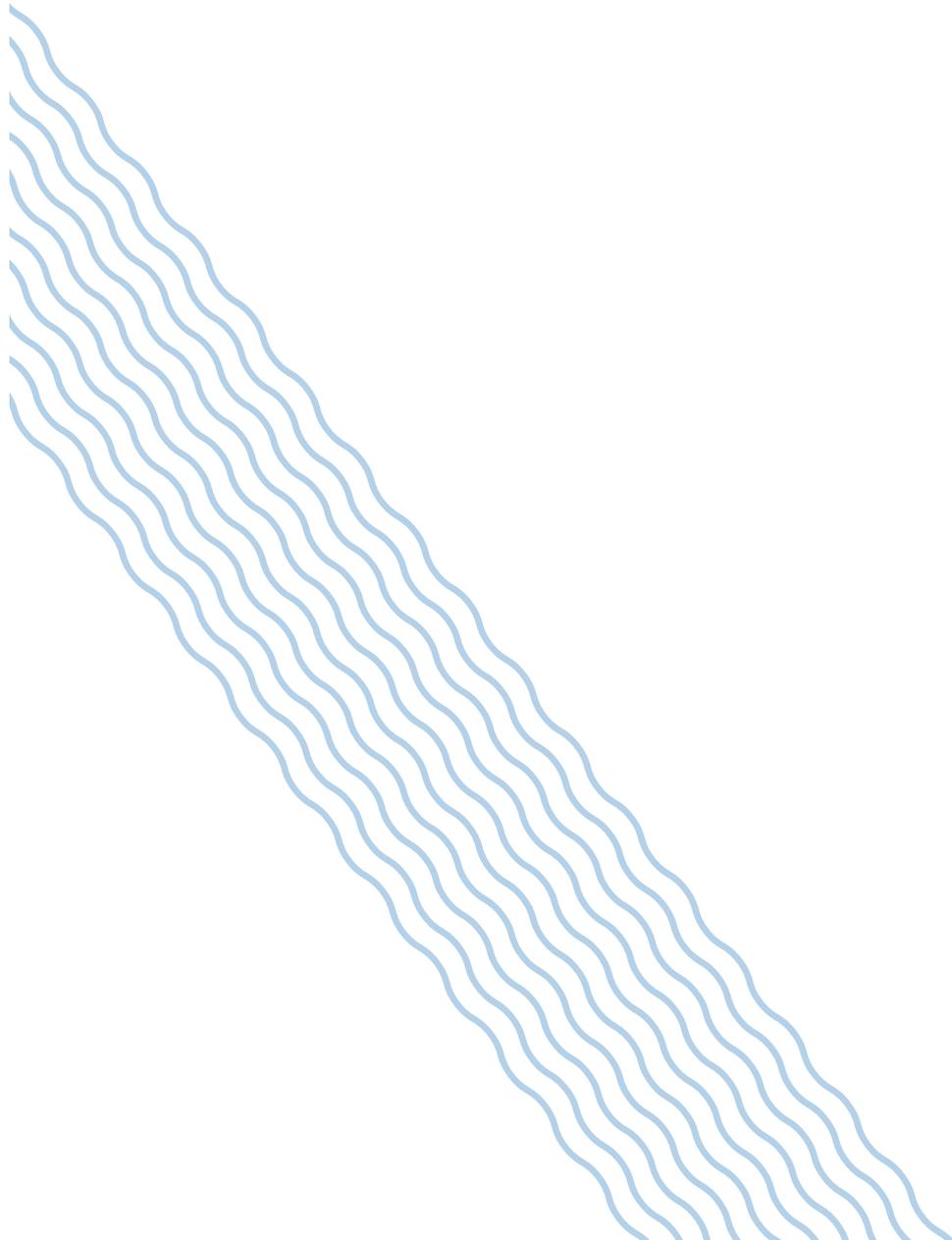

Annual Report 2011

The assessment of QMS
Certification of EU Maritime
Recognised Organisations



Entity for the Quality
Assessment and Certification
of Organisations Recognised
by the European Union CIC



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Community interest company
limited by guarantee

