



## The World Organisation for NDT

Volume 7 Issue No 9

March 2008

### CHAIRMAN'S MESSAGE

#### The stage is set

The stage is set for the 17<sup>th</sup> WCNDT in Shanghai, China, from 27-30 August 2008 and with that comes the platform for ICNDT to move forward with the legalisation of our organisation.

Over fifty years ago, the International Committee for Non-Destructive Testing, ICNDT, was given considerable independence and a broad mandate "to promote, encourage, support and provide a venue for international NDT societies to gather under one roof to advance the field of non-destructive testing".

On several occasions during its more than 50 years of experience, ICNDT has chosen to reassess its function and question how it can best serve the international NDT community. From those analyses came policy and structural changes designed to maintain ICNDT's relevance, to improve its responsiveness, and to augment its effectiveness. In Montreal 2004, during the full assembly meeting, the members voted to address our business strategy and operational framework. The result would require three major activities for the Executive and Policy and General Purpose Committees to be completed by the 17<sup>th</sup> WCNDT: rewriting of the terms of reference, implementing formal operating procedures and preparing the legalisation for ICNDT. This past three-and-a-half years have been dedicated to accomplishing the latest objective set by our membership in 2004. The leadership and perspectives provided by the members of the Executive and Policy and General Purpose Committee has helped to keep our goal focused and achievable. It would be remiss of me if I did not take this opportunity to thank all the members of the committee for their dedication to the betterment of our organisation.

The final step required to implement the work done by the two standing committees mentioned above is for the ratification of the latest terms of reference, which has been disseminated to all ICNDT members through the ICNDT Secretariat and General Secretary. I now call on all members to be present in Shanghai during the 17<sup>th</sup> WCNDT to experience our next historic event with the acceptance and signing of the 2008 ICNDT Terms of Reference.

On behalf of the hosts of the 17<sup>th</sup> WCNDT, the Chinese Society for Non-Destructive Testing and the International Committee for Non-Destructive Testing, I look forward to seeing you in August 2008.

*Douglas J Marshall*

#### ICNDT/WCNDT schedule

Monday, 25 Aug, from 8.00 am – 5.00 pm for the ICNDT Executive Committee meeting and the ICNDT PGP Committee meetings

Tuesday, 26 Aug, from 9.00 am – 5.00 pm for conference registration

Tuesday, 26 Aug, from 8.00 am – 5.00 pm for the full ICNDT delegation meeting

Wednesday, 27 Aug, from 9.00 am – 11.30 am for opening ceremony of conference

Wednesday, 27 Aug, at 1.00 pm for opening ceremony of exhibition

Wednesday, 27 Aug, at 7.00 pm for welcome dinner (Shanghai International Convention Centre)

28 Aug or 29 Aug, Evening social function

Friday, 29 Aug, from 9.00 am – 5.00 pm for full ICNDT delegation meeting

Saturday, 30 Aug, at 2.00 pm for closing of the exhibition

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### ICNDT Awards Nominations

#### Submissions due 23 May 2008 for the following awards

##### The Roentgen Award

For major contribution to science and technology of NDT

##### The Pawlowski Award

For major contribution to promotion of NDT internationally

##### The Sokolov Award

For major contribution to NDT Research

##### The Havercroft Award

For major contribution to NDT Education, Training or Certification

##### The Young Achievers Award

For achievement of young people in NDT

ICNDT Member Societies and Members are requested to submit their nominations to the ICNDT Secretariat via e-mail (s.bond@cinde.ca) by 23 May 2008. A maximum of one nomination in each category per Member Society is permitted.

The ICNDT Policy and General Purpose Committee will select one winner per category, which will be presented during the 17<sup>th</sup> WCNDT to be held in Shanghai, China, 27-31 August 2008.

All awards are in the form of a framed certificate carrying the ICNDT logo and will include the name of the Award, the name of the recipient and the date.

All nominations submitted should include the following information:

- Name of Award
- Full name of nominee/affiliation
- Name of ICNDT Member making nomination (including contact information)
- Reasons for nomination
- Will nominee be present at the next WCNDT to receive the award?

Please contact the ICNDT Secretariat for further details.



# ICNDT Journal



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No liability is accepted whatsoever for errors or omissions.

ICNDT Member Societies are authorised to distribute this newsletter and/or its contents, however permission should be obtained for reproduction of individual articles and extracts.

**Your new ICNDT Journal is available for downloading from [www.icndt.org](http://www.icndt.org)**

**Future ICNDT Committee Meetings**

**17th WCNDT Shanghai, China**  
Executive Committee, PGP Committee, ICNDT General Assembly August 2008

**10th ECNDT Moscow, Russia**  
Executive Committee, PGP Committee, ICNDT General Assembly, June 2010

*The next ICNDT Journal will be published in June 2008  
Material should be sent to the Publisher at the above address by 30 April 2008*

## ICNDT website upgraded

The ICNDT's website at [www.icndt.org](http://www.icndt.org) has been re-developed by the German Society for NDT (DGZfP – Stefan Cullmann) and substantially upgraded.

The Home Page contains links to a Directory of NDT Societies, with e-mail and website hyperlinks; Organisational chart, committees and officers (structure); ICNDT Journal – download the latest issue as well as all archived issues; Documents – Constitution, operating procedures and minutes; Event calendar – international diary and regional conference schedule; and Secretariat contact details.

