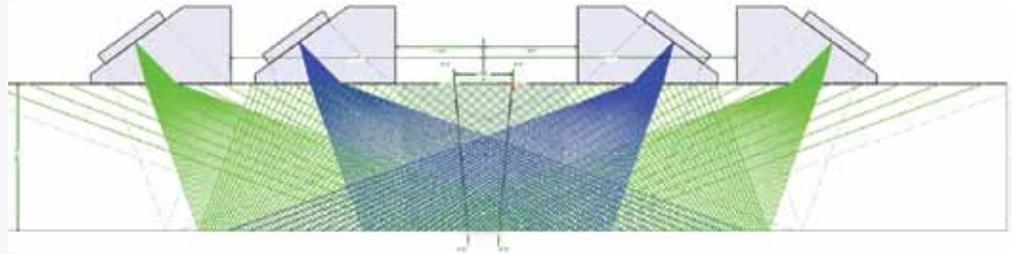


Structural Integrity Associates, Inc.[®]

Ultrasonic Examinations in lieu of Radiography commonly known as UT ILO RT

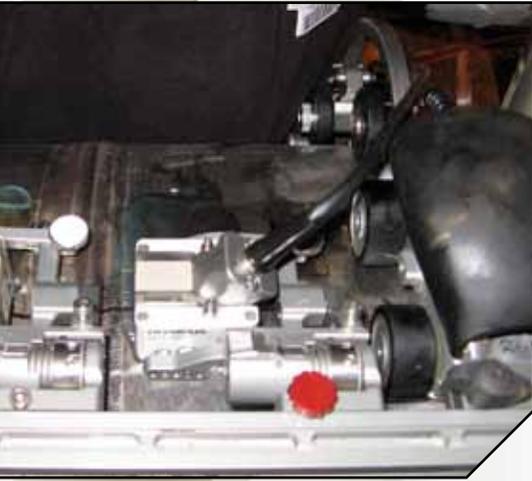


Ultrasonic examinations in lieu of Radiography have been in development since the 1980s when the US Navy started pursuing ultrasonics to replace radiography in the shipyards. The main reasons for this shift to ultrasonic examinations were to reduce the health and safety hazards to personnel associated with radiation and minimize the effects on schedule due to the evacuation of workers from the radiation areas. Significant work in the development of Code Rules for both ASME and ANSI code compliant ultrasonics has been ongoing since that time. ASME Sections I, III, V, VIII, XI, and XII as well as ANSI B31.1 and B31.3 have developed rules for the application of code compliant ultrasonics commonly referred to as UT ILO RT. Code Case 2235, which is now in revision 10, was released in March of 2012 and is applicable to ASME Code Sections I and VIII. During the time from the 1980s until now, many of the rules in code case 2235 and others were written to allow and control UT ILO RT. Some of the other Code Cases that have been developed over the years are 181 and 186, (applicable to B31.1/B31.3), N-659 (applicable to ASME Section III), and N-713 (applicable to ASME Section XI). Much of the information from these code cases has now been incorporated into the ASME and ANSI Code book sections.

The use of a specific inspection or examination method is dependent on factors which affect the safety, schedule, and cost of the project, personnel, or item being examined. Additionally the ability to detect and reliably evaluate the defects which are detrimental to the end-use of the item is of significant importance.

For many years the use of manual, conventional, single angle, amplitude based, ultrasonic examination and flaw evaluation was not considered as reliable as radiography. Radiography has long been preferred over ultrasonics based on the need for a permanent record, the ability to have third party review of examination data, along with the abilities of RT to find and evaluate certain types of fabrication related indications such as porosity, slag, and other volumetric indications. Radiography has traditionally been used to provide a permanent record which could be archived and reviewed by others as necessary during the life of an item or component.

Today, advanced linear phased array ultrasonics (LPA-UT) allow for the evaluation of porosity, slag, and other small volumetric indication as well as planar and laminar defects which radiography sometimes has trouble detecting and evaluating. The capability of recording the encoded phased array examination data also provides a permanent record for immediate review and future reference. The use of encoded LPA-UT now provides detection and evaluation abilities which meet or exceed those of radiography without the hazards or impact on schedule associated with radiation or evacuation of work areas.