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Glossary

| | |
|----------------|--|
| ABS | American Bureau of Shipping [RO] |
| ACB | Accredited Certification Body |
| BSI | The British Standards Institution [Certification Body] |
| CCS | China Classification Society [RO] |
| CIC | Community Interest Company |
| CO | RO Controlling Office |
| DEKRA | DEKRA Certification GmbH [Certification Body] |
| DNV | Det Norske Veritas AS [RO] |
| DQS | DQS GmbH [Certification Body] |
| EC | European Commission |
| EMS | Environmental Management System |
| EMSA | European Maritime Safety Agency |
| EU | European Union |
| GL | Germanischer Lloyd SE [RO] |
| HO | RO Head Office |
| IACS | International Association of Classification Societies |
| IACS PR | IACS Procedural Requirements |
| IACS UI | IACS Unified Interpretations |
| IACS UR | IACS Unified Requirements |
| IAF | International Accreditation Forum, Inc. |
| IAF MD | IAF Mandatory Document |
| IMO | International Maritime Organization |
| ISM | International Safety Management Code |
| ISO | International Organization for Standardization |
| ISRSISPS | International Ship and Port Facilities Security Code |
| KR | Korean Register of Shipping [RO] |
| LR | Lloyd's Register [RO] |
| MSC | IMO's Maritime Safety Committee |
| NC | Audit finding graded as Non Conformity |
| NK | Nippon Kaiji Kyokai [RO] |
| OB | Audit finding graded as Observation |
| PA | RO Plan Approval Centre |
| QMS | Quality Management System |
| QSCS | IACS Quality System Certification Scheme |
| RINA | RINA Services S.p.A. [RO] |
| RINAVE | Registro Internacional Naval SA [RO] |
| RO | Recognised Organisation |
| RS | Russian Maritime Register of Shipping [RO] |
| SAI G. | SAI Global Limited [Certification Body] |
| SGS | SGS S.A. [Certification Body] |
| SL | RO Survey Location |
| UTM | Ultrasonic thickness measurement |
| VCA | Vertical Contract Audit |

Executive Summary

“QACE - Entity for the Quality Assessment and Certification of Organisations Recognised by the European Union CIC” was founded 24 November 2010 by the 12 organisations currently recognised by the European Commission as “Recognised Organisations”. QACE was incorporated 30 November 2010 in England as a private company limited by guarantee, established as a community interest company. The company has its office in London and is a not-for-profit company.

The independent Board of Directors has decided that QACE will exercise its mandate by conducting observations and assessments of the audits and certification carried out by independent Accredited Certification Bodies (ACBs) contracted by the EU ROs, as set out in its own QACE Procedures.

In 2011 QACE carried out 21 observations. Based on the observations and the assessment of audit findings, QACE draws attention to 7 collective recommendations related to auditors’ capacity and practice, to audit planning, to VCA selection, to robustness of findings and rectification procedures, and finally to the updating of technical procedures.

I Preamble

This is the first annual report of QACE, with the purpose of recording its activities and communicating the collective recommendations of the independent Board of Directors (Annex A) to interested parties. The assessment is based on observations of audits against international standards for quality management.

II Introduction

“QACE - Entity for the Quality Assessment and Certification of Organisations Recognised by the European Union CIC” was founded 24 November 2010 by the 12 organisations currently recognised by the European Commission as “Recognised Organisations” – “ROs” (Annex B) – to the European Community Member States. The establishment was the result of the introduction of mandatory requirements in EU Regulation (EC) No 391 / 2009 on “Common rules and standards for ship inspection and survey organisations”. Article 11 in this Regulation requires the ROs to the European Community to “set up by June 2011 and maintain an independent quality assessment and certification entity in accordance with the applicable international quality standards ...”.

QACE was incorporated on 30 November 2010 under the English Companies Act 2006 as a private company limited by guarantee that is a community interest company and is not-for-profit. The company has its office in London.

The EU Regulation states that the quality assessment and certification entity shall carry out “frequent and regular assessment of the quality management systems of recognised organisations, in accordance with the ISO 9001 quality standard criteria” and “certification of the quality management systems of recognised organisations”. The Regulation also states that “The quality assessment and certification entity will lay down its working methods and rules of procedure.”

