



Heater Inspection Services

Maintaining the integrity of your installation with minimum downtime

Regular cleaning and inspection of your heater increases its reliability and continuity. Knowing the remaining wall thickness and line cleanliness of the tubes can also lengthen the lifecycle of the heater tubes and prevent unwanted shutdowns.

Intero offers an intelligent, free-swimming tool that is capable of 100% inspection of the tubes and bends of your heater, with a minimal impact on shutdown time.

High Quality Ultrasonic Heater Inspection

As a plant operator, a major challenge is keeping heaters in optimal condition to prevent unwanted shutdowns. Our vision is to help plant owners optimize assets efficiently, use natural resources responsibly, as well as constantly maximize safety.

At Intero, we use state-the-art-technology to perform accurate, ultrasonic tube wall thickness measurements; whether the tubes are smooth, studded, or finned. Our approach uses an intelligent free-swimming tool, resulting in minimal impact on shutdown time.

Unlike traditional, manual UT instruments, the Intero Heater Surveyor inspects 100% of the heater tube, providing you with the comprehensive data you need to make informed decisions.

Our storage of raw A-scan data enables highly accurate, reliable data analysis. When inspection is combined with decoking, it is possible to guarantee the cleanliness of the heater tubes. In addition, during cleaning, periodic verification runs can be used to demonstrate the cleanliness of the tubes, optimizing the maintenance campaign by decreasing wear on the tubes and potentially reducing overall downtime of the heater.

By knowing the condition of the coils and the heater's operating parameters, additional engineering analysis can be applied to calculate the remaining life of the heater, confirm that the heater is Fit for Purpose, and a more-informed maintenance/replacement strategy can be developed. A better understanding of your asset's condition will lead to improved operations and lifespan.



Cokeskans

In addition to corrosion, deformity, and wall-loss concerns; it is vital to start the run of a heater knowing that the tubes are properly cleaned and no damage has been caused to the tubes during cleaning.

By combining our expertise in ultrasonic inspections with our experience decoking heaters, Intero offer a unique service called a "Cokeskan" to determine the location and thickness of any remaining coke on the tubes near the end of a decoking program. This allows for a more focused and targeted cleaning program and, if needed, development of an optimized burner set-up.

3"-12"
(7.6-30.5 cm)
Range of Tools

25 years
Comprehensive
Experience

13 miles
(21 km)
Biggest Heater
Inspected

800+
Successful
Inspections

Features and Capabilities

- Bidirectional, compact, lightweight, modular design
- Inspect diameters from 3"-12"
- Capable of passing an unlimited number of 1.0 D 180° (smaller on request)
- Capable of passing plugged headers
- Ability to modify the tool for specific situations



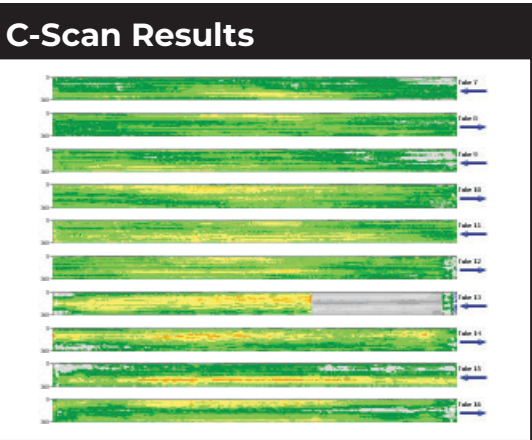
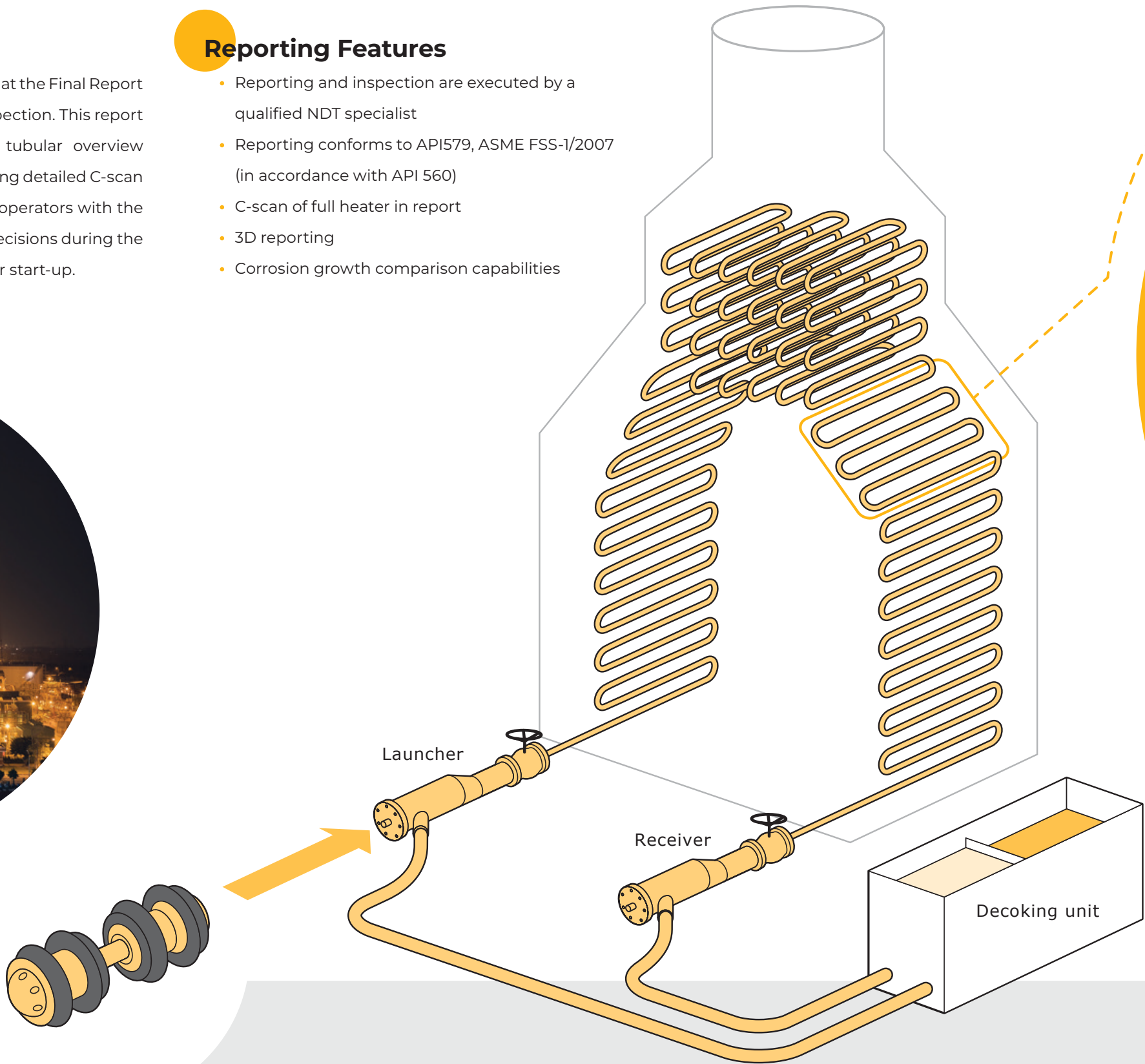
Get the Data You Need to Make Informed Integrity Decisions

Integrity Reporting

Ultra-rapid data analysis means that the Final Report is presented the day after the inspection. This report contains a brief graphical and tubular overview linked to the heater layout, including detailed C-scan graphics of each tube to provide operators with the data needed to make informed decisions during the shutdown period rather than after start-up.

Reporting Features

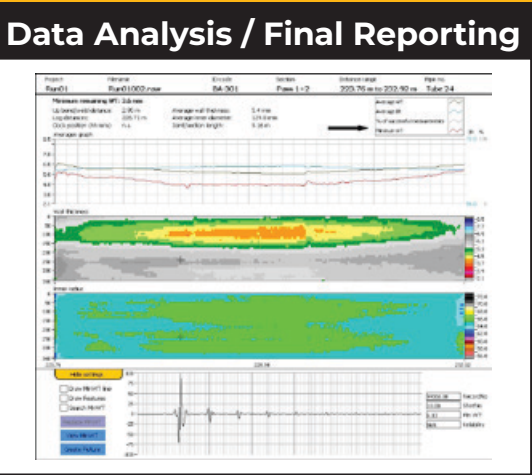
- Reporting and inspection are executed by a qualified NDT specialist
- Reporting conforms to API579, ASME FSS-1/2007 (in accordance with API 560)
- C-scan of full heater in report
- 3D reporting
- Corrosion growth comparison capabilities



Tabular

Inspection results, [Client equipment ID]

TUBE REPORT						
Tube No.	Bend No.	Length (mm)	Average 1 (mm)	Minimum Remaining 1 (mm)	Up weld/bend distance (mm)	Comments
Tube 1		0.88	8.8	4.8	4.82	-
Bend 1	0.43	7.2	5.3	0.39	-	55
Tube 2	0.15	5.7	4.5	4.48	-	97
Bend 2	0.43	5.5	4.7	0.01	-	85
Tube 3	0.15	5.7	4.7	4.62	-	98
Bend 3	0.43	7.2	5.5	0.41	-	57
Tube 4	0.15	5.7	5.1	2.77	-	98
Bend 4	0.43	5.7	5.5	0.02	-	72
Tube 5	0.15	5.5	4.5	2.04	-	98
Bend 5	0.43	5.9	5.1	0.37	-	84
Tube 6	0.15	5.5	4.8	4.42	-	97
Bend 6	0.43	5.5	5.3	0.02	-	70
Tube 7	0.15	5.5	4.8	2.12	-	98
Bend 7	0.43	5.9	5.0	0.40	-	82
Tube 8	0.15	5.5	4.7	5.35	-	98
Bend 8	0.43	5.5	5.1	0.39	-	73
Tube 9	0.15	5.5	4.8	2.58	-	98
Bend 9	0.43	5.4	5.0	0.42	-	73
Tube 10	0.15	5.5	4.5	4.59	-	98
Bend 10	0.43	5.5	5.4	0.35	-	87
Tube 11	0.15	5.4	4.7	5.15	-	98
Bend 11	0.43	5.5	5.0	0.40	-	86
Tube 12	0.88	5.4	4.5	4.05	-	98
Bend 12	0.43	7.2	5.9	0.39	-	31
Tube 13	10.11	5.5	4.5	4.07	-	98
Bend 13	0.43	5.5	4.7	0.35	-	75
Tube 14	0.15	5.5	4.7	9.09	-	98





Intero Integrity Services

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Elevating the Standard for Heater Inspection

Intero Integrity Services is the leading specialist for keeping complex oil, gas, and petrochemical facilities clean, safe, well-maintained, and highly productive. Our unique range of industrial, inspection, and environmental services maximizes your asset availability.

Turnkey. Innovative. Optimized. We listen to customers constantly, so we understand what's important to them: the highest possible performance, protection, and predictability.

Ever-evolving solutions

