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WTIA National Diffusion Networks
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SUCCESS STORY NUMBER W04: NEW TECHNOLOGIES HELP KEEP WATER FLOWING IN AUSTRALIA'S DRYEST STATE – SA Water takes up equipment and ideas from recent Technology Demonstrations

Maintaining water pipelines

Some of Australia's water pipeline infrastructure is up to 100 years old and in some locations is deteriorating as a result of internal and external corrosion. Recent WTIA Technology Demonstrations, as activities of the NDNP, showcased welding and inspection technologies and systems and their application to the water industry, both in the joining and repair of the traditional cement lined steel pipelines and also in the fabrication of water treatment plant pipework made from stainless steels – a material which is being used more and more for these applications.

The significant developments in the use of fibre reinforced composites for the repair of structural members including pipelines was also demonstrated.

Technology Demonstrations

The Water Industry Sectoral Project (ISP) is supported by SA Water, City West Water and South East Water in Victoria, the Water Corporation of WA and the Water Services Association of Australia and each of these organisations participated in five Technology Demonstrations around the country which were attended by over 125 delegates from companies and organisations working in this important service area.

Demonstrations by Technology Support Centres within the WTIA network included:

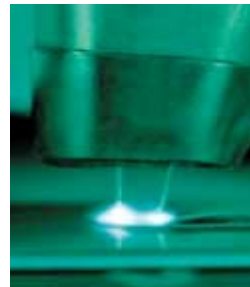
- Clock Spring Company and Furmanite as composite repair technology suppliers;
- pndt Pty Ltd, CCI Pope, InSync Industries and Intico as NDE and advanced inspection service providers;
- Lincoln Electric, Fronius, WESS, CIGWELD and Miller as welding technology suppliers;
- CSIRO Manufacturing & Infrastructure Technology as welding researchers;

In South Australia (SA) the demonstrations were held in both Berri in the SA Riverland and Crystal Brook, with additional workshops on the welding of stainless steel and the control of weld defects being presented for SA Water staff, their contractors and industry delegates.

Uptake in South Australia

Robin Earle, Project Support Engineer - Major Projects Division of SA Water reported that the Technology Demonstration at Berri showed that the STT equipment from The Lincoln Electric Company performed exceptionally well and SA Water is investigating that, and other equipment demonstrated, with future plans to introduce some of these new processes and technologies into their workshops.

Flux Core Arc Welding (FCAW) processes have already been introduced for certain applications with exceptional efficiency and without any loss of quality.



SA Water's Berri workshop has purchased Fronius' new TransPlus Synergic 3200 that is showing promise with its controlled waveform technology and its user friendly ability with respect to Weld Procedures.

Outcomes

SA Water have benefited greatly through their membership of the Water ISP, with excellent outcomes from such demonstrations and workshops, as well as technical assistance from Greg Terrell, the WTIA State Technology Manager. In SA the NDNP is supported by the Department of Trade and Economic Development that is well aware of the importance of the State's water infrastructure.

Greg has also aided SA Water in reviewing all OHS&W procedures and documentation related to welding and associated activities. One result has been the implementation of pneumatic tools for site work (when working around water) and the trialling of the RID Deadman switch.

The introduction of AS/NZS ISO 3834 *Quality requirements for welding - Fusion welding of metallic materials* to SA Water's workshops will ensure that high quality workmanship is maintained for SA's water services, with on-going review of new technologies for possible implementation, continued up-skilling and qualification of staff to international standards.

For further information contact: The Technology Transfer Coordinator, WTIA PO Box 6165 SILVERWATER NSW 1811 Tel: 02 9748 4443 Fax: 02 9748 2858 Email info@wtia.com.au