The independent Board of Directors of QACE has decided that QACE will exercise its mandate under the EU Regulation by conducting observations and assessments of the audits and certification carried out by independent Accredited Certification Bodies (ACBs) contracted by the ROs to the extent that it will verify and assess that the requirements of ISO 9001 and of the internationally recognised quality standards for ROs (e.g. IACS Quality System Certification Scheme (QSCS) Requirements) are fulfilled, as set out in its QACE Procedures.

III

Assessment Standards

The main basis of assessment is the ISO 9001 quality standard.

Eleven of the current twelve ROs recognized by the EU are today members of IACS (International Association of Classification Societies). All these ROs are required to have a QMS compliant with the "IACS Quality Management System Requirements" and with rules and procedures compliant with the IACS Technical Resolutions. The IACS "Quality Management Systems Requirements" (QMSR, therein referred to as 'QSCS') are built upon the quality management requirements of ISO 9001, including, where considered necessary, additional requirements and guidelines relevant and appropriate to classification societies. The IACS QSCS has been in operation since the early 1990's.

The "Minimum requirements" of the EC Regulation are explicitly or implicitly included in QSCS as well.

The QSCS system has recognition far outside IACS. A considerable number of Flag Administrations require in their flag agreements that the RO shall be compliant with QSCS. The same condition is also common in many insurance agreements. IMO itself has implicitly recognised QSCS by having appointed an "IMO observer to QSCS" who reports to MSC.

Concurrently with the establishment of QACE the IACS QSCS has been subject to significant changes to the structure and the manner of operation. From 2011 the audit and certification process of QSCS for the IACS members has been entrusted to independent ACBs. The yardstick for QACE's assessment of ACBs has been that the QMS audits should be equally effective as under the previous IACS system, inclusive of the full application of the ISO 9001 related requirements.

IV

Work Plan and Procedures

At the beginning of 2011, the QACE Board of Directors adopted procedures with requirements that needed to be fulfilled when ROs contract with ACBs, and more specific procedures for the audit and certification process of ROs. The first "Annual Work Plan – 2011" was adopted by QACE Members in an Extraordinary General Meeting on 25 February 2011. The Work Plan describes the purpose and scope of observation activities for QACE. The purposes of QACE's observations of audits conducted by ACBs of ROs are:

- to ensure that the audit and the certification processes are conducted consistently, to common standards and are being carried out satisfactorily according to the procedures of QACE,
- to collect information in order to adopt individual and collective recommendations for the improvement of ROs' processes and internal and external control mechanisms, and
- to enhance the ability of ROs to identify rapidly and then correct weaknesses in their rules, processes and internal controls for the safety of the ships they inspect and certify.

In the first year of operation the main focus for the observations has been on the first item, i.e., on the consistency of audits and the fulfilment of requirements defined for the audit and certification processes.

V Observation Activities

QACE commenced the observation of ACB audits of its member ROs in April 2011. By the end of 2011 QACE had carried out 21 observations. Nine observations were on Head Office audits, 5 on audits of Plan Approval Centres outside Head Office, 7 on audits of various types of Management Control Offices, 9 on Survey Office audits and 8 on Vertical Contract Audits (VCA). Many observations combined audits at various types of offices with VCAs.

It was not possible to cover the full range of observations for all ACBs, their auditors, and ROs in 2011. This is partly because the QACE observations commenced after the audit programme for some ROs had started or even had been almost complete, and partly because of logistics related to capacity and timing for observers. Also, observations of audits with certain ACB auditors were not pursued as some auditors working for several ACBs were satisfactorily covered by prior observations.