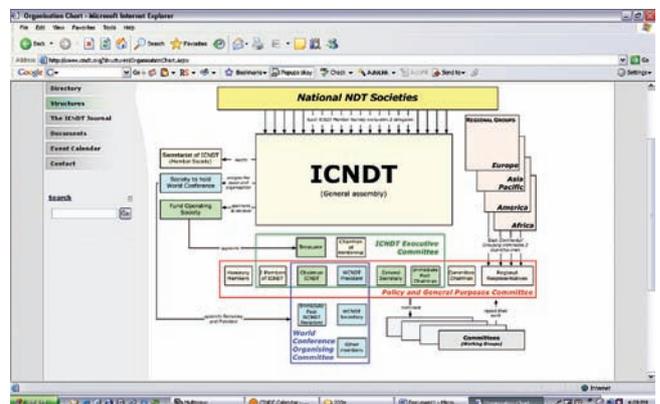
Representatives from international NDT Societies can upload details of events

organised by them so that these can quickly appear in the Events Calendar.

Officers can be issued with a user name and password permitting them to log-in and download relevant documents.

The EFNDT website is scheduled to undergo a similar upgrade.

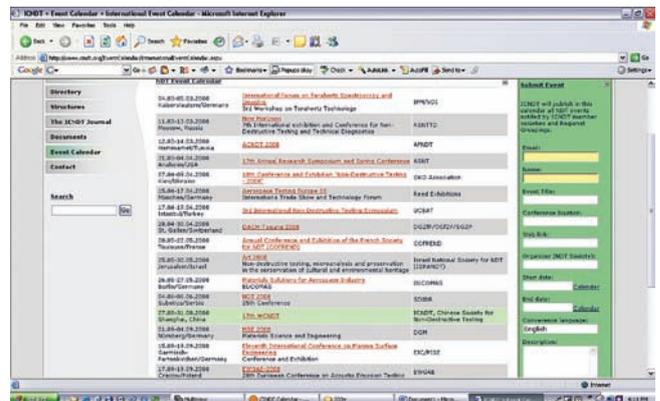
[www.icndt.org](http://www.icndt.org)



ICNDT organisational chart



New Home Page of the ICNDT website



Calendar of events



*Let the world understand China's NDT  
Let China's NDT move toward the world*



# 17<sup>th</sup> World Conference on Non-destructive Testing & Exhibition

[www.17wcndt.com](http://www.17wcndt.com)

Receipt of abstract until Dec.31,2007  
Receipt of paper until Apr.30,2008



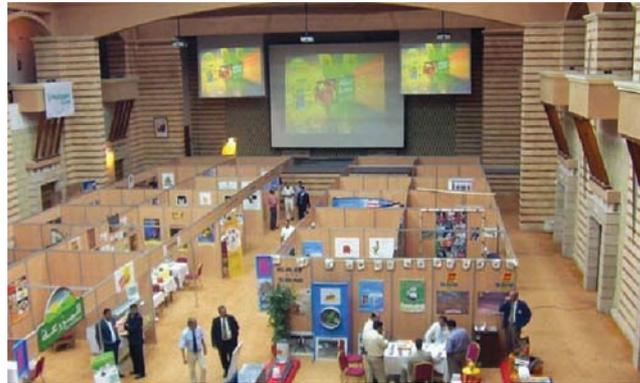
AFRICA



## 5th African Conference on Non-Destructive Testing Conference and Exhibition

12-14 March 2008

Diar Lemdina Hotel – Yasmine Hammamet – Tunisia



### Conference Secretariat

African Federation of NDT (AFNDT)  
Le CETIME – GP7-Z.I Ksar Said – 2086 La Manouba, Tunisia  
Tel: 00 216 71 545 988; Fax: 00 216 71 546 637;  
E-mail: m.mhalla@cetime.com.tn, w.ouerghi@cetime.tn

## ASIA-PACIFIC

## The Workshop on NDT with Asia Pacific Countries

5-7 November 2007, Tokyo, Japan

The Japanese Society for Non-Destructive Inspection (JSNDI) has been planning contributions to Asian countries for promoting NDT technologies for many years. IAEA has been promoting NDT industrial application among the East Asian countries in the last century. The future planning committee in JSNDI took up this matter, and planned to hold a workshop with this as one of its most important topics.

JSNDI held the workshop on NDT for enhancement of cooperation with Asia-Pacific countries for three days at the JSNDI office in Tokyo. For the first time trial, JSNDI invited ten countries in the Asia Pacific region under the budget of the future planning committee. JSNDI selected four countries (Bangladesh, China, Korea and Taiwan), which have cooperation agreements with JSNDI, and the other six developing countries (Indonesia, Malaysia, Mongolia, Myanmar, Thailand and Vietnam). All countries invited took part in the workshop. The number of participants was thirteen (two participants from Korea, Malaysia and Taiwan, and one participant from the other countries).

The workshop was held with an aim of creating mutual understanding with countries in the Asia-Pacific region in order to foster NDT personnel, and to make progress with NDT technologies. At the workshop, each delegate was requested to introduce activities of present NDT technology prevalence, and future framework in each country, with a view to deepening mutual understanding among the participating countries.

Furthermore, discussions on NDT strategies in the workshop led to close cooperation with the participating countries.

### Day 1, 2 – Presentations from participating countries

The chairman of the future planning committee, Dr Yukio Ogura, gave an opening greeting, and the host chairman, Dr Norikazu Ooka, chaired the workshop.

Dr Yoshikazu Yokono gave a presentation on JSNDI activities (qualification and certification, academic, education and standardisation). After the JSNDI presentation, each representative had a twenty minute presentation to introduce activities of present NDT technologies prevalence.

