



OVERHEAD LINE TEST FACILITIES

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EEA Asset Management Forum
21 June 2017



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OVERVIEW

- EP Engineering have developed in-house test facilities over ~25 years
 - Product development
 - Engineering investigations
 - Condition assessment
- Established IANZ Accredited EP Test Lab.
- All test equipment designed and commissioned by EP Engineering staff.
- Type testing of legacy designs and investigations conducted for Transpower/ Linetech.
- Development of Aus EHV substation bus systems for Ausnet (VIC), Transgrid (NSW), Ausnet (SA).
- After PLP acquisition in 2010, work conducted for utilities worldwide – BPA (USA), Eskom (ZA), TNB (MY).
- Involvement with HTLS standards (ANSI C119.7) with CTC and Southwire.
- Engineering studies in the Pacific with PPA members (FEA, EPC etc)

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WHAT WE DO:

- High current accelerated aging tests (up to 3000A @ 27V)
- Temperature rise and current rating tests (up to 8000A)
- Fault testing (up to 25kA @ 6s, 57V)
- Mechanical testing (up to 400kN, 11m span)
- Calibrated equipment
- Interpretation of results
- Engineered solutions
- IANZ Accreditation to IEC 17025 (ILAC Mutual Recognition)
- Accredited Standards
 - IEC 61284
 - IEC 61238
 - ANSI C119.4
 - NEMA CC1
 - AS 1154.1
 - AS 1154.3



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation.

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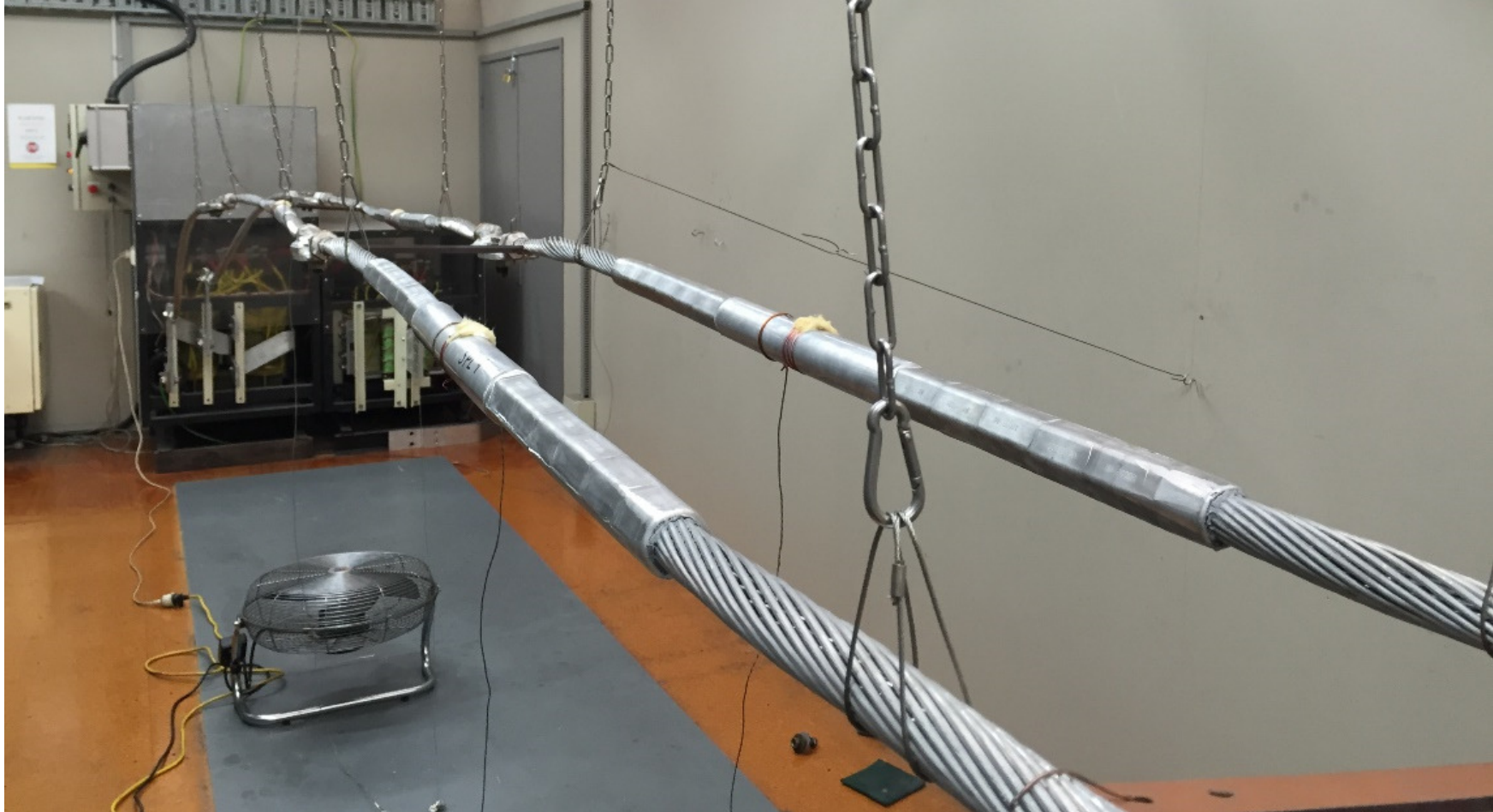
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HEAT CYCLE UNITS