The observations carried out in 2011 were, as follows:

| ACB | RO | Where | Date Start | Type |
|--------|--------|------------|------------|-----------------|
| SGS | ABS | Houston | 26-Apr | HO |
| DEKRA | DNV | Hovik | 02-May | HO |
| SGS | ABS | London | 09-May | CO, PA |
| BSI | RINAVE | Lisbon | 16-May | HO, PA, SL, VCA |
| BSI | LR | London | 13-Jun | HO |
| SAI G. | RS | Turku | 24-May | SL |
| SAI G. | RS | Odessa | 07-Jun | CO, PA, SL, VCA |
| DEKRA | RINA | Shanghai | 13-Jun | CO, PA, VCA |
| SGS | CCS | Osaka | 21-Jun | CO, SL |
| SGS | NK | Tokyo | 01-Aug | HO |
| SGS | NK | Nagoya | 09-Aug | SL, VCA |
| SGS | NK | Shanghai | 15-Aug | PA |
| DQS | GL | Hamburg | 22-Aug | HO (1) |
| SGS | CCS | Beijing | 29-Aug | HO |
| SGS | CCS | Qingdao | 02-Sep | VCA |
| DQS | GL | Copenhagen | 22-Sep | CO, SL, VCA |
| BSI | LR | Houston | 25-Sep | CO, SL, VCA |
| SGS | KR | Tongyeong | 26-Sep | SL, VCA |
| SGS | KR | Daejeon | 28-Sep | HO |
| DQS | GL | Hamburg | 31-Oct | HO (2) |
| DEKRA | DNV | Singapore | 28-Nov | CO, PA, SL |

VI Relations with Other Organisa- tions

QACE was able to establish itself promptly and start operations thanks to significant ground work and effort by Members prior to the Foundation Meeting in November, 2010.

Furthermore, QACE has benefited from relationships with other organisations and agencies in related fields of quality management. Further, the International Association of Classification Societies (IACS) has already developed a programme recognised as state-of-the-art standards for quality management for classification societies. QACE benefits from this specialised quality management scheme by adopting and adapting its procedures based on the IACS programme.

The QACE Chairman of the Board and the Executive Secretary attended the IACS End User Workshop held in Beijing, October 2011. This exchange of information was profitable for both parties.

In addition, QACE has an agreement with each EU RO that is also an IACS member to gain access to their respective certification audit findings database held by IACS.

All EU Recognised Classification Societies as well as their respective Accredited Certification Bodies have consistently cooperated in the best way to facilitate QACE's observations.

On the initiative of QACE the Board of Directors has met with the EU Commission and the European Maritime Safety Agency (EMSA) to provide information on the progress of tasks and to ensure fruitful cooperation.

VII Main Findings

QACE has observed a newly adopted system that is working toward consistent and robust audits and recognises the efforts being made by ACBs and RO to ensure that this occurs. There are variations between ACBs and between ROs. The ACBs have had a challenge to incorporate the scheme into their non-industry specific operations in the very first year of implementation. Recognising that progress has been made to various degrees by different ACBs, QACE draws attention to four areas of audit system that require improvements, and which may result in changed or strengthened procedures:

1. Auditors' knowledge – basic knowledge of the maritime industry, and particularly knowledge about ships, and of work processes for classification and for statutory services and certification vary widely among auditors.

Not all auditors lack this knowledge, and it has been noted that for some auditors this knowledge has significantly improved from one observed audit to another, but too many of the auditors assigned do not have sufficient knowledge.

2. Auditors' experience - there is not sufficient practice in the QSCS elements of the audits. Auditors, who are assigned by ACBs contracted to only one RO, and only at domestic locations, will experience too few audits during the year to be able to acquire or maintain the knowledge and training gained in auditing ROs. This may be inefficient regarding training and does not serve well the purpose of the audit.
3. Audit planning – inadequate planning compromises several elements of the process, and may even affect the conditions set out in the contract between the ACB and the RO.

Key aspects of audit planning found by observations are:

- A. Sampling of locations
- B. Time spent on auditing production and service provision
- C. Time allocated for each location
- D. Time allocated for VCA

VCA selection - the selection of Vertical Contract Audits must better represent the types and ages of vessels, and of the services of the Recognised Organisation.

VIII Review of Obser- vations

Representatives from QACE were present at 21 audits of ROs by ACBs. Based on these observations the Board of Directors have developed individual and collective recommendations.

The individual recommendations will be communicated directly to the concerned RO. The general and collective recommendations are given below.

No observations were made of failures in the ROs quality management systems, or in the certification process of the ACBs that would be regarded as potentially compromising safety.

ANNEX C gives a summary review of the observations made.