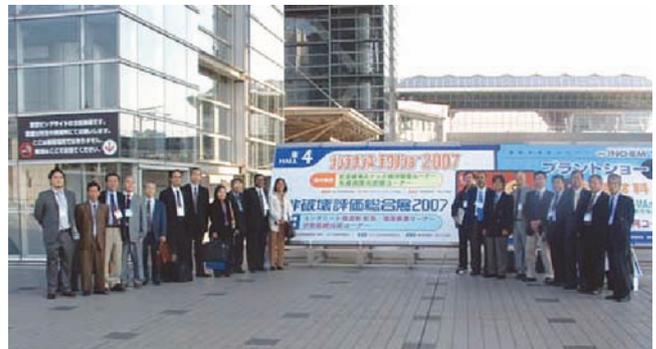
During the presentations, the participants mainly discussed the connection between ISO 9712 and qualification and certification systems in each country.



Dr Ogura (left), Dr Ooka (centre), Dr Yokono (right)

### Day 3 – Discussion on the workshop

The workshop participants visited the 'Exhibition for Non-Destructive Testing, Measuring, Evaluation, and Diagnosing Technology 2007' supported by JSNDI at Tokyo Big Sight. This is a trade show that is held every two years in Japan. The total number of visitors was about ten thousand for four days.



All participants in front of the exhibition entrance

All participants discussed the future workshop at the JSNDI office after the exhibition. All participants agreed that it was necessary to build up a structure of partnership regarding a qualification and certification system, and to promote its related education system among Asia-Pacific countries.

At the end of the workshop, it was approved that this workshop carried on to the next stage. The workshop was finished with great mutual understanding among the participating countries.

## 13th Asia-Pacific Conference on Non-Destructive Testing

8-13 November 2009 – Yokohama, Japan



### Key dates

30 April 2009  
1 July 2009  
31 August 2009  
31 August 2009  
8-13 November 2009

Short abstract submission  
Acceptance notification  
Extended abstract submission  
Advanced registration  
Full paper submission

### Session topics

APCNDT 2009 welcomes papers on all aspects of non-destructive testing and evaluation, including the following topics:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Fundamental and applied research   | <input type="checkbox"/> Training, education, qualification and certification | <input type="checkbox"/> Security                 |
| <input type="checkbox"/> Equipment design and development   | <input type="checkbox"/> Materials characterisation                           | <input type="checkbox"/> Bio-medical applications |
| <input type="checkbox"/> Inspection and testing application | <input type="checkbox"/> Safety and reliability                               | <input type="checkbox"/> Others                   |
| <input type="checkbox"/> Codes and standards                |   |   |

### Secretariat

The Japanese Society for Non-Destructive Inspection (JSNDI), MBR99 Building, 67 Kanda-sakumagashi, Chiyoda-ku, Tokyo 101-0026, Japan. Tel: +81 3 5821 5105; Fax: +81 3 3863 6524; E-mail: apcndt2009@jsndi.or.jp; website: <http://www.apcndt2009.com>

## EUROPE

## Report on the 23<sup>rd</sup> Meeting of Board of Directors of EFNDT

The 23<sup>rd</sup> meeting of the EFNDT Board of Directors was held in conjunction with the 4<sup>th</sup> International NDT Conference of the Hellenic Society of NDT in Chania, Crete on Saturday 13<sup>th</sup> October 2007.

Seven members of the Board were present – Professor Krstelj, Mr Aufricht, Dr Link, Mr Zeelenberg, Mr Hennaut and Mr Woodridge. The meeting was chaired by the President of EFNDT, Dr Mike Farley. John Thompson and David Gilbert were present, representing the Secretariat.

The Hellenic Society, whose President, Professor Ioannis Prassianakis, welcomed the members, provided a very attractive room for the meeting with an excellent view over the Venetian harbour of Chania – which compensated the Board Members a little for being hard at work from 09.00 until 17.00 on a beautiful autumn Saturday.



EFNDT Board of Directors in Chania, Crete. L to R: Wooldridge, Thompson, Krstelj, Aufricht, Farley, Hennaut, Link, Zeelenberg



Rainer Link studies the ICNDT Journal during a coffee break in Chania

The members heard from the Treasurer that most fees for 2007 have been paid and reviewed the accounts for the year and approved a budget for 2008.

To meet Belgian rules for reporting of accounts, it will be necessary to move

the General Assembly from its traditional autumn date to February. This will take place from February 2009.

A membership application has been received from RELACRE in Portugal and was approved for Associate Membership. Full membership will be possible when the planned national NDT Society is formed. Discussions have begun with the fledgling Turkish NDT Society, which is being encouraged to apply for membership.

Stefan Cullmann of DGZfP presented his work to upgrade the EFNDT website structure. A programme of work will now be organised to improve the content. Member Societies of EFNDT are encouraged:

- ❑ to input event details into the NDT Calendar, to help planning and avoidance of clashes;
- ❑ to input details of NDT books to the NDT bibliography.

It was decided to develop a quarterly EFNDT European Newsletter to complement the website and the ICNDT Journal.

John Thompson will seek views of the Membership on a possible meeting of the Forum on Certification, Qualification

and Accreditation.

The Board asked the CEC to develop a 'Strategic Plan' to address the issues raised during the Berlin Certification Conference and the BOD/CEC dinner.

Good progress is now being made on the European NDT Quality Guidelines document and a group was nominated to review the document on behalf of the EFNDT Board before it is published.