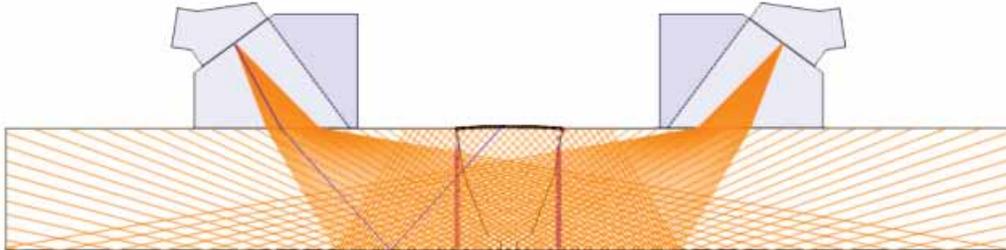
Visit our website at:
www.structint.com

Call Toll Free:
877-4SI-POWER
877-474-7693

For more information:
Email: info@structint.com

STRUCTURAL INTEGRITY ASSOCIATES' SOLUTION

With improvements in ultrasonic systems and processes, the use of advanced encoded linear phased array UT is increasingly proving to be of great benefit by removing the radiation hazards, reducing the impact on production and schedule associated with radiography. Application of encoded linear phased array ultrasonic technology and processes provides a permanent record with the ability for third party review of examination data, along with the ability for ultrasonics to detect and characterize the defects such as porosity, slag, and volumetric defects which are not reliably evaluated with the use of conventional ultrasonics or radiography.

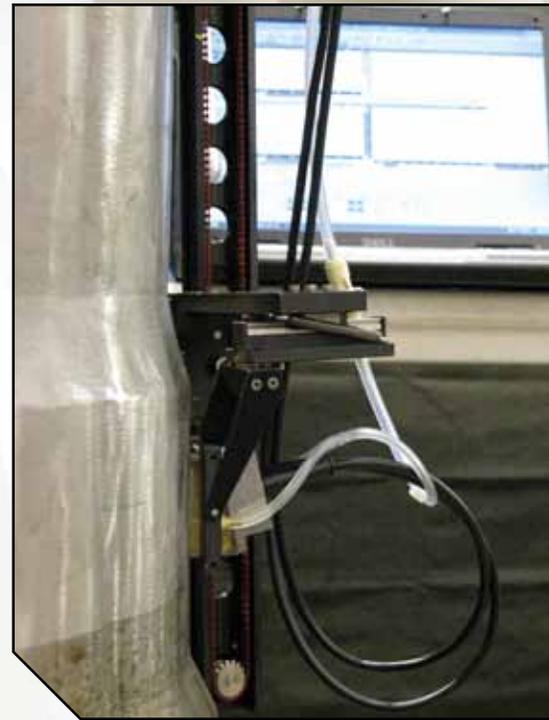


Structural Integrity Associates has been actively involved in the development of code compliant ultrasonics in lieu of radiography for repair and replacement as well as plant modifications in compliance with the ANSI and ASME Codes. Structural Integrity has also been active in development of rules for the application of code compliant ultrasonics. Structural Integrity can provide NDE Level III oversight and review of specific and complex applications as well as review of scan plans, focal laws, and essential requirements for code compliant ultrasonic examinations. Structural Integrity has worked with several clients to develop application of processes including modeling of expected flaws and configurations to ensure the examination will cover the volume needed and detect critical flaws. Structural Integrity also has the ability to develop specific flaw acceptance criteria where Code rules do not exist or are not applicable for these items. Structural Integrity has worked with several utilities in the application of UT ILO RT to support a reduction in outage schedule and to allow work to continue in the area during code compliant volumetric examinations. For the application of UT ILO RT for ASME Code Section III or Section XI purposes, the Nuclear Regulatory Commission (NRC) requires approval of a Relief Request prior to implementation of alternative examination techniques for repair/replacement activities. Structural Integrity Associates can assist with the development of NRC Relief Requests. We can also assist with the design and development of demonstration blocks used for demonstration of the capabilities of an ultrasonic techniques chosen for a specific applications.

SUMMARY:

Structural Integrity Associates has the ability and technology to provide our clients with:

- Code compliant ultrasonic (UT ILO RT) services
- Design of demonstration specimens
- Development of NRC Relief Requests
- Assistance in development of responses for NRC requests for additional information (RAIs)
- Development of computer modeling for design and demonstration of process through use of solid models and CIVA
- Development of procedures and processes for our clients and their personnel in the application of UT ILO RT
- Training for our clients and their personnel in the application of UT ILO RT
- Third Party Level III oversight or review of NDE services



Visit our website at:
www.structint.com

Call Toll Free:
877-4SI-POWER
877-474-7693

For more information:
Email: info@structint.com