

Industry Announcement...

**CIA
Inspection is
pleased to
announce it's
partnership with
S.H.I Examination
& Inspection Ltd.
(SEI) which is a
subsidiary of
Sumitomo Heavy
Industries LTD.
(SHI) to offer an
innovative NDE
inspection
technique for Coke
Drums and other
refinery vessels**



**CIA INSPECTION
INC.**

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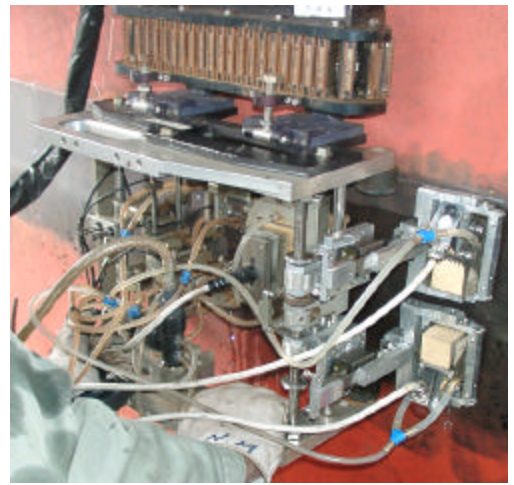
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Automatic UT for Coke Drums Phased Array (PA) and Dual TOFD Simultaneous Inspection

Along with CIA Inspection Inc., the world leader in coke drum inspection, SHI Examination & Inspection Ltd. (SEI) would like to bring this shop proven inspection technique to the international market.

Performed externally, this new "Phased Array and TOFD Simultaneous Ultrasonic System" offers more accurate detection and sizing of flaws in both circumferential and longitudinal welds of coke drums.

Since TOFD has an accurate flaw sizing capability, it is possible to monitor flaw propagation by the periodical scanning of the welds at the turnaround stage. This work can even be performed on line providing certain conditions are met.

Phased Array can detect defects in the clad restoration welds much better than TOFD and can detect and size low cycle fatigue cracks that have occurred in the clad restoration weld and its heat affected zone.



PRE-SERVICE INSPECTION



OUT OF SERVICE INSPECTION

Generally, 2-3 circumferential weld seams can be inspected by Phased Array and Dual TOFD simultaneous inspection in a single day (8–10 hours) during the beginning of a turnaround or out of service state. In preparation, the insulation needs to be stripped and all dirt, scale, etc. must be removed from the weld seams and adjacent base metal.

Phased Array cannot be applied when surface temperature exceeds 50 degrees C, however, if requested, TOFD can be applied during the operating cycle at high temperature, if the actual metal temperature range during the allowed inspection is known in advance to allow optimal setup.

This inspection technique has been applied to coke drums but is also suited to other plate fabricated vessels in the refinery.

Deliverables:

Within two (2) weeks of the completion of the inspection, a CD containing the electronic files of the AUT scanning data and a summary of the inspection results with regards to ASME Code Case 2235-6 will be given to the customer.

While on site, any detected concern or unacceptable flaws based on ASME Code Case 2235-6, will be brought to the attention of the customer.

What is Phased Array?

Phased Array is a technique that uses ultrasonic probes controlled by a computer to fix beam angle, focusing distances and number of active probe elements.

Phased array can display three dimensional views of each detected flaw even if only parallel scanning is conducted.

Phased Array can clearly detect and size the low cycle fatigue cracks occurring at the clad restoration weld and it's heat effected zone.