



**STANDARD FOR CERTIFICATION**

**No. 2.9**

**Approval Programme No. 402B**

**FIRMS ENGAGED IN NON DESTRUCTIVE TESTING (NDT)  
ON OFFSHORE PROJECTS AND OFFSHORE UNITS /  
COMPONENTS**

OCTOBER 2008

**DET NORSKE VERITAS**

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# FOREWORD

DET NORSKE VERITAS (DNV) is an autonomous and independent foundation with the objectives of safeguarding life, property and the environment, at sea and onshore. DNV undertakes classification, certification, and other verification and consultancy services relating to quality of ships, offshore units and installations, and onshore industries worldwide, and carries out research in relation to these functions.

## Standards for Certification

Standards for Certification (previously Certification Notes) are publications that contain principles, acceptance criteria and practical information related to the Society's consideration of objects, personnel, organisations, services and operations. Standards for Certification also apply as the basis for the issue of certificates and/or declarations that may not necessarily be related to classification.

A list of Standards for Certification is found in the latest edition of Pt.0 Ch.1 of the "Rules for Classification of Ships" and the "Rules for Classification of High Speed, Light Craft and Naval Surface Craft".

The list of Standards for Certification is also included in the current "Classification Services – Publications" issued by the Society, which is available on request. All publications may be ordered from the Society's Web site <http://exchange.dnv.com>.

The Society reserves the exclusive right to interpret, decide equivalence or make exemptions to this Standard for Certification.

This issue supersedes Approval Programme No. 402B of October 2005.

## Main Changes:

— references to the ISO9000 series have been updated.

Comments may be sent by e-mail to [rules@dnv.com](mailto:rules@dnv.com)

Comprehensive information about DNV and the Society's services is found at the Web site <http://www.dnv.com>

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## 1. General

### 1.1 Scope

Firms providing services on behalf of a client, such as NDT (Non Destructive Testing), which are qualified in accordance with a recognised scheme (MT, PT, UT, RT, ET and ACFM) on offshore components/structures which have or will have DNV classification shall be approved by the society. In this document such firms will be referred to as the supplier.

Suppliers shall be approved in accordance with this program. See also references under 7.

### 1.2 Objective

The objective of this approval program is to ensure the supplier is using appropriate procedures, has qualified and certified personnel and has implemented written procedures for training, performance, application, control, verification and reporting. In addition, the supplier shall furnish appropriate equipment and facilities commensurate with providing a professional service.

### 1.3 Extent of engagement

The approval program defines the procedures required in obtaining the Society's approval for carrying out the NDT performance of structural materials and machinery components of offshore units classed by the Society.

### 1.4 Validity

The approval will be valid for three (3) years. For cancellation of approval, see item 6.

### 1.5 Terms and definition

Reference is made to recognized national and international standards or certification programs e.g. EN 473, ISO 9712.

## 2. Requirements for supplier

A certificate of approval will be awarded and maintained on the basis of compliance with the following.

### 2.1 Submission of documents

The following documents shall be submitted for review;

- an outline of supplier's organization and management structure, including any subsidiaries to be included in the approval
- information on Quality Management System
- quality manual and/or documented procedures covering the requirements given in item 2.3
- a written procedure developed in accordance with a recognized national or International NDT standard (i.e. EN 473 or ISO 9712 or equivalent, like ASNT-SNT-TC-1A or 'NORTEST').
- operational work procedures for each NDT method
- training and certification programs for NDT operators including training on various offshore products and application of NDT related to them, e.g., jack-up, semi-submersible, FPSO, etc,
- experience of the supplier in the specific service area,
- a list of NDT operators' documented training and experience within the relevant service area, including qualifications and certification according to recognized national, international standards, as relevant.
- description of equipment used for the particular service for which approval is sought
- a guide for NDT operators to use such equipment
- record formats for recording results of the services referred to in item 2.13

- information on other activities which may present a Conflict of interest
- record of customer claims and corrective actions
- requested by the society and/or other certification bodies
- any legal proceedings against the company in the past/currently in the courts of law.

### 2.2 Extent of approval

The supplier shall demonstrate, as required in 2.4 to 2.13, that it has the competence and control needed to perform the specified services.

### 2.3 Quality management system

#### 2.3.1 Quality system

The supplier shall have a documented quality management system, covering at least:

- work procedures
- preparation, issuance, maintenance and control of documents
- maintenance and calibration of the equipment
- training programs for the NDT operators and the supervisors
- certification of NDT operators including re-validation
- procedure for test of operators visual acuity
- supervision and verification of operation to ensure compliance with the approved operational procedures.
- quality management of subsidiaries
- job preparation
- recording and reporting of information, including retention time of records
- code of conduct for the activity
- periodic review of work process procedures
- corrective and preventive action
- feed back and continuous improvement
- internal audits
- the provision of an engineering library with required codes, standards and procedures to assist NDT operators.