Gerhard Aufricht, Executive Member of ICNDT, delivered the greetings and best wishes of the ICNDT President Douglas Marshall and the Austrian NDT Society (ÖGfZP)

Progress is being made on the survey of NDT education in Universities and Colleges. To date, Professor Krstelj has received 29 questionnaire responses from seven countries.

The Board congratulated John Thompson on his work in support of the National Aerospace NDT Boards Forum and agreed that EFNDT would continue to provide the Secretariat and website.

The Board agreed to offer to organise the update of the ICNDT Guidelines on Personnel Certification to ISO 9712.

Useful discussions were held with the President of the Hellenic Society (Professor I N Prassianakis) and the President of the Romanian Society (Dr R Grimberg).

*J M Farley  
President, EFNDT*

## EFNDT General Assembly

The 2007 General Assembly of EFNDT was held on 9 November 2007 in Prague, chaired by the President, Dr Mike Farley. Fourteen NDT Societies were represented (Austria, Slovakia, Belgium, Norway, Lithuania, Croatia, Russia, Germany, UK, Czech Republic, France, Spain, Finland and Hungary). The meeting approved the Report from the Board of Directors (summary inset), the Accounts for 2006, the financial report for 2007 (to the date of the meeting), the budget and fees for 2008.

A summary of progress on the EFNDT Strategic Plan was presented:

- ❑ Google Custom Search set up on EFNDT website allows searching of all linked websites.
- ❑ EFNDT document of IAF interpretation of ISO 17024 prepared.
- ❑ EFNDT Guidelines and Code of Practice for NDT Personnel working under the PED adopted as a CEN TR document.
- ❑ Good progress on EFNDT Guidelines on European systems and NDT quality.
- ❑ Video promoting NDT by JSNDI – copies purchased for each member Society.
- ❑ Progress on survey on NDT Education courses in Universities and Colleges.
- ❑ Certificate of Recognition for Volunteers created.

It was agreed that the next General Assembly would take place early in 2008 to facilitate a switch in timing, and the next elections will be in January 2009. Members congratulated their Czech hosts (President Pavel Mazal) on the NDT Days in Europe Conference which had been held in the week leading up to the EFNDT General Assembly.

*J M Farley  
President, EFNDT*

## 10<sup>th</sup> Anniversary of the Hungarian Society for NDT, MAROVISZ, and 6<sup>th</sup> International Conference on NDE in Relation to Structural Integrity for Nuclear and Pressurised Components

The Hungarian Society for NDT, MAROVISZ, celebrated its 10<sup>th</sup> anniversary in 2007. Dr Peter Trampus, the President of the Society, welcomed more than 100 guests, during a reception party in a beautiful traditional hotel in the surrounding of Budapest.

Presentations with respect to the history of NDT in Hungary, and of MAROVISZ specifically, formed the programme, which included folkloristic traditional Hungarian dancing. The event ended with an excellent dinner supported by selected Hungarian wines.

The Hungarian Society for NDT was established in 1997 in Budapest by 29 companies and individuals. During its 10 years, MAROVISZ has become an active member of the European Federation for NDT (EFNDT), which was represented during the anniversary by its Vice-President Gerhard Aufricht. Today, MAROVISZ has 42 corporative and 40 individual members.

MAROVISZ is engaged in standardisation, training, education and qualification of NDT personnel, and in 2007 MAROVISZ succeeded in organising the prestigious event 'The 6<sup>th</sup> International Conference on NDE in Relation to Structural Integrity for Nuclear and Pressurised Components' in Budapest, Hungary from 8-10 October 2007.

This prestigious event was the sixth in a series devoted to the use of NDE to demonstrate the structural integrity of nuclear and pressurised components. Previous conferences were held in Amsterdam in October 1998, New Orleans in May 2000, Seville in November 2001, London in December 2004, and in San Diego in May 2006. The Conference was co-ordinated by the EC Directorate General Joint Research Centre and organised technically by a European Organising Committee.



Dr Peter Trampus, President of MAROVISZ

The overall objectives of the Conference were to provide an up-to-date assessment of the development and application of NDE and to allow technical interchange between experts on an international basis. The following sessions were organised (in brackets the number of presentations):

- ☐ Developments in Radiographic Inspection Methods (6)
- ☐ Developments in Electromagnetic Inspection Methods (7)
- ☐ Developments in Ultrasonic Inspections (4)
- ☐ Developments in Ultrasonic Phased Array Inspection (16)
- ☐ Developments of Visual and Other NDE methods (7)
- ☐ Inspection Qualification (13)
- ☐ Modelling (11)
- ☐ Structural Integrity and NDE Reliability (11)
- ☐ Materials Properties Measurements (5)
- ☐ RPV and Primary Circuit Inspection (13)
- ☐ Austenitic and Bimetallic Weld Inspection (11)
- ☐ Steam Generator Tube Inspection (5)
- ☐ Other Major Component Inspection (11).

The Conference was attended by 260 people from 28 countries around the world. Also, an exhibition of NDE vendors was held. Both the high quality technical programme and the social events provided impressions of the Hungarian culture, adding to the success of this Conference.

Using this opportunity, Istvan Becker was awarded Honorary President of the Society. Since 1950 his life is closely related with Hungarian NDT. Istvan Becker was born in 1929 in Budapest. Mr Becker has been married to Agnes, who has a doctoral degree in chemistry, for 57 years. They have two sons, five grandchildren and four great-grandchildren. Istvan Becker is a real expert and one of the much respected gentlemen in NDT.



