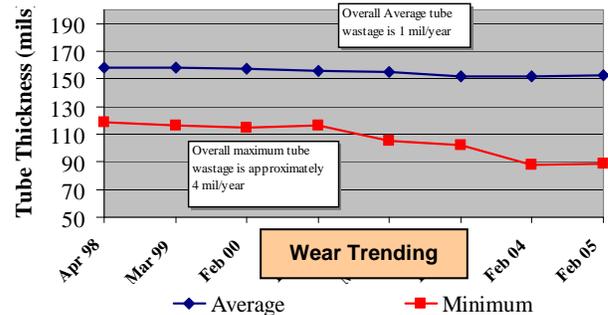
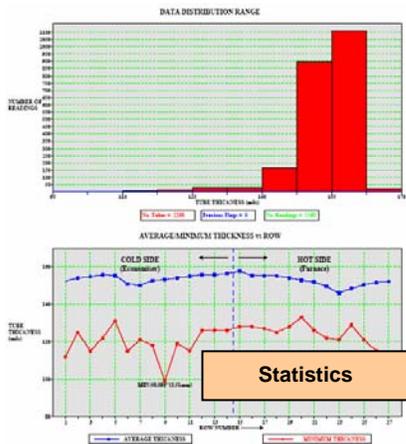
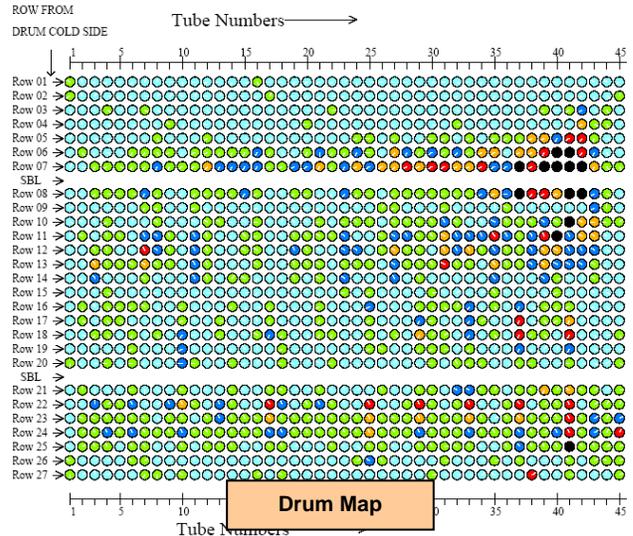
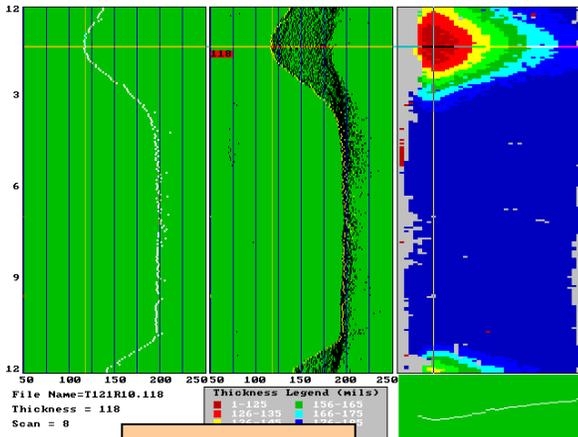
NIP inspection service

Our experienced staff is specifically trained in analyzing and interpreting NIP results. Your results will be tabulated and presented numerically or visually in a preliminary report on site, noting any problem areas or concerns. This report is followed by a full in-depth analysis of the data with statistical investigation (if multiple years are available), specific examples of problem areas, diagrams, and observations are cited with analytical analysis.

Because we analyze the results immediately after a tube is inspected we are able to alter the inspection scope to concentrate on problem areas. This is extremely valuable to our clients when doing a NIP survey under tight time constraints, which is often the case.

Reporting and Data Storage

NIP thickness survey reports include color-coded data maps which give our clients an overall view of the thickness data recorded in the survey. Reports also include sample images which have been proven to map directly to the physical state of the tube when compared with a micrometer. For repeat clients, we offer thickness loss trending information which is invaluable information in future maintenance planning.



All of the data is recorded, retained, and backup from our main servers in our head office for future reference. This allows us to compare NIP scans from year to year to determine wear trend rates. By providing our clients with this accurate and repeatable thickness data, they are able to predict tube wastage and plan accordingly. Several of our clients depend on the repeatable inspection results that the NIP system offers to plan their tube maintenance.

System Specifications

Test Materials:	Carbon Steels, Stainless Steels, Copper, Nickel, Titanium, Zirconium, Inconel, Hastelloy
Test Tube I.D.:	0.75 inch (13mm) to 4 inch (100mm)
Thickness Accuracy:	+/- 0.002 inches (0.05mm) for each thickness measurement
Rotational Resolution:	200 readings per circumference (rpc)
Linear Resolution:	up to 40 scans per inch of axial travel (spi)

About US

Stasuk Testing has been a leader in the NDE field for over 30 years. Our ultrasonic tube inspection engineering team is constantly improving the speed and accuracy of our NIP (near drum) and WIP (full tube length) tube inspection systems. Our team of engineers is always looking to improve our inspection systems and methods.

The Near-drum Inspection Probe (NIP) has been in use world wide for over 17 years. Stasuk testing originally develop this unique immersion system to detect corrosion in the steam generating bank near the tube sheet of the mud and steam drums. This area is inaccessible with standard inspection methods and was found to be a typical problem. Over the years, improvements to the speed and accuracy have been made to the NIP system and it still maintains its position as the industry standard for near-drum ultrasonic inspection. The NIP system is still in use world wide today. Our knowledge and experience in these areas enable us to assemble surveys that offer clear, accurate, concise information.

Contact Us

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