IX Follow-Up Findings

QACE obtained access to the records of ACB findings from the certification audits of all ROs in 2011.

The assessment of audit findings is based on the following main principles:

- Quality Management System (QMS) Audits represent a measurement of QMS implementation; it is not meant to be a verification of work carried out, or a supplemental survey. Thus, audit findings will not disqualify work carried out or invalidate certificates issued. Audit findings are indications of system weaknesses or system lapses or simple potential improvements, and not a direct measure of work quality.
- Audits are based on sampling. Even if audit sampling of units and activities are regulated to ensure a certain representative selection of types of offices, activities, geographical spread, etc., and rules for audit time are made to ensure that units with many workers and complex work tasks can be audited with comparable depths as smaller units, it is not possible to conclude from a single year's audit that the number of findings are lower or in excess of any "normative finding number".
- Unless findings clearly demonstrate complete or major system breakdown (a result which will prevent the QMS certificate being issued), audit findings will be part of the continual improvement cycle of a QMS (Plan, Do, Check, Act) cycle. Audit findings are used to assess the effectiveness of the QMS and to identify opportunities for improvement.

Robustness of Findings

Bearing in mind the principles stated above it is possible to comment on the findings, their consistency between ACBs and ROs, consistency between findings issued before (when IACS members were audited by a single audit body and by auditors all with a RO background), and now (with a diversified number of independent ACBs, partly with auditors still in a training situation from the viewpoint of RO related work)¹.

¹When comparison is made with the "previous IACS audit scheme" it should be kept in mind that 10 of the 12 EU ROs being members of QACE were also members of the "previous IACS audit scheme". The comparison collectively for those 10 members indicates that an average portion of non-conformities of around 30% of total findings might be encountered.

The first comment is that there are no apparent correlations in the number of findings between ROs audited by the same ACB or between ROs audited by different ACBs. Neither is there any significant correlation between number of findings and the size of the RO (where a bigger RO will have more audit samples both for units/offices and for VCA).

The most striking observation is the apparent low number of non-conformities (NC) compared with the number of total findings. This picture is not without variations, and here the correlation with the various ACBs is more apparent. One particular ACB issues significantly less NCs than the others. Less than 10% of the findings by this ACB are graded as NCs. One other ACB has a NC rate of about 15%, another about 20%. The remaining ACBs have between 25 to 40% of findings graded as NCs. The numbers by itself might not be of concern. As stated, auditing is a sampling process and findings and type of finding may vary depending on the samples. However, by a spot check of the findings given, many findings categorised as Observation (OB) have wording indicating that objective evidence existed for non-fulfilment of requirements (i.e. a non-conformity - NC).

Some ACBs might have a policy on grading findings which is somewhat more careful than the definition in ISO 9000. For example, single cases of non-fulfilment of requirements might not always be graded as NC, as this grade is reserved for more systematic and repeated non-conformities. For some industries this may be a valid approach. However, in the maritime industry where the ROs have their duties, they are accustomed to the issuance of “conditions” for all non-fulfilments of class or statutory requirements, and to require prompt or timely repair.

For the sake of consistency, as well as for the robustness of the audit scheme, and the reputation of the certification scheme, all ACBs are recommended to apply a strict and consistent rule that findings identifying “non-fulfilment of requirements” shall be graded Non-Conformity (NC).

Rectification and Closing on Findings

ACBs have various procedures for the process as to how they require findings to be documented, rectified and closed. Normally, procedures will require more prompt actions to be taken to rectify NCs than for OBs. However, many ACBs will not review proposed corrective actions or verify implementation before the next audit, whether at an annual surveillance of the QMS department to check that all findings from the

previous year have a documented corrective and preventive action recorded, or by verifying implementation of such actions at the next audit of the location of the previous finding.

The ability of ROs to identify rapidly and to promptly correct weaknesses in their rules, processes, and internal controls is critical for the safety of the ships they inspect and certify. The procedures for the certification of ROs should reflect this same ability and require a rapid identification of the possible weaknesses in rules, processes, or internal controls which may be the causes of identified audit findings – whether they are graded as NCs or OBs. The procedures should require appropriate root cause analysis to be carried out and that corrections are applied, together with appropriate corrective actions to eliminate causes of the non-compliance, and preventive actions to eliminate any further related potential non-conformity within a certain proposed time limit.