Istvan Becker, Honorary President of MAROVISZ

**NDT and Diagnostics for**

**EFNDT 1<sup>TH</sup> SAFETY ECNDT**

**Moscow 2010, June 7 - 11**

## European NDT Days in Prague

The Czech Society for NDT, CNDT, organised three conferences and an exhibition in succession in Prague, 6-10 November 2007. All events were sponsored by the European Federation for NDT, EFNDT.

President Pavel Mazal and his Vice-President Zdenek Prevorovsky welcomed more than 300 participants.

The conference series started with the workshop 'NDT in Progress', which traditionally took place in Prague for the fourth time. It was organised together with the German Society for NDT, DGZfP. This event was opened by Zdenek Prevorovsky and Matthias Purschke, Executive Director of DGZfP.



Dr Rainer Link (centre) received the Honorary Membership of CNDT. Pavel Mazal, President, and Zdenek Prevorovsky, Vice-President, presented the document

'NDT in Progress' is a presentation of latest developments and exchange of information between young and more experienced scientists in the field of NDT. It is limited to a number of 60-80 participants. The spirit between the attendees was really enjoyable. It was an excellent possibility to enlarge the personal network and to make new friends.

The next workshop will take place in 2009, again in Prague.

The other following events were the International Conference 'NDT for Safety' and the Annual Conference of the Czech Society for NDT.

A well-attended exhibition was accompanying these activities.

The hospitality of CNDT was in addition a guarantee for the excellent feeling of the participants.

The General Assembly of EFNDT had its meeting at the end of these very well organised European NDT days.

## The 5<sup>th</sup> International Conference on Certification and Standardisation in NDT

The 5<sup>th</sup> International Conference on Certification and Standardisation in NDT took place in Berlin, 27-28 September 2007. Dr Matthias Purschke, Executive Director from the organising society, the German Society for NDT (DGZfP), welcomed 100 participants from nearly all over the world. The conference papers dealt with all areas in the field of quality management, accreditation, personnel certification, NDT laboratories, as well as training and qualification.

An invited paper was given by Dr Andreas Hecht, BASF, on 'Some Critical Remarks from German Chemical Industry on Certification and Accreditation in NDT'.

The discussions during the conference included fields of conflict between Standardisation-Certification-Application.

The conclusion was the evident opinion that the best training, qualification and certification system cannot release the employer from his final responsibility.

With this in mind it is difficult to understand the fact that there are still differences between EN 473 and ISO 9712 standards or other personnel certification systems which were believed to exist, because of maintaining trade barriers.



Dr Matthias Purschke, DGZfP and Dr Andreas Hecht, BASF

One contribution during the conference reminded the participants that the father of the all certification systems was SNT-TC-1A.

Going back to its roots, it would be really strange if there is no chance to agree upon a globally unified personnel certification standard.

The evening of the first day ended with a dinner onboard a ship cruising through Berlin in a relaxed atmosphere giving another opportunity to renew old and create new friendships and to enlarge the personal network.

All participants came to the conclusion that this was a very successful and well organised conference.



Courtesy of the Sapphoris Expedition, The Hebrew University of Jerusalem  
Photo: G. Laron

9th International Conference  
Jerusalem, Israel May 25-30, 2008  
**Art2008**  
The Israel National Society for NDT

**Non-destructive investigations and microanalysis for the diagnostics and conservation of cultural and environmental heritage**

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PAN-AMERICA

# Non-Destructive Testing Certification System in Mexico

## Part 1. General view

(Part 1 of a 2-part series)

This review was conducted in order to establish a certification system to meet the needs of the Mexican community, research and evaluation of the market needs, and the potential for this sector of the economy to sustain such a system.

The first sources of reliable information were the statistical reports published every three months by the Federal Work and Social Prevention Office (STPS, by its Spanish name).

The non-destructive testing workforce comprises inspectors who work in general industry, chemical and petrochemical plants, and hydrocarbons distribution and transport pipes.

### Market demand

Figure 1 shows the variation of the inspector population in non-destructive testing over the last 10 years. During the period from 2002 to 2004, the inspector population experienced a negative tendency of 11%. This tendency was reversed over the last three years (2005-2007), in which the demand for the inspectors in this sector increased to 16% in 2006, as shown in Figure 2.

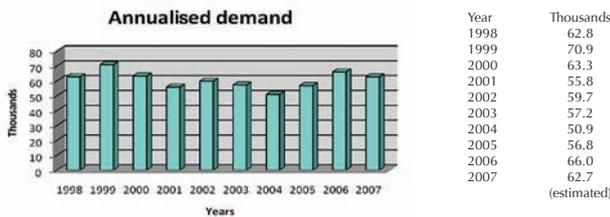


Figure 1. Tendency on the demand for inspectors in non-destructive testing (figures from third quarter, 2007)

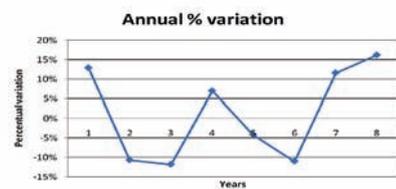


Figure 2. Percentual variation on the annual demand for NDT inspectors (figures up to the 4th quarter, 2006)

During the last three years, the demand for a qualified workforce to carry out non-destructive inspections (NDT) using the methods of visual inspection (VT), liquid penetrant testing (PT), magnetic particle testing (MT), ultrasonic testing (UT) and radiographic testing (RT) has increased.

The techniques of phased array and guided waves (ultrasonic testing) and digital radiography have gained much momentum since mid-2005, with the greatest interest mainly from the oil industrial sector.

During the period from 2006 to 2007 the demand for the impulse excitation and thermal techniques has also increased.

