

Inspection Results

Combined Cycle Power Plant (Turkey)

→ Condensers



Job Overview

Sound Tube Testing performed a non-invasive tube inspection on two condenser units at a combined cycle power plant in Turkey. These units consisted of a total of 26,856 titanium tubes.

→Customer requested Sound Tube Testing inspection to evaluate the status of the condensers before handing over the power plant to their owners.

→The client needed this job to be completed within 10 days and selected Sound Tube Testing as a result of the good experiences it already had with the system during the last year.



Summary of Inspection Results

	Unit 1	Unit 2
Tube sizes	1" OD(25.4mm)	1" OD(25.4mm)
Material	Titanium	Titanium
Tube Length	31.338' (9.552m)	31.338' (9.552m)
# of Tubes	11,816 – 0.020" (0.508mm) wall thickness 1,612 – 0.027" (0.711mm) wall thickness	11,816 – 0.020" (0.508mm) wall thickness 1,612 – 0.027" (0.711mm) wall thickness
Defects Found	<ul style="list-style-type: none"> • Total Blockage: 5 • Severe Blockages: 2 • Minor Blockages: 89 • Severe Wall Loss: 1 • Minor Wall Loss/Scratches: 20 • Defects Related to Bad Rolling: 32 	<ul style="list-style-type: none"> • Total Blockage: 4 • Severe Blockages: 2 • Minor Blockages: 374 • Severe Wall Loss: 0 • Minor Wall Loss/Scratches: 47 • Defects Related to Bad Rolling: 12
Inspection Time	70 hours - Total of 26,856 tubes (using 2 Sound Tube Testing systems)	

Outcome

- Air pressure tests were performed on all tubes with total and severe blockages. All tubes were completely cleaned.
- Tube with severe wall loss was plugged.
- Customer informed owners about the status of the condensers and advised them to inspect again with Sound Tube Testing during the next shutdown. This will allow monitoring of the tubes for potential leakage due to bad rolling indications.

