Australian Institute for Non-Destructive Testing (AINDT) – Forty-Five Years On

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The Australian Institute for Non-Destructive Testing had its origins just over forty-five years ago when it was first formed as an association in 1963. Its main intent was to unite all facets of non-destructive testing into a body that represented the industry and those that worked in it.

It was no coincidence that some of those involved in its formation were from a metallurgical background and indeed many were also members of the Australian Institute of Metals. Over time several were to reach high office in both Institutes, including state branches. Correspondingly, a great deal of synergy has been generated between the two societies which, in many respects, has also been extended to another kindred organisation, the Australian Welding Institute, which was first formed in Victoria in 1925.

In the latter context, Professor J. Neil Greenwood of Melbourne University was not only an active researcher into the new process of welding in the 1920's but was one of the first to gain an insight into the microstructure of arc weldments and the effect that these had on weld properties. Professor Greenwood was to go on and play an instrumental role in the formation of one of the first metallurgical societies in Australia, the Melbourne University Metallurgy Society.

He was credited also for the recruitment of many would be metallurgists to his course at Melbourne University, including Irwin Ferris, who went on to head a group at the Munitions Supply Laboratories at Maribyrnong in Melbourne at the outset of the Second World War in 1939. The main focus of this group was to develop non-destructive techniques for the inspection of armaments for the war effort. Ferris, along with another disciple of Greenwood, Jim Cole, were to take the first industrial radiograph in Australia on Xmas Eve 1939.

From that point on radiography became one of the foremost methods for the inspection of weldments and was to play its part in other inspection processes to determine the metallurgical soundness of structures and manufactured products. Ferris and Greenwood were to continue their association for many years with Ferris being on the committee that investigated the cause of the 1962 King's Street Bridge failure, whilst Professor Greenwood played a major role in the Royal Commission that later looked into the circumstances surrounding the failure.

This had an important effect on all three Institutes and became a catalyst for greater research into welding, materials properties and the detection of defects through non-destructive testing.

The upsurge in the development of Australia's natural resource started, initially, with the Snowy Mountains Hydro-Electric scheme. It then continued with oil and gas discoveries in Bass Strait and the NW Shelf. Without doubt, these great infrastructure developments were the reason for the increased use of NDT, and accounted for much of AINDT's growth. From 76 members in 1963 the Institute grew to a healthy 363 member's in1972, a milestone in its development when it was incorporated and assured it of continued success. Today AINDT has over 845 members making it one of the largest technical organisations in Australia.

One of the strengths underpinning the success of AINDT is its certification scheme. Started in 1972 it has continued to provide a high level of confidence in the competence and skills of NDT personnel. The first Chairman of the Certification Board was Irwin Ferris and within a decade the Board was handling over 300 applications a year for certification. Many of these were to see service testing critical weld configurations on the North Rankin "A" platform on the NW Shelf.

Originally a centrally based scheme the Certification Board has maintained the essential elements of this system and has continued to play a prominent role in the development of international standards, eventually adopting ISO9712 as a national standard in 1992. Continuing its commitment to internationalisation the Institute was further involved in later issues of this standard, notably 1999. As a result, AINDT's certification scheme was recognised through a Mutual Recognition Agreement (MRA) with the European Federation of NDT (EFNDT) in 2002, one of the few countries outside the European Union to achieve this.

Never resistant to change, in any way, AINDT had to implement a quality management system to ensure its compliance with new requirements for the operation of personnel certification schemes in accordance with new international standards. This new standard, ISO17024, required that any certification scheme, itself, should in turn be accredited by a third party organisation.

Anticipating these measures, AINDT was perhaps the first NDT organisation in the world to achieve this accreditation, through JAS-ANZ in 2005, two months after the latest version of ISO9712 was issued.

In other respects, through the IAEA regional cooperation agreement (RCA), AINDT have played a leading role in the dissemination and the technical exchange of information between participating member countries. Since it began, in 1982, AINDT have provided trainers across the broad spectrum of NDT to these countries and many are now self-sufficient in the training of NDT personnel.

One of the more recent projects has been to harmonise all certification schemes in the region so that certified personnel in all countries have similar levels of competence so that their qualifications can be recognised by other

participating members of the RCA. This has enormous implications for the region since all of the nations involved are our closest trading partners, including China, Japan, India, Korea, Malaysia, Singapore, Indonesia, Philippines and, of course, New Zealand. The leverage from this involvement is quite significant and Australia, naturally, has a strong role to play in achieving harmonisation by the final project date of 2012.

The Institute has not ignored its own membership and provides a first-rate journal on a bi-monthly basis to its members. The journal has been accepted at a high-level on an international basis and is distributed to over 60 countries. The content is kept informative with a well balanced mix of technical articles and information including condition monitoring applications. The journal, therefore, has been one of the ever constants since the Institute began. It can be credited has being one of the binding influences that has held the Institute together over all these years.

The common interests that AINDT have with the condition monitoring fraternity are growing, and accreditation in CM techniques such as thermography is under development. A building inspection thermographic certification scheme is now available specifically for pest inspectors.

The Institute's objectives and expertise is shared with other organizations in a more technical sense through the holding of joint conferences, which go back over many years. This year the AINDT and WTIA combined, are holding the Ninth International Conference on Operating Pressure Equipment (OPE) in conjunction with AINDT's Biennial Conference on NDT at the Gold Coast on 26-28 August 2009.

Through these partnerships a fine conference is assured - one which will bring together the attributes of each of the three kindred associations.