### Qualification requirements

A problem faced by this service sector is the lack of workforce with the required education level. In Figure 3 the education level of the inspectors is presented according to the statistics from STPS.

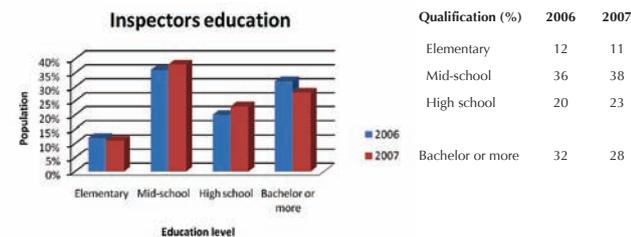


Figure 3. Inspectors' education level (figures up to the 3rd quarter 2007)

It is important to point out that the population of professionals has decreased 4% in a year.

To carry on with the comparison between Mexican and other education systems, it has to be mentioned that elementary school lasts six years (plus one pre-school year), and mid-school, three years. The technical education takes three years at the high-school level and two years additional in a technical university. The bachelor education programmes are five years at the college level.

The minimum profile of required education for inspectors, recommended by the international application norms, is high school (13 years education). This condition is accomplished by only 51% of the people working as an inspector in non-destructive testing.

### Age distribution

The STPS report presents a distribution graph for the inspector's age shown in Figure 4.

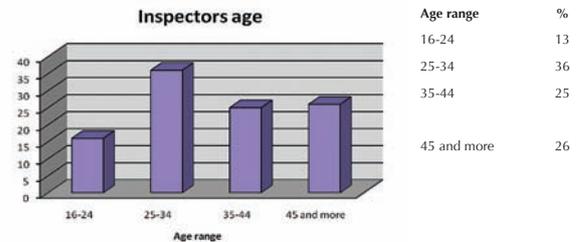


Figure 4. Inspector's age (figures from the 3rd quarter, 2007)

The population dedicated to non-destructive testing services is balanced, as approximately 49% of inspectors are in the age range of 34 years or younger, which favours the preparation of level 1 and 2 inspectors in NDT. The remaining 51% are 35 years or more, meeting the needs for trained and experienced inspectors to cover level 2 and 3 in NDT. It is noticeable that little more than 25% of the population is 45 years old or older.

### Gender distribution

Today, the involvement of the female population has been increasing, particularly during the last five years, to fulfil more than a third of the population. The participation of women in 2005 was 31% and by 2007 has increased to 37%, as shown in Figure 5.

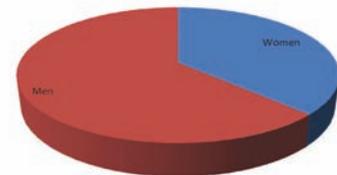


Figure 5. Distribution by gender of inspectors in NDT

### Income

In order to have a comparative figure on the average income of the inspectors, the amounts have been annualised and converted into American dollars.

The inspector's income has been divided in ranges according to age; this allows perceiving the situation of the young non-experienced individuals in the market. This data is shown in Figure 6.

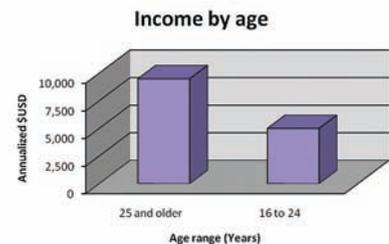


Figure 6. Average inspectors income by age

The figures shown are the average income of the population; nevertheless, it should be mentioned that the annual income of specialised inspectors or highly experienced ones, especially those working on oil platforms, can be significantly above \$17,000 dollars. This annualised income is absolutely lower than the annualised income in other countries, especially in the USA and Canada, our commercial partners in the NAFTA.

**Training opportunities on NDT**

For this part of the report, a review of the legally constituted entities which have the objective to associate individuals or organisations dedicated to NDT inspection or training, assessment or certification in NDT.

This information is open to the general public and can be found in the Foreign affairs office web-page, within the SIPAC section.

The following is a list of the searches performed:

- ❑ Association/Non-destructive examinations
- ❑ Society/Non-destructive examinations
- ❑ Association/Non-destructive tests
- ❑ Society/Non-destructive tests

According to these sources, there are 11 entities under ‘association’ or ‘society’ in non-destructive examinations or testing, some of them registered more than 40 years ago, but without reliable evidence on training or personnel assessment activities. The interviewed organisations express that training is one of their activities but are mainly dedicated to inspection services.

Among the non-government organisations, the Mexican Institute on Non-Destructive Testing (IMENDE, AC) stands out by their activities. IMENDE has been offering training courses for more than 20 years in the different non-destructive methods. The training programme is established annually. IMENDE was founded with the assistance of a regional programme in conjunction with the United Nations Organisation for Latin America and the Caribbean RLA/82/T05. All course content is based on the requirements of ISO 9712.

On the government side of the technology sector, the engineering and industrial development centre (CIDESI) is worth mentioning. It has a partnership with the Japanese Industrial Development Agency (JICA). Today, CIDESI offers a periodic training programme in non-destructive methods, at both a national level and in cooperation with other Latin American countries. The course content is based on the ISO 9712 and on the EN 410.

In Mexico, there is another source for training in non-destructive testing: the commercial representatives of the different manufacturers. In this category, we must mention Olympus America and GE Inspection Technologies. Both of these organisations have established good working relationships with various educational institutions, not only in Mexico but internationally.

In addition, there are several organisations that provide NDT services as well as internal training courses for their inspectors. One example is Naumex Co S.A., which sporadically offers training courses in the traditional methods of NDT, basing their content tables in the recommended practice SNT-TC-1A.

**Conclusions**

- ❑ The NDT population in Mexico is around 70,000 technicians registered by the STPS.
- ❑ Today, the demand for staff able to perform inspection activities on NDT is increasing. It opens better income possibilities for well-qualified and certified personnel under ISO 9712.
- ❑ Although there is an important pool of people working on NDT, some of them have limitations to achieve the qualifications and certifications internationally established and accepted, for example:
  - About half the population does not comply with the requirement of high school education. This may represent a bigger investment in time in order to train them and some limitations in reading and understanding in foreign languages, such as English.

- The inspectors’ income level average may be a limitation for them to ask for the certification individually, by their own economical means.
- ❑ The inspectors’ average age is 28 years, and about 75% are younger than 45, which may mean good performance during the training.
- ❑ Little more than one third of the staff working on NDT is female.
- ❑ The companies that offer NDT services and that are looking for certification prefer the certification under the ASNT scheme because it is cheaper.

**Minutes of the meeting at the IV PANNDT Conference 24 October 2007, Buenos Aires**

**IV PANNDT**

The IV PANNDT had 553 registered persons from 32 countries. The exhibition was larger than expected with 44 booths. The Local Committee expected more attendants but an Oil & Gas exhibition, 100 years of petroleum in Argentina, was being held simultaneously (two years ago when the conference was planned this was not foreseen).

**V PANNDT**

Mr A R García Cueto, from the Mexican delegation, made a presentation of the V PANNDT, that will be located in Cancún.

He gave details about the local committee, the institutions and companies that are interested in the project. Some of the companies are also interested in sponsorship of the conference. The local committee will make a special effort to obtain the participation of young people. Also, the Cancún infrastructure to develop conferences was presented.

They requested assistance from countries that have developed the previous PANNDT conferences.

**VI PANNDT**

Although representatives of some countries have talked about the intention to organise the VI PANNDT (Colombia, Ecuador and also Bolivia), this item was held over to the next meeting.

During the discussions a need was identified to have more representatives of the region at the Pan-American Committee; to this end a representative should be identified from one of each of the non-participating countries.

R Murphy recommended ‘electronic meetings’ in between two conferences.

M I Gebrael proposed to produce an agenda for the following four years.

M Trimm proposed to identify effective actions to share with all the participating countries.

M Douglas proposed to use the ‘ICNDT format’ to communicate with each other.

It was proposed to organise working groups in the different zones to work together to identify the representative people of the countries of each zone.

S Infanzón proposed to use the electronic directions of the ICNDT website to obtain contacts of our region.

J Conte proposed to divide the activities of the PANNDT Committee. He postulated to have a Secretary of the PANNDT Committee and a Chair of the Conference. It was agreed that Mexico will be the Chair of PANNDT and Brazil the Secretary.

It was also agreed to modify the PANNDT logo with something representative of the organising country and also to modify the Terms of Reference to fulfil the detected requirements.

S Bond asked the region to update the information on the region on the ICNDT website.

## News from the Brazilian Society for NDE (ABENDE)

### ABENDE fosters participation in the NDT World Conference

ABENDE invites the Brazilian NDT community to participate in the next world conference on NDT that will be held from 27 to 31 August 2008 in Shanghai, China. To facilitate Brazilians' participation in the event, ABENDE has prepared a travel package with different air ticket and hotel options. ABENDE's Institutional Communication Department has also some proposals to help the formation of a Brazilian companies' island in the technical exhibition that is held simultaneously with the Conference. For more information about ABENDE's proposal, send an e-mail to [eliane@abende.org.br](mailto:eliane@abende.org.br). For more information about the event, go to <http://www.17wncndt.com>

### NDT guide launched

The NDT Guide 2007 is available to download. It is the most comprehensive publication on Non-Destructive Testing applications, equipment, products, list of companies in alphabetical order and criteria to contract an inspection company (advantages, limitations and specifications of each method) in Brazil. A new feature this year is the Guide of Terms that is a list of common expressions in NDT based on already consolidated NBR Standards. The terminology was compiled with the support of technical representatives and academic experts in the area who, after analysing different opinions, standardised the words most used by professionals. In this issue, the guide presents the terminology description for the following methods: Parasitic Currents, Acoustic Emission, and Watertightness for Basic Sanitation, Penetrating Liquid, Magnetic Particles, Visual Testing, Staff Qualification and Certification, Industrial Radiography, Thermography and Ultrasound. With technical and operational information, the NDT Guide is the most reliable way to ensure the full business development to users of the Non-Destructive Testing technology. More information may be obtained from the Institutional Communication Department (011) 5586-3170 or at [eliane@abende.org.br](mailto:eliane@abende.org.br). To download the guide, go to: [http://www.abende.org.br/guia\\_end.php](http://www.abende.org.br/guia_end.php)

### The 5th International Conference on Standardisation and Certification of Non-Destructive Testing

João Conte, Executive Director of ABENDE has recently participated in the 5th International Conference on Standardisation and Certification of Non-Destructive Testing, organised by the German NDT Association (DGZfP). These were the highlighted subjects:

#### Re-certification

Experts from several countries are currently discussing changes in the re-certification of professionals. The suggestion is to have the process without exams, that is only by means of evidence of the professional's continuous performance. The purpose is to have the exam as an alternative for those cases where there is no satisfactory evidence of activity.

#### EN-473 × ISO 9712 Standards

Another subject under discussion is the issue of harmonisation between standards EN-473 (standard widely used in Europe) and ISO 9712 (international standard used in Brazil for the SNQC/END).

