

THE E&P FORUM

**GUIDELINES FOR HSE AUDITING
IN THE GEOPHYSICAL INDUSTRY**

**Report No. 6.53/245
September 1996**



E&P Forum
Guidelines for HSE Auditing in the Geophysical Industry
Report No. 6.53/245
September 1996

E&P Forum, 25–28 Old Burlington Street, London W1X 1LB
Telephone: 44-(0)171-437 6291 Fax: 44-(0)171-434 3721

IAGC (International Association of Geophysical Contractors)
P.O. Box 460209, Houston, TX 77056 - 0209, USA
Telephone: 1-713 850 7981 Fax 1-713 850 7984

IAGC (EAME Secretariat), 4 St James Road, St John's Hill,
Sevenoaks, Kent TN13 3NH, UK
Telephone: 44-(0)1732-743025 Fax: 44-(0)1732-740623

Authors

This report has been developed for E&P Forum in collaboration with members of the IAGC by the Forum's Safety Health and Personnel Competence Committee (SHAPCC) through a specially convened Task Force of the Seismic Safety Sub Committee.

Mr. I. G. Jack	BP, Chairman
Mr. D. Bliss	PGS
Mr. M. Covil	IAGC
Mr. T. J. Dujmovich	Conoco
Mr. H. Hansen	Geco Prakla
Mr. T. Jackson	BP
Mr. G. Reynolds	Western Geophysical
Mr. J. Howell	Western Geophysical
Mr. J. L. Teurlai	Shell
Mr. R. C. Thonger	G.S.R

The E&P Forum

The Oil Industