



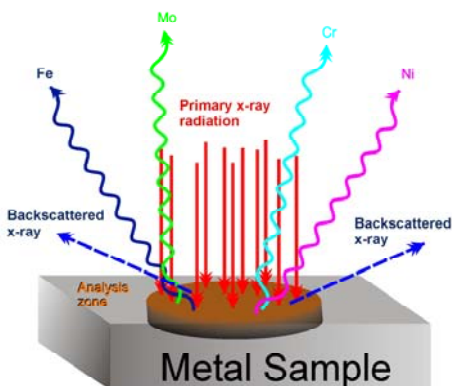
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Positive Material Identification

DCI, Inc. prides itself on our ability to meet and exceed our customer's expectations. One of these requirements is to provide material traceability of components built into our product. Inclusion of material test reports (MTRs) has been the accepted method over the years; however, it has been proven that mill certifications and heat markings alone can be unreliable. Since MTRs are generated at the mills that provide the raw stock, by the time the material reaches a manufacturer's facility, it may have been through many handling processes increasing the chances of error in the heat markings, therefore, the MTR may not be always trusted. This is becoming more common in the stainless steel and nickel alloy fabrication industries. DCI has quality procedures in place to document the material as it moves through our production process, however, the problem is in the identification of the material as it is received from suppliers. In an effort to have complete traceability of all materials, DCI has turned to the implementation of Positive Material Identification (PMI) to validate raw materials before manufacturing of our product begins. To do this DCI has utilized the latest technology using NITON® X-Ray Fluorescence (XRF) hand-held alloy analyzers to perform the analysis.

NITON's XRF alloy analyzers are portable hand-held devices that can perform a non-destructive test on

NITON XRF Analyzer Process



the material at any time in merely seconds. XRF works by exposing the material to a flux of x-rays. The atoms then absorb the energy and become temporarily excited and they fluoresce, or emit x-rays. The x-rays emitted by the sample's atoms possess clearly defined energies that are unique to the



PMI Testing of Components

elements present in the sample. By measuring the intensity and energy, the XRF instrument can provide qualitative and quantitative analysis. In other words, it can identify the elements, measure the concentration of each and display them on the unit. In using XRF, we can make Positive Material Identification. The data can be downloaded from the unit and saved for reference or creating reports. The data and NDT software of the NITON analyzers comply with FDA 21 CFR Part 11, which is a requirement for many of our customers.

DCI has developed and implemented an internal procedure for the PMI by XRF of raw materials, components, and parts. This procedure follows ASTM E1476 and includes calibrations to Certified Material References (CRMs) to verify that the material and documentation is correct before production begins. The performance and capabilities of the XRF unit and DCI's procedure guarantee reliable and accurate results. With the implementation of PMI, DCI has added another qualification of our vendors. DCI also performs PMI on the shop floor to ensure that the documentation remains intact during the manufacturing process. A customer can also request a final PMI of the finished product, in which reports can be provided as part of the turn-over-package. This eliminates the need for any additional inspection by our customers, to insure that the material specifications have been met.

PMI is also important for meeting the ASME Boiler and Pressure Vessel Code and the ASME Bioprocessing Equipment Standard, which both require mill certifications and complete material traceability. With PMI implementation, DCI continues process improvements and procedures to achieve our goal of providing higher quality products and it guarantees that we meet our customer's stringent specifications.

Positive Material Identification: Another value added feature you get from DCI, Inc.