### ABENDE starts activities in Colombia

During a recent visit to Colombia, ABENDE's Executive Director, João Conte, participated in several meetings in different institutions,

marking the beginning of the Association's activities in that country.

The Colombian NDT and Welding Association: a collaboration agreement is to be signed between the two entities and ABENDE will give support to the implementation of a methodology to recognise Colombian training organisations as well as the accreditation process itself, making this scheme the Staff Certification Organisation recognised by the Superintendence of Industry and Commerce (SIC), the national accreditation agency in Colombia. ABENDE has also been requested to help in the organisation, next year, of an Annual NDT and Welding Congress. With 15 years of existence, Acosend has organised five congresses and it has 200 qualified and certified professionals.

Universidade Livre: The most frequent subject discussed at Universidade Livre (Unilibre) was the implementation of the recently signed agreement with ABENDE. With 43 years of experience of running an engineering graduation course, Unilibre is a pioneer in Colombia providing metallurgy and non-destructive testing courses.

### Staff Certification Forum: suggestions for a common certification model

During the International Staff Certification Forum held on 25 and 26 September in São Paulo (Brazil), it was discussed that the Brazilian certification system is similar to other countries such as Chile, Uruguay, Spain, Germany and Canada. Some issues like the low approval rate in exams and the lack of professional experience are common to these countries. However, the issue of low educational level of candidates was of more concern among developing countries.

Another prominent subject presented by the National Association of Investment Banks (ANBID) was the possibility of applying qualification exams through an electronic system in prefixed sites and dates. With an automated system, the professional gets the results immediately. In general, the representatives of the certifying entities reached the conclusion that those institutions should be responsible only for the certification and not for the training. The Assistant Manager of the Certification Department of ABENDE, Erick Lage, represented the association at the event that was promoted by Inmetro with the support of ABENDE in the organisation. The forum was an opportunity to discuss and share the knowledge on the importance of staff certification, based on the recognition of competences.

### Study Committee of Acoustic Emission creates a workgroup for the electric sector

The Study Committee of Acoustic Emission created a workgroup aiming at meeting the standardisation needs of the method to the electric sector. During the first meeting, the group decided that the first standard project to be developed will be named 'Non-Destructive Testing – Acoustic Emission – detection and localisation of partial discharges and thermomechanical abnormalities in power transformers and oil-isolated reactors'. Representatives of Furnas, Cia Vale do Rio Doce, CTEEP, PETROBRAS, Alcoa and CEPEL participated in the meeting. For more information, contact the Standardization Department of ABENDE: [normalizacao@abende.org.br](mailto:normalizacao@abende.org.br) or call (11) 5586-3195.

### Invitation for technical papers and exhibition at CONAEND&IEV 2008

This event takes place from 9 to 12 June 2008 in São Paulo. Delegates interested in participating and companies interested in exhibiting should visit the event website at: [http://www.abende.org.br/FrmEventoMan.php?evt\\_codigo=295](http://www.abende.org.br/FrmEventoMan.php?evt_codigo=295)

## CALENDAR OF NDT EVENTS

Month	Date	Venue	Event	Contact
April 2008	7-9	Kiev Ukraine	10th Conference and Exhibition Non-Destructive Testing 2008	ndt@ln.ua www.ndt.com.ua
	17-19	Istanbul Turkey	3rd International Symposium and Exhibition on NDT	oda@metalurji.org.tr www.metalurji.org.tr
May 2008	20-22	Toulouse France	Annual Conference and Exhibition of the French Society for NDT (COFREND)	cofrend@cofrend.com www.cofrend.com/2008
	25-30	Jerusalem Israel	Art2008 – 9th International Conference on NDT, Microanalysis and Preservation in the Conservation of Cultural and Environmental Heritage	meetings@isas.co.il www.isas.co.il/art2008
June 2008	9-12	São Paulo Brazil	XXVI National Congress of Non-Destructive Testing and Inspection	eventos@abende.org.br www.abende.org.br
July 2008	15-18	Edinburgh Scotland	The Fifth International Conference on Condition Monitoring and Machinery Failure Prevention Technologies	daniel.grove@bindt.org www.cm2008-mfpt2008.org
	20-25	Chicago USA	35th Annual Review of Progress in Quantitative Nondestructive Evaluation (QNDE)	qnde3@cnde.iastate.edu
August 2008	26-30	Shanghai China	17th World Conference on NDT	chsndt@public2.sta.net.cn chsndt2008@163.com www.17wcndt.com
September 2008	9-11	Tomsk Russia	9th International Exhibition on Non-Destructive Testing and Devices 'Defectoscopy 2008'	www.ndtworld.com
	16-18	Cheshire UK	NDT 2008 Conference and Exhibition	karen.cambridge@bindt.org
November 2008	10-14	Charleston USA	ASNT Fall Conference and Quality Testing Show	conferences@asnt.org www.asnt.org
December 2008	9-12	Kyoto Japan	19th International Acoustic Emission Symposium	acd@jsndi.or.jp
September 2009	14-19	Essen Germany	3rd Quality Testing International Exhibition 2009	info@messe-essen.de www.messe-essen.de
November 2009	8-13	Yokohama Japan	13th Asia-Pacific Conference on Non-Destructive Testing 2009	apcndt2009@jsndi.or.jp www.apcndt2009.com
June 2010	7-11	Moscow Russia	10th European Conference on NDT	spektr@co.ru www.rsnttd.ru
2012		Durban South Africa	18th World Conference on NDT	amanda.vdwesthuizen@andtc.com