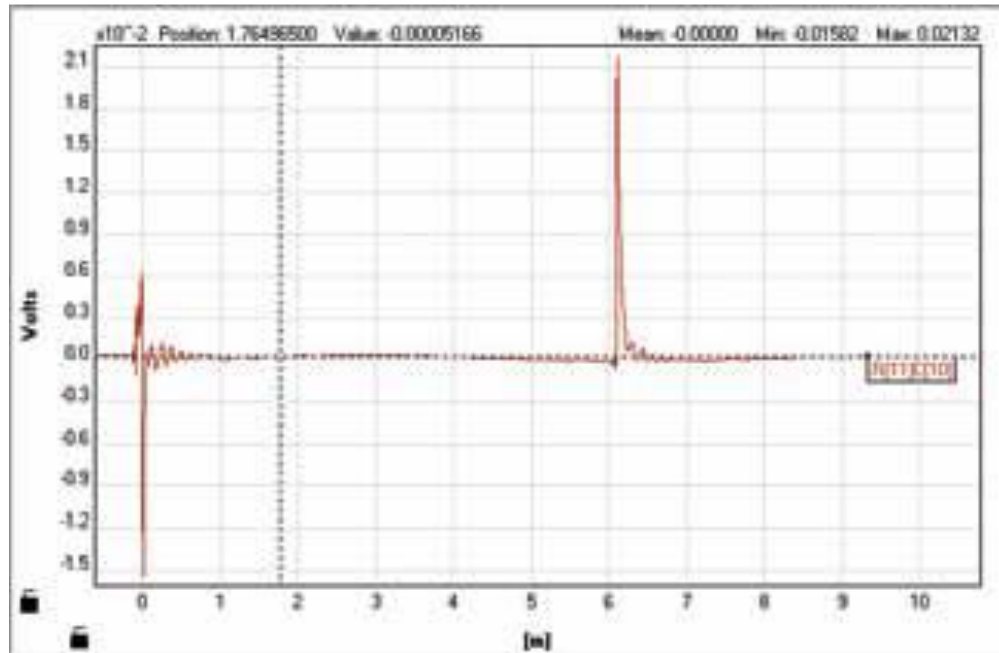
Inspection Process



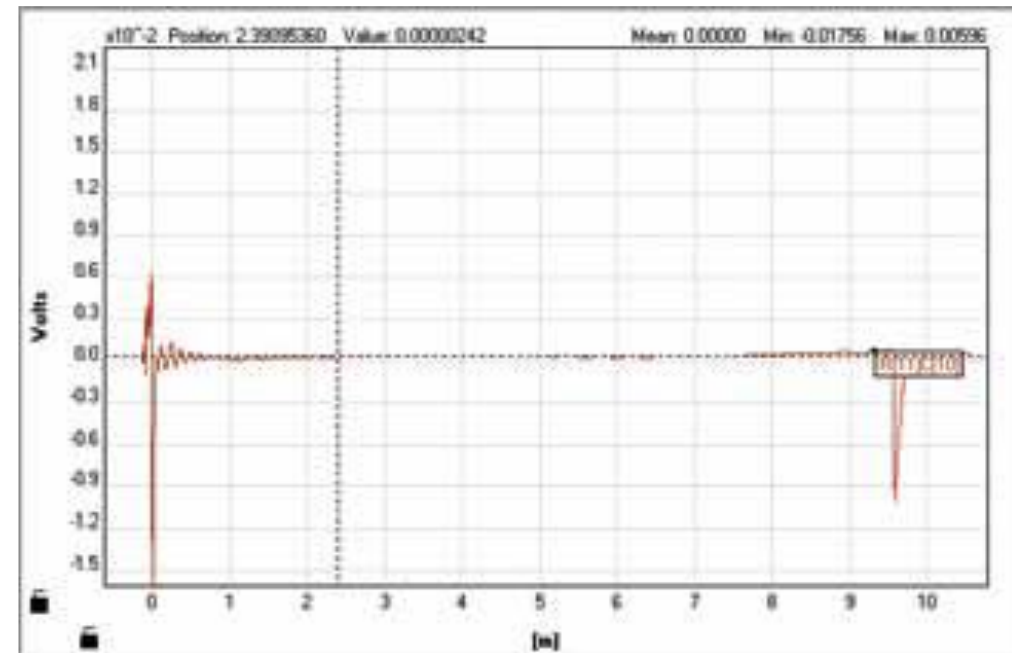
Dolphin G3 Defect Identification