A documented Quality system complying with the most current version of ISO 9000 series and including the above, would be considered acceptable.

### 2.4 Training and certification of NDT personnel

The supplier is responsible for the training and 3<sup>rd</sup> party certification of its supervisors and operators to a recognized certification scheme.

Level III personnel must be certified by an accredited Certification body.

Records of qualifications and training shall be maintained.

### 2.5 Supervisor

The supplier shall have a supervisor responsible for the appropriate execution of NDT operation and for the professional standard of the operators and their equipment, including the professional administration of the working procedures.

The supervisor, as a minimum, shall be independently certified to the requirements of Level III of a recognized certification scheme by an Accredited Certification body (e.g. ASNT, PCN, CINDE, AINDT, etc.).

Level III by appointment is not acceptable.

The Supervisor shall be responsible for review and approval of NDT Procedures, NDT reports, Calibration of NDT equipment and tools, Certification of NDT Operators and accessible to the Society.

Where such an independently certified Level III is not availa-

ble in house, the supplier can access such services from external resources under agreement, as applicable.

The supervisor's training, qualification, experience and certification shall be re-evaluated at regular intervals for recertification set by the Accredited body that originally certified the Supervisor, (normally every 5 years).

## 2.6 Operators

The operator carrying out the NDT, as a minimum, shall be qualified and certified to the requirements of Level II in accordance with a "Supplier's Written practice" developed in accordance with a recognized National or International NDT standard or equivalent; e.g. EN 473, ISO 9712, ASNT, PCN, CSWIP.

The operator shall have adequate knowledge of materials, structures or components, NDT equipment and limitations that are sufficient to apply the relevant NDT method for each application appropriately.

Where the Supplier does not have Certified Level III personnel in house, certification of Level II NDT operators by accredited schools and Institutions is desirable; e.g. TAFE, Community colleges, ASNT, PCN, CSWIP etc.

The Supervisor on behalf of the Supplier shall re-evaluate the training, qualification and experience of the Operators annually for re-validation either by experience or by examination, as applicable, including endorsement of the operators certificate. The operators shall be re-certified at least every three years.

## 2.7 Personnel records

The supplier is required to keep records of the approved NDT operators.

The record shall contain information on age, formal qualification, training, certification, re-validation and experience in NDT.

The approval of the supplier covers the NDT operators at the time of the approval.

The company shall maintain these records so that they are easily auditable.

The records will be reviewed by DNV during the kick off meeting for each particular job.

## 2.8 Equipment

A record of the equipment used for NDT shall be kept. The record shall contain information on maintenance and calibration. Where the supplier hires equipment from external resources, the equipment shall have calibration records.

Where the equipment is of unique nature, the NDT Operators shall be trained in the operation and use of the equipment before carrying out NDT.

## 2.9 Work procedures and instructions

The supplier shall have documented work procedures with reference to national / international standards that are at least to contain information on NDT methods, calibration checks, inspection procedure, defect evaluation against acceptance criteria in accordance with DNV Rules, or other applicable project requirements and reporting.

## 2.10 Administrative procedures

The supplier shall have an order reference system where each engagement is traceable to when, who and where the test was carried out including the location of test record and reports.

## 2.11 Verification

The supplier shall have a system to verify that the service provided is carried out in accordance with approved procedures. Executed verification should be documented.

The supplier shall submit all reports to DNV for each particular job for verification that class requirements have been fulfilled

before the job is closed. This may have to be carried out through the Supplier's Client based on the requirements of the contract between them.

## 2.12 Sub-contractors

The supplier shall give information of agreements and arrangements if any part(s) of the services provided are subcontracted. The supplier, in the following-up of subcontracts shall give particular emphasis to the quality management system of the subcontractor.

Subcontractors shall meet all the requirements of section 2.1 to 2.13 of this program.

## 2.13 Reporting

All NDT shall be properly documented in such a way that the performed examination can be easily retraced at a later stage. The reports shall identify the unacceptable defects present in the tested area, and a conclusive statement as to whether the material, weld, component or structure satisfies the acceptance criteria or not.

The examination report shall include a reference to the applicable standard, NDT procedure and acceptance criteria.

