GUIDED ULTRASONICS LTD.

CASE STUDY

Guided Wave Inspection of Anchor Rods

Screening Transmission Tower Anchor Rods using the Claw



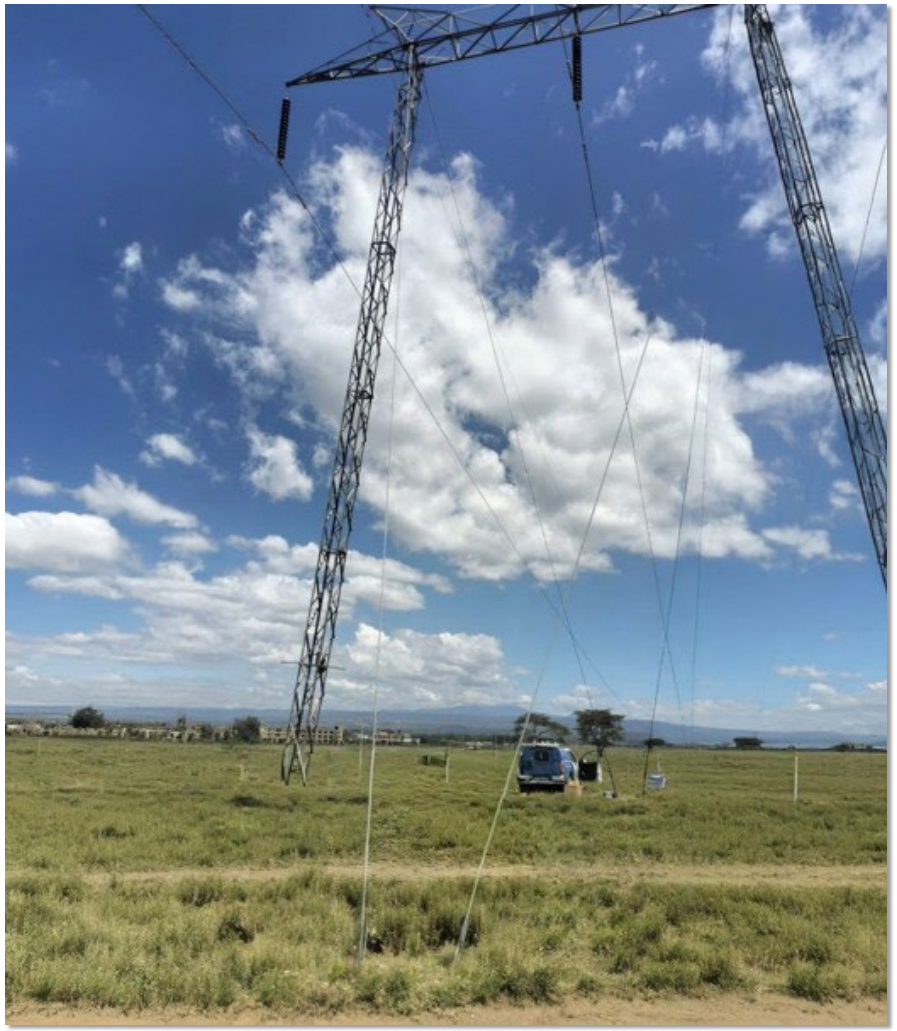
October 2026

BACKGROUND

WHY INSPECT ANCHOR RODS?

Anchor rods are critical structural elements for transmission towers and pylons.

- Buried or embedded sections of the rod may corrode without visible warning.
- Visual checks assess only the exposed section, while surface condition may appear acceptable.
- Excavation is disruptive, costly, and unsuitable for routine large-scale inspection.
- Integrity risk includes instability, unexpected outages, and unplanned maintenance.



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GUIDED WAVE SCREENING

THE CLAW SYSTEM





- Clamp-on specialised transducer ring for **fast, portable, large-scale screening** of rods, bolts, and anchors.
- High signal quality & efficient guided wave transmission with **minimal surface preparation**. No excavation required.
- Screens the entire rod from a **single accessible test location**, including the buried or embedded sections.
- Suitable for testing solid or tubular rods, including concrete-encased, galvanised, and coated configurations.