- 4x units (15-75kVA), Labview control and DAQ system



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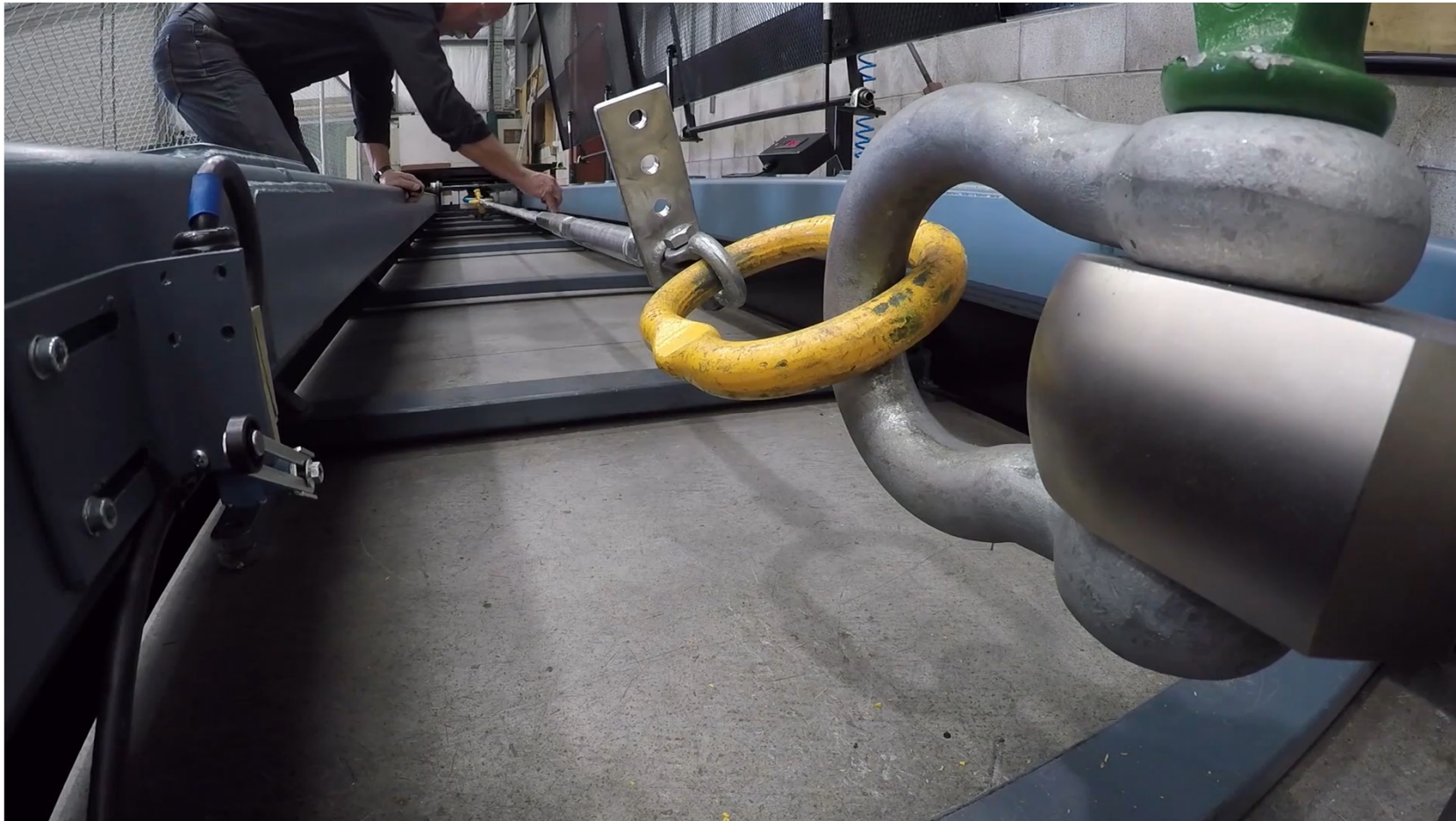
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400kN TENSILE TEST BED