In addition, and as a minimum, the following information must be given:

- name of the company
- name of the client
- name of the project/vessel
- operator's name and certification level carrying out the testing
- contract requirements e.g. order no., specifications, special agreements etc.
- object and drawing references
- place and date of examination
- material type and dimensions
- post weld heat treatment, if applicable
- location of examined areas, type of joint
- welding process used
- surface conditions
- temperature of the object
- number of repairs (if specific area are repaired)
- sketch showing location and information regarding detected defects
- extent of testing
- test equipment used
- description of the parameters used for each method, including:
  - reference standard used as acceptance criteria
  - description and location of all recordable indications
  - examination results with reference to acceptance level
  - name of the person issuing the report with his/her certification level
  - name of the person verified the report with his/her certification level.

Specific for each method:

*Eddy current:*

- probes, type and frequency
- phase e.g. 180°, 360°
- identification of reference blocks used
- calibration report
- reporting level, if different from acceptance level.

*ACFM:*

- the supplier shall have their NDT Supervisor and Operators trained and certified in ACFM to gain approval to carry out testing using ACFM technique
- approval for Eddy Current SHALL NOT automatically qualify to do testing by ACFM

- certification for ACFM is available through the Welding Institute, and results in a level II CSWIP certification.

#### *Magnetic particle testing:*

- type of magnetisation
- type of current
- detection media (type and manufacturers name)
- viewing conditions
- demagnetisation, if required.

#### *Penetrant testing:*

- penetrant system used, e.g. coloured or fluorescent
- application methods
- dwell time
- viewing conditions
- materials used including batch numbers.

#### *Radiographic testing:*

- image quality indicator (IQI)
- film focus distance (FFD)
- geometric un-sharpness
- sensitivity
- density
- film, screens and filter
- source type, focus dimension, source activity, used tube voltage and current
- exposure techniques, including exposure time.

#### *Ultrasonic testing:*

- probe angle and frequency
- identification of reference blocks used
- 'couplant' medium
- noise level suppression
- reporting level, if different from acceptance level.

The report shall also include an approval number for the service supplier.

## 3. Approval procedures

### 3.1 Initial audit

The Society will carry out an audit of the supplier once all documentation and information received from the supplier has been evaluated.

The audit will be carried out by reviewing records submitted by the supplier, a visit to the supplier's facility /office and interview of personnel including certified Level III supervisor.

### 3.2 Renewal audit

Renewal of the certificate of approval shall be made at intervals not exceeding 3 years.

Verification shall be through audits confirming, or otherwise, that approved condition is being maintained.

Intermediate audits may be required if found necessary by the Society.

At least three months before the period from the current expiry date, the supplier shall apply to the Society for renewal of the certificate of approval.

### 3.3 Random audit

DNV may initiate random audit if deemed necessary, either as part of the approval process or as the result of findings during a project. The audit may be either a review of documentation or a verification of processes, using DNV level III operators.

Supplier shall provide access to their records, people and facilities upon request.

## 4. Certificate of approval

### 4.1 Approval of the supplier

If the submitted documentation and the surveyor's audit and the practical demonstration are found satisfactory, the supplier will receive a certificate of approval.

### 4.2 Scope of the approval

The approval will be specific to the NDT methods, list of operators approved at the time of the audit and to the geographical region of the company where the audit is implemented.

The approval for NDT methods will depend on availability of supplier's certified supervisor and NDT operators certified in the methods for which the approval is sought.

The approval is not interchangeable across regions. A separate application will be required for a region that is different from the currently approved for.

## 5. Information on alteration to the certified service operation system

### 5.1 Alteration

In cases where any alteration to the certified service operation system of the supplier is made, such alteration is to be reported immediately to the Society. A re-audit may be required when deemed necessary by the Society.

## 6. Cancellation of the certificate of approval

### 6.1 Right to cancel

The Society reserves the right to cancel the certificate of approval in the following cases:

- where the service was improperly carried out or the results were improperly reported
- where a surveyor finds deficiencies in the approved service operation system of the supplier, and appropriate corrective action is not taken
- where the supplier fails to give information of any alteration, as given in 5.1
- where an intermediate audit, if requested as described in 3.2, has not been carried out
- where willful acts or omissions are ascertained
- violation of code of ethics and conduct (e.g. as specified in ASNT level III certificate holder).

### 6.2 Information

The Society reserves the right to inform interested parties on cancellation of the certificate of approval.

### 6.3 Re-approval

A supplier that has had the certificate of approval cancelled may apply for re-approval after a period of one(1) year. This possibility is not open, if the cancellation was based on a serious fault, such as a violation of code of conduct.

## 7. References

- EN 473 Non destructive testing Qualification and certification of NDT personnel-General principles
- ISO9712 Non destructive testing Qualification and certification of NDT personnel
- ISO 9000 Series
- ASNT Central Certification Program (ACCP)
- ASNT Recommended Practice No - SNT-TC-1A.