At the given due date, the ACB should verify – by correspondence or by revisits – that proposed actions have been successfully implemented.

Findings Indicating Lack of Update

Findings may sometimes reveal that external standards and reference documents are not updated to reflect developments in safety regulations. At one observed audit an audit sample was selected of a Special Survey of a Mobile Offshore Drilling Unit. In the course of the audit discussion it became evident that the IACS technical resolution UR Z 15, as the Industry reference for Special Survey of Mobile Offshore Drilling units, had not been updated since its first issue in 2002. In particular, requirements for close-up inspections and scope and procedures for thickness measurements are not updated to be aligned with the development as to similar requirements for ships (e.g. UR Z 7, Rev.18 Jan 2011; PR 19, Rev.0 July 2009).

In order to ensure a consistent level of maritime safety and pollution prevention, the ROs (e.g. through IACS) must verify that the requirements for survey of Mobile Offshore Drilling Units are aligned with the development of procedures and requirements for survey of ships, particularly on the procedures for close-up survey and thickness measurements.

X Summary of Recom- mendations

The collective recommendations relate to:

1. Improving the auditors' knowledge of the specific features of the nature and obligations of ROs, and of the basic work processes for classification and statutory certification services. QACE would encourage that class and flag state surveyors with auditing practice become more involved in audits of ROs through working for ACBs.
2. ROs are generally entrusted with the implementation of a very complex system of regulations. Both classification and maritime statutory certification services are complex processes, and auditors must get adequate and regular practice in performing audits of these processes.
3. Audit planning needs to be better and become more consistent, particularly in relation to:
 - Spread and Sampling of locations
 - Time dedicated to audit Service Provision
 - Time allocated for locations and VCA
4. VCA selections need to be representative for the types and ages of vessels, and of the services, of the RO.
5. Audit findings need to be robust, i.e., they must correctly reflect the objective evidence of the findings and be rated correctly. When non-compliances with requirements are identified the findings must be rated as NC. This is in order to ensure that the ROs will systematically identify non-compliances rapidly and correct weaknesses in their rules, processes and internal controls.
6. For the same reason the procedures for QMS certification of ROs should have aligned rules for findings rectification and closing. Particularly for NC there should be a normative due time for proposing corrective actions, and for both NC and OB documentation of implemented corrective and preventive actions should be verified by the ACB within an agreed time.
7. To obtain a consistent safety level, the ROs should establish processes to update technical resolutions as developments in safety procedures (e.g. surveys) are established. E.g. IACS issues Technical Resolutions which constitutes de facto Industry standards or Industry Best Practice for maritime safety and pollution prevention. The ROs should ensure these are systematically updated.

XI Concluding Remarks

The year 2011 represents the first year of operation for QACE. 2011 is also the first year ROs, IACS member organisations as well as non-members, are audited and certified to the QSCS Quality Management System Requirements by independent ACBs. Thus, 2011 has been a year of change for the QMS certification of the ROs to the European Union countries and the first year for the frequent and regular assessment of these ROs' quality management system certification.

In the first year of observing and assessing the QMS audits of the ROs, QACE has focussed particular attention on the audit system, that is, how the ACBs have planned and conducted the QMS audits, and whether all applicable procedures and requirements of IAF, ISO and QACE have been adhered to.

The observations have resulted in a number of collective recommendations for the improvement of procedures and the interpretation of internationally recognised standards for QMS certification, to take into account the specific features of the nature and obligations of ROs. Thus the findings are of concern but may well be a product of a developing scheme. The year 2012 will be an important year as this development progresses: QACE will observe the performance in 2012 and expects to see issues addressed and improved.

XII Acknowl- edgements

The Board of Directors wish to thank QACE Members, the Executive Secretary and all others that have contributed to this successful first year of operation. QACE was conceived and created on the efforts of many individuals and continues to secure its independent mandate by developing good relations.