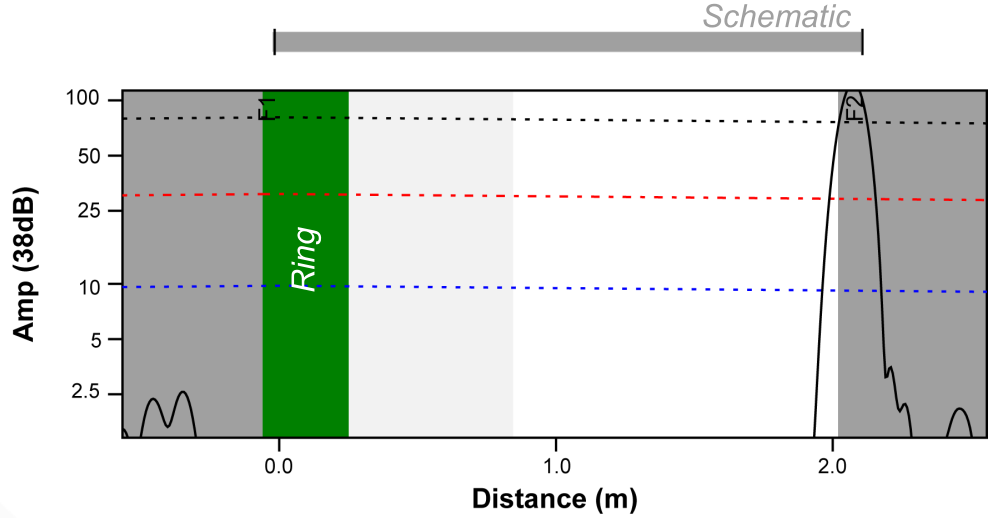
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GUIDED WAVE SCREENING

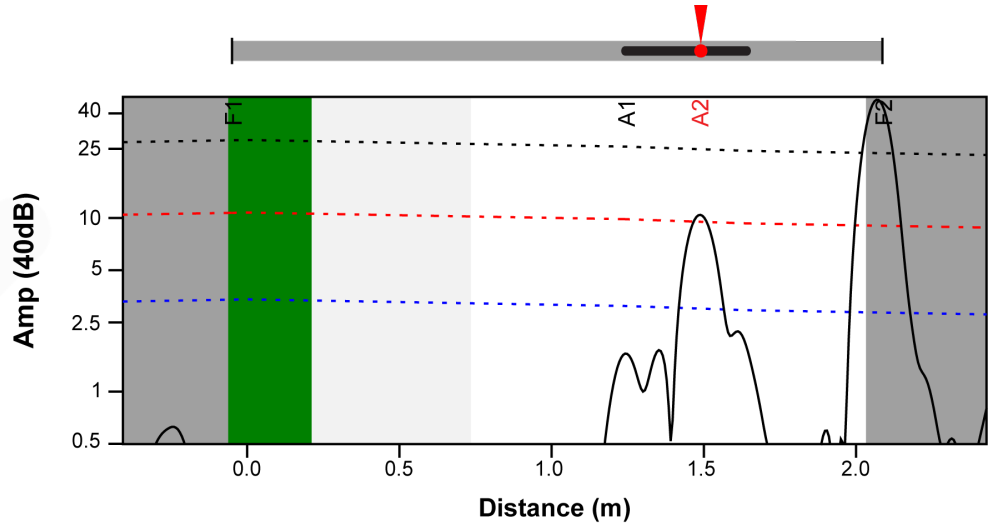
INSPECTION RESULTS

- Reflections reveal changes along the rod associated with corrosion, section loss, and cracking.
- Indications are reviewed to distinguish normal responses from potential defects, then located and classified by severity.
- Results identify the rods requiring closer investigation or follow-up.
- Repeatable digital data enables results to be compared between inspections to track changes in condition over time.

NO INDICATIONS



INDICATIONS FOUND



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VERIFICATION

TARGETED DIRECT ASSESSMENT

- Screening identified rods with indications requiring closer investigation.
- Indication location and severity helped focus direct inspection where it was needed most.
- Rods with medium or severe indications were then excavated and assessed directly.
- Disruption from excavation was minimised, with maintenance effort concentrated on areas of concern.

FIELD INSPECTION – EXAMPLE RESULTS*

20	8	5
Field Rods inspected	Classified with indications	Medium & Severe verified by excavation

** Example results from one day of a real-world inspection programme.*



Targeted excavation to verify a screening indication classified as medium severity.

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ASSET INTEGRITY

A More Focused Inspection Strategy



A practical approach for assessing buried anchor rods across the whole population.

- Screens each rod from a single accessible location, without routine excavation.
- Identifies and prioritises higher-risk rods before deterioration progresses to failure.
- Focuses direct inspection & maintenance on areas of concern, supporting better-informed decisions.
- Fast, repeatable screening improves efficiency and coverage, allowing more rods to be inspected and their condition tracked over time.

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