- Max 400kN hydraulic system, electronic control system, certified accuracy +/- 1N



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FAULT TEST UNIT



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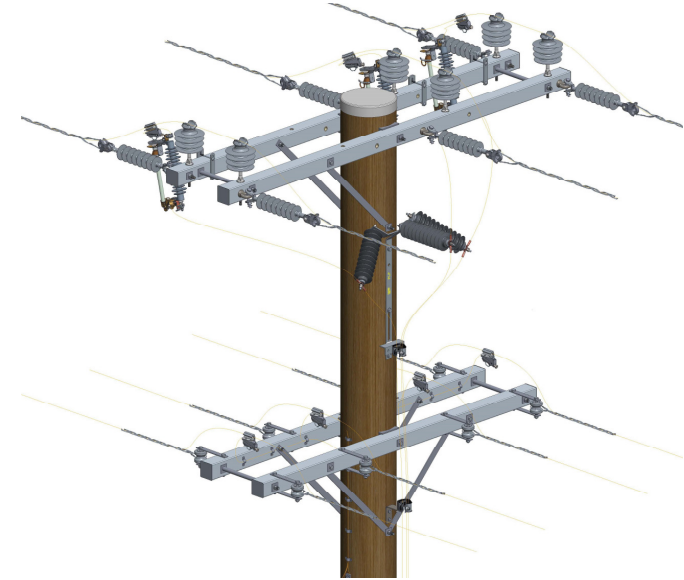
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WHAT IT MEANS:

- Predict remaining life of ACSR midspan joints on Goat/ Zebra 220kV lines.
- Determine fault ratings of copper earth systems for distribution substations.
- Confirm mechanical breaking load of aged and corroded copper conductors.
- Assessment of priorities for replacement and repair.
- Review construction drawings for anomalies and potential issues.
- Provide specifications and recommendations based on EP Engineering's technical position.



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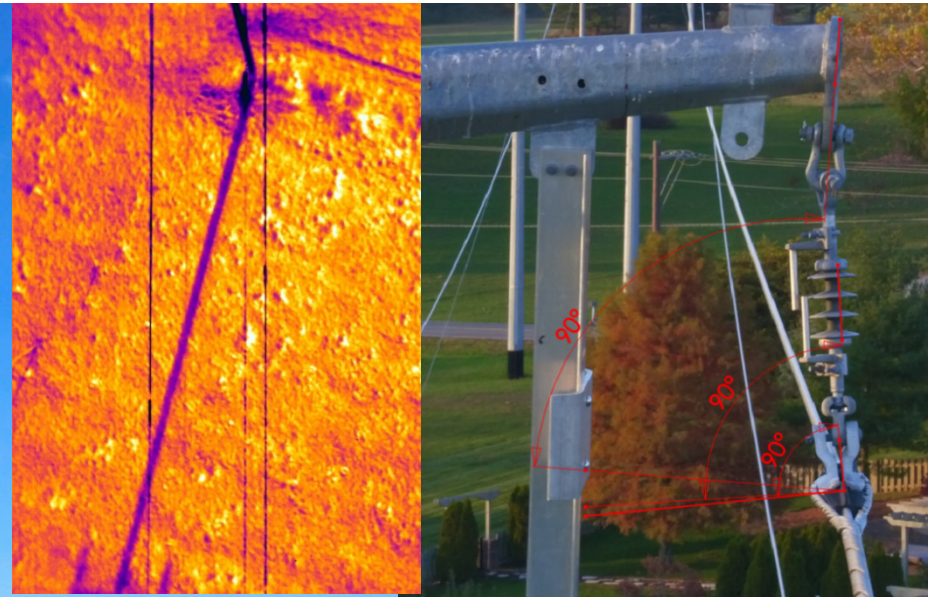
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WHAT'S NEXT:

- SKYdata™ UAV Inspections and Condition Assessment of Lines
- Georeferenced Aerial Imagery
- LIDAR 3D Modelling
- Thermal Imagery
- Imagery Analysis
- Data Mapping and Analysis



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