Annex A

Elected Non-Executive Directors of the Board for QACE

| | |
|------------------------------|---------|
| Klaus Grensemann | Germany |
| Hiroshi (Dave) Iwamoto | Japan |
| Victor Santos-Pedro | Canada |
| C. Dean Tseretopoulos | Greece |
| Francis Vallat | France |

Executive Secretary

Hans Frivold

Subcontracted Observers

Colin E. Spencer

Annex B

Members of QACE – EU Recognised Organisations

| |
|--|
| American Bureau of Shipping |
| Bureau Veritas SA |
| China Classification Society |
| Det Norske Veritas AS |
| Germanischer Lloyd SE |
| Korean Register of Shipping |
| Lloyd’s Register |
| Nippon Kaiji Kyokai |
| Polski Rejestr Statków S.A. |
| RINA Services S.p.A. |
| RINAVE – Registro Internacional Naval SA |
| Russian Maritime Register of Shipping |

Elected President 2011

Roberto Cazzulo, RINA

Annex C: Review of Observations

Based on QACE observations set out below is the general review and resulting collective recommendations for a more robust audit process:

1 / Auditors’ knowledge

It is not sufficient for general industry QMS auditors to pass the IACS familiarisation course and assume that they will be proficient auditors for a classification society or a Recognised Organisation. In order to carry out a robust audit of an RO, the auditors need to:

- have a good understanding of basic class/statutory work processes;
- know the documents required by Class and Statutory Rules, Surveyor’s Instructions, IACS PR/UR/UI; and
- be familiar with the ROs work process systems, the records which demonstrate compliance with the requirements at each stage of the process, and where to find them.

More specific maritime background in education or through working experience (e.g. naval architect, marine engineer, having survey experience from shipyard work, as ship superintendent, or flag or port state inspector) is highly recommended. It is essential for the auditor to be experienced on maritime matters or at least have a technical expert in the audit team.

2 / Auditors’ experience

To audit specific features on the nature and obligations of ROs and against the QSCS standard requires a good knowledge of a comprehensive, often complicated, and technical set of requirements. It takes effort to be acquainted with and understand the context and connections between all requirements.

The training received and the experiences gained have to be maintained by regular audit practice. Auditors should preferably participate in the magnitude of 5 – 8 QSCS-audits a year.

In order to gain sufficient experience, the auditors should preferably serve several ROs and not one exclusively. Where one ACB is serving several ROs they should consolidate their audit resources between company branches and domestic markets. Classification is a global business. Likewise, the QMS certification process needs to be globally oriented. Consolidated audit teams are more efficient and increasingly more effective, which in turn gives the auditees better results.

Another advantage of serving several ROs is to see the same work processes done at different ROs and gain experience by comparison and cross referencing.

3 / Audit planning

A / Sampling of locations

Sampling of audit locations has been found inadequate for many RO audits. The purpose and scope of audit site sampling should be to give sufficient confidence in the effectiveness of the QMS under audit - at all locations of the worldwide network of surveyors and services.

QACE Procedure P-02 determines that sampling of audit locations shall be made according to IAF MD 1 – “IAF Mandatory Document for the Certification of Multiple Sites Based on Sampling”.

This document requires that the Accredited Certification Body shall have a documented procedure for determining the sample of a multi-site organisation. This procedure should take into account the various factors described in IAF MD1. There is a range of factors which should be considered for an increase in the selection, among others the complexity of the management system and the processes conducted at the sites. The number shall be rounded to the upper whole number, and not downwards; and when the organisation has a system of branches, the sampling model shall apply to each level.

Twenty five per cent of the samples shall be selected at random for each year. The remaining 75% shall be selected to result in a representative range of the sites applicable, and be selected such that the sites selected over the period of the certificate covers as wide range of different locations as possible.

Sampling should be selected by the ACB based on their assessment of the RO’s work processes and network and not be left to the RO alone to propose.

B / Service Provision

The core activity of all ROs is “service provision”. Therefore, the main part of a QSCS audit must focus on Ch. 7 in the QMS Standard and how the service provision processes are implemented in all aspects of the RO activities. All parts of the Standard shall be visited. Document control, Management Involvement, Resources and Qualifications, Measurements, Control and Improvements are all important parts of the audit. However, the management and control of the service provision is the core of an RO’s activity and it should be covered in all its stages from planning to completed delivery by a certificate or a report.

