NDT technical assessment for ISO17025 and ISO17020 certification

Penilaian teknikal NDT bagi persijilan ISO17025 dan ISO17020

Mohamad Pauzi Bin Ismail
Kumpulan NDT, Bahagian Teknologi Industri

Abstract

ISO17025 is an international standard that states the requirement criteria for testing and calibration laboratory, while ISO17020 is for inspection body. Standard Malaysia is the accreditation body for both standards. The author involved in the technical assessment for both standards both in Nuclear Malaysia and outside. The experience in performing NDT assessment activity is explained and discussed. The comparison between both standards is also discussed.

Abstrak

ISO17025 ialah piawai antarabangsa yang menyatakan kriteria-kriteria perlu dipatuhi oleh makmal-makmal ujian, manakala ISO17020 pula untuk badan yang memberi khidmat pemeriksaan. Standard Malaysia merupakan badan akreditasi kepada kedua-kedua persijilan ini. Penulis telah terlibat dengan aktiviti penilaian teknikal ISO17025 dan ISO 17020 di dalam dan luar Nuklear Malaysia. Pengalaman menjalani aktiviti penilaian teknikal NDT bagi kedua-dua ISO ini diterangkan dan dibincangkan. Beberapa perbezaan antara keduanya adalah juga dibincangkan.

Katakunci/keyword : NDT, ISO, quality

INTRODUCTION

Both MS ISO 17020 and MS ISO 17025 are accreditation standards. Standard Malaysia is the accreditation body for these standards. The MS ISO / IEC 17020 is a standard that inspection companies can use to demonstrate that they meet include expertise and independence. The MS ISO/IEC 17025 is a standard used by testing and calibration laboratories. The MS ISO/IEC 17025 adds in the concept of competence and it applies directly to those organizations that produce testing and calibration results.

MS ISO 17020 VERSUS MS ISO 17025

In ISO 17020, the level of independence with respect to consulting/engineering is given by the category type: A, B or C. In ISO 17025, nothing is clearly stated.

ISO 17020 regulates test labs which have to have to provide decision in terms of pass/fail decision. ISO 17025 regulates test labs which have to provide measurement results. Obviously, labs regulated by ISO 17025 also have to give conclusion pass/fail based on the results of their measurements. ISO 17025 requires A type of independence only.

The standards ISO 17020 and ISO 17025 belong to the so-called sovereign norms which are supervised exclusively by the Accreditation Bodies. Thus, there is no application of these standards

without accreditation by one of the accreditation bodies. If anybody would pretend to work under ISO 17020 without being accredited this would be illegal.

The standards are clearly distinguished in respect to their scope. Thus, ISO 17020 is valid for inspection entities, whereas ISO 17025 is valid for test and calibration entities. Inspection entities only testify "conformity" in the form of "passed" or "failed". However there are sometimes overlapping.

Table I shows comparison of the contents of both ISO.

Table I: Contents of ISO17020 and ISO17025

ISO 17020	ISO 17025
1. Scope 2. Definitions 3. Administrative requirement 4. Independence, impartiality and integrity 5. Confidentiality 6. Organization/ management: responsibilities documented, job description, supervision, training 7. Quality System: Policy and objectives, Quality manual (content), Control of documents, Internal quality audits, Corrective actions, Review of quality system 8. Personnel 9. Facilities and equipment 10. Inspections methods and procedures 11. Handling of inspections samples and items 12. Records 13. Inspection reports and inspection certificates 14. Subcontracting 15. Complaints and appeals 16. Cooperation	1. Scope 2. Normative References 3. Terms and Definitions 4. Management Requirements 4.1. Organization 4.2. Management System 4.3. Document control 4.4. Review of requests, tenders and contracts 4.5. Subcontracting of tests and calibrations 4.6. Purchasing services and supplies 4.7. Service to Customer 4.8. Complaints 4.9. Control of non-conforming testing/ calibration 4.10. Improvement 4.11. Corrective actions 4.12. Preventive actions 4.13. Control of records 4.14. Internal audits 4.15. Management reviews 5. Technical Requirements 5.1. General 5.2. Personnel 5.3. Accommodation and environmental conditions 5.4. Test and calibration methods and method validation 5.5. Equipment 5.6. Measurement traceability 5.7. Sampling 5.8. Handling of test and calibration items 5.9. Assuring quality of test and calibration results 5.10. Reporting the results

TYPICAL FINDINGS

Followings are typical non-conformity found during technical assessment;

1. Certificates of reference materials for ET and PT were not available
2. There is no statement on test location being provided especially for on-site job
3. Lack of man power (RT operation requires at least 2 persons at a time)
4. No calibration sticker attached to equipment. At least one Gamma equipment, two X-ray machines and one radiation surveymeter were not maintained and calibrated
5. Area for film loading and unloading is dusty. Cigarette butts were found in the film cabinet.
6. Calibration schedule with list of all equipment is not available
7. The procedure MPA-QM-EQ-1 needs to be revised since there are some confusion and contradiction with ASME code or BS standard
8. Report forms are not adequately filled
9. RT procedure was not revised
10. IQI sensitivity 2% quality is not applicable anymore to the ASME V current version
11. The equipment used for conductivity measurement is made from GE Inspection Technologies. However, the procedure specifies the conductivity meter made from Hocking
12. Her name as Signatory is not applicable anymore since she is not signing any NDT report
13. Maintenance and intermediate checks were performed by assigned personnel per planned schedule except for IRIS.
14. However work instruction for radiography do not cover computerize radiography technique
15. The inspection reports were signed by approved signatories. However some reports were not reviewed and not identified
16. However he is not referring to the company procedure when doing inspection
17. However one equipment i.e. UTF I000335 Sonatest 250 has no calibration sticker
18. Check also on UT report UTFDXXX – No unit for length tested (mm?).

At the early stage, the NC may be on the equipment, availability of reference materials, work culture and lack of knowledge. After some time less NC found and the mistake may be on updated knowledge to the current technology changes.

To maintain the ISO system it is importance to work like a team, being a good professional and disciplined work. All the jobs are important. Do what is written and write what you do.

CONCLUSION

The purpose of assessment or auditing is to improve and to make the people works correctly. It should not be used for finding mistakes only. It is also to maintain the system functionality. The longer the system exist the lesser will be the mistake.

K. Isikawa:

• Quality control is applicable to any company and must be applied to all the company

• A company that does not practice quality control will not last

• Quality control fails when nobody understands it

• Quality control begins and finishes with education and training

• People show their true capacity when their abilities are use dsuitably and responsibility is given to them

• A company that does the inspection of 100 per 100 is a company that makes defective products

• Quality is not created by means of the inspection: it is obtained by means of the design and the process

• If the management get upset, angry, when defective units are produced, then the people will hide it

• The normalization allows authority to be delegated