Unit 1 DOWN-NORTH Section 1 R11 C10

→ Blockage – Before Cleaning



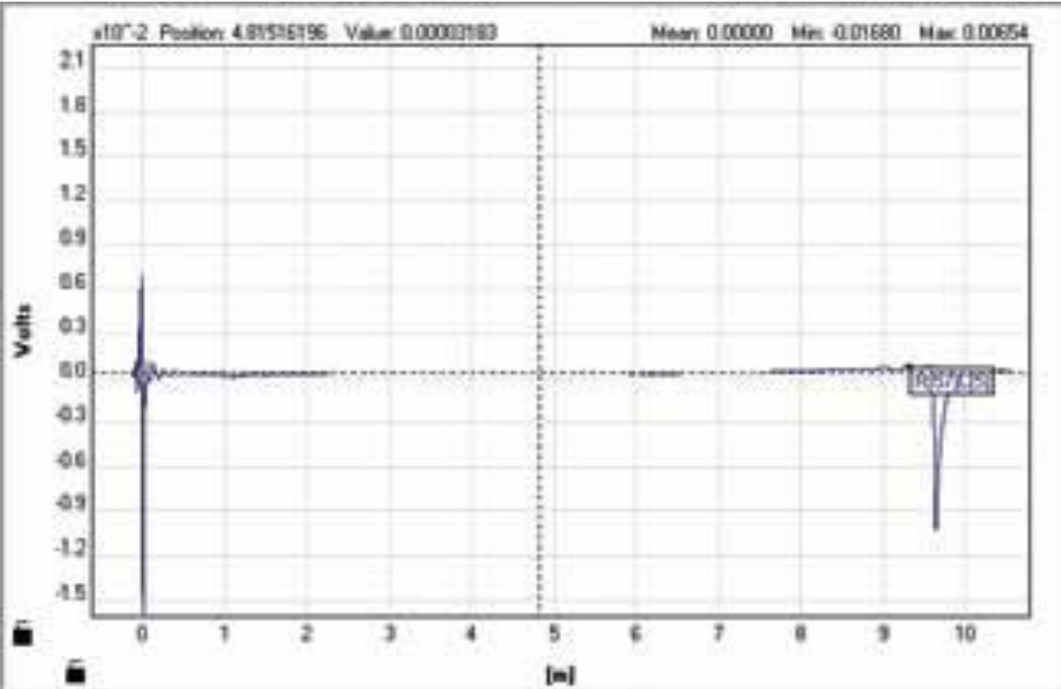
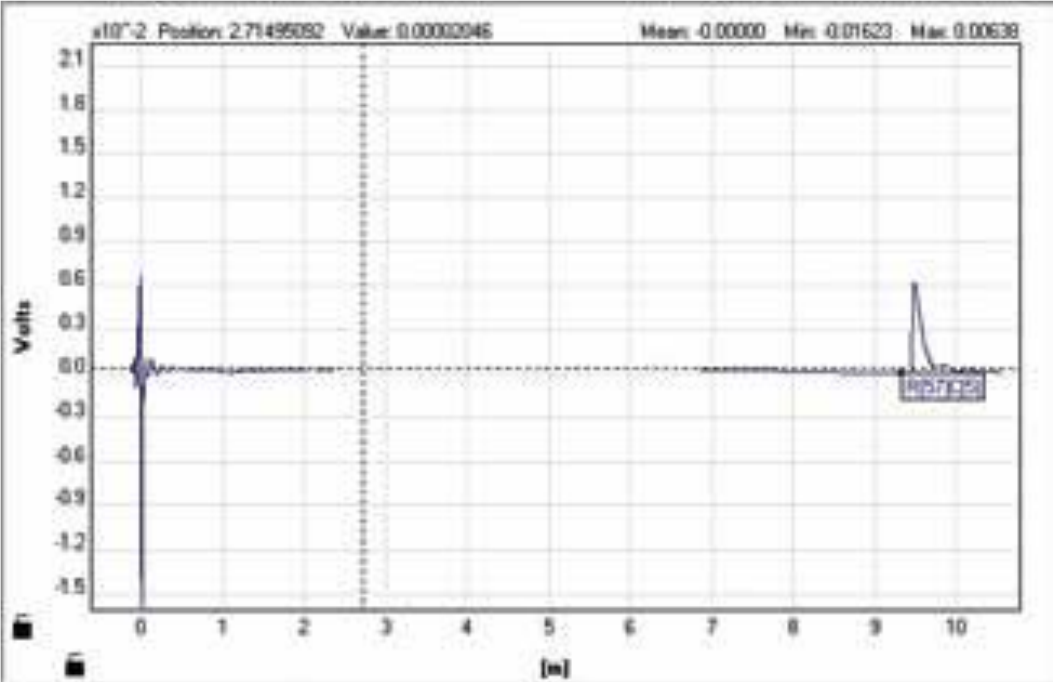
→ After Cleaning



Unit 1 DOWN-NORTH Section 4 R57 C5

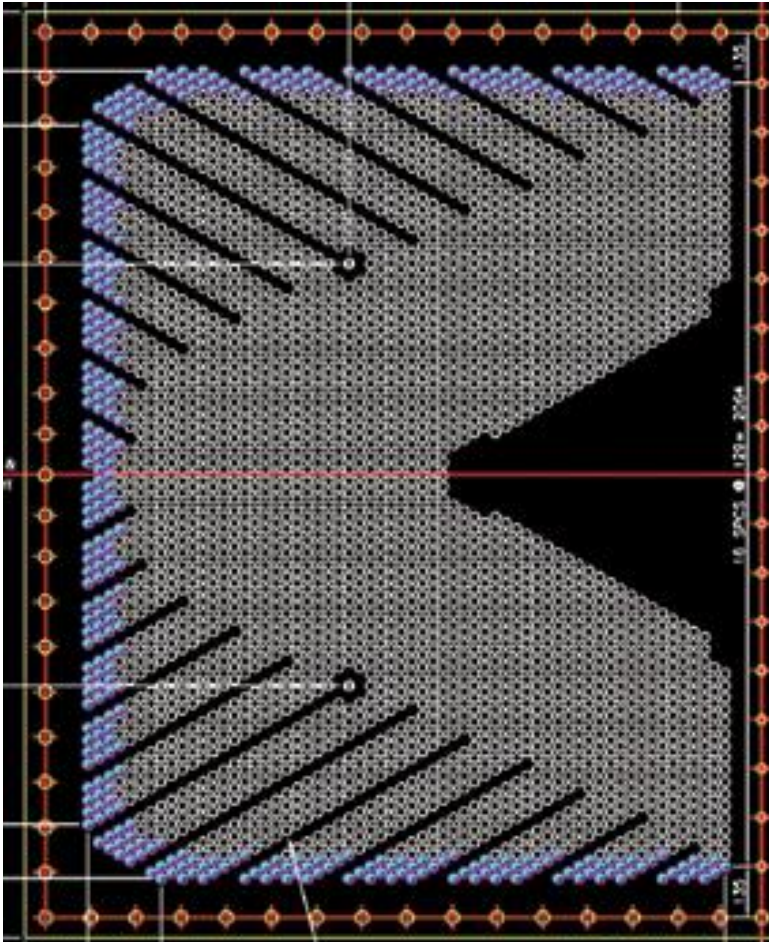
→ Blockage – Before Cleaning

→ After Cleaning

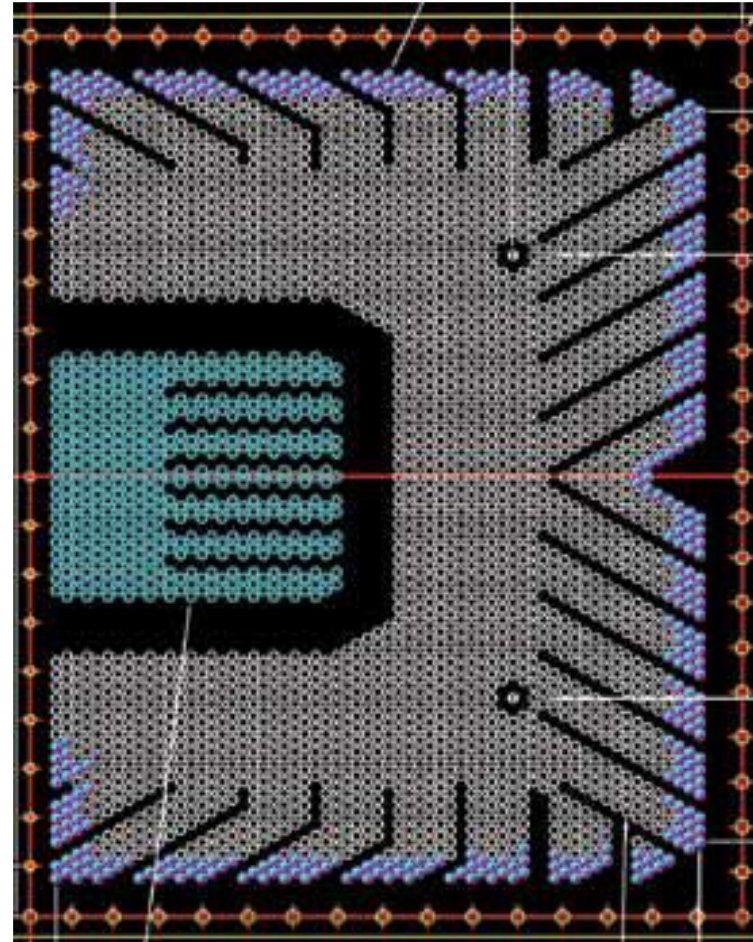


Tube Sheet Diagrams

→ Unit 1 North



→ Unit 1 South



About Sound Tube Testing Non-Invasive Inspection

With Sound Tube Testing's breakthrough capabilities for inspecting today's most challenging tube sizes and configurations up to 4", it is possible to inspect boilers, Fin Fans and other heat exchangers in any shape or material. Ultra-fast, accurate testing can be performed at a fraction of typical inspection cycle times and without extra inventories of consumable probes and standards. Utilizing Acoustic Pulse Reflectometry (APR) technology, Dolphin G3 is a very advanced yet easy-to-use tool. With its simple operation, automated analysis and report generation, there are minimal training requirements and far less dependency on operator expertise.