As much as 1/2 to 2/3 of the audit time for each audit location, a unit, a team or a site, ought to be devoted to service provision and the various aspects of Ch. 7

in the Standard.

In addition, job sampling must include sampling of all relevant quality records from the work actually carried out.

C / Time on location

Time for audit at a location, either Head Office, Branch Office, or a Site Office has often been found insufficient to allow a full and thorough audit.

The QACE Procedure P-02 refers to IAF MD 5 to estimate the recommended audit time to be planned for, with the addition in the order of 20% to allow for the additional audit of QSCS related items. However, it is noted that the interpretation of IAF MD5 varies, and that resulting audit time is often insufficient for a thorough audit. Particular items to be noted are:

- The tables to calculate audit duration in MD5 is based on net 8 hours audit time a day. Any adjustments for travel, lunch breaks, other breaks or working hour regulations shall be compensated by more audit time.
- The audit time must be estimated for each individual site, or department, or team, based on the effective number of personnel at each site, or team.
- There are factors for adjustment of audit duration which must be considered, among those the most significant ones, being:
 - High degree of regulations
 - System covering complex processes

IAF MD5 indicates that for the surveillance audit, the time spent must be about 1/3 of the time given by Table QMS 1. Given the factors already mentioned, this proportion of time seems too low. Half of the time

given by Table QMS 1 would be a more appropriate starting point for audit duration planning.

There have also been observed some combined audits, where a QMS audit is combined with EMS and H&S MS audits. IAF MD 5 is very clear that audit time in such circumstances must be calculated separately.

D / Time for Vertical Contract Audit

Audit time for VCA shall be planned separately from the site audit time.

Travel time shall not be included in the audit time. The transport logistics of a VCA can be quite demanding. Depending on the port, yard, the site office and the surveyor’s base, travel time can be considerable and close cooperation between RO and ACB in the planning is essential.

The VCA shall comprise all of the survey process preceding the audit day and include the actual survey of the day. This means that all stages of planning from survey request and all survey activities carried out until the day of audit shall be subject to the audit. Enough time must be planned for review of relevant quality records (e.g. UTM records, material certificates etc.) on site office and/or on board to verify compliance with requirements.

The audit of the actual survey shall particularly verify the application of acceptance criteria, and also to verify Health and Safety compliance. A VCA should preferably include a “patrolling survey” of the vessel, i.e., a tour of the vessel to verify the general level of safety and maintenance standard.

If possible, the survey result should also be part of the VCA, i.e., to verify the correctness of the audit report and certificates.

As a guide for planning, the duration of a VCA could be as follows:

- New construction projects – 1.5 to 2.0 audit days
- Surveys of ships in operation
 - Renewal and Intermediate survey: 1.5 to 2.0 audit days
 - Annual surveys 1.0 to 1.5 audit day (for smaller vessels and less complex surveys this could be reduced to one day.)
- ISM/ISPS – 1 audit day
- Survey for certification of materials/components/suppliers - 1 audit day

Travel time must be considered in the planning; generally it should not be included in the net audit time.

4 / VCA selection

VCA sampling has in many cases been found to be too narrow – or too many similar vessel types or age. The sampling does not give a representative selection of survey types or survey complexity for the RO's fleet and the sampling will not be sufficient to ascertain effectiveness of the survey processes of the RO under audit.

It is acknowledged that a suitable VCA may not always be available in the proximity of scheduled audit sites, and that sometimes a VCA must just be done on the available survey job. However, efforts should

be taken to achieve a representative selection, and close cooperation between the RO and the ACB is needed to accommodate selection of suitable and substantive VCA targets. All ROs receive good notice of the due dates for upcoming surveys, and even if time windows for surveys may be wide and the survey port may be uncertain until a few days before the survey, it is nevertheless possible to make some analysis of available data and make educated guesses. The chance to find a suitable VCA in the major repair ports will also increase if the ACB can serve several ROs and pick available vessels for more than one RO at a single location and travel.

A reasonable portion of the VCA – proportional with the age profile of the RO's fleet – should be selected among older vessels, say, of vessels in operation of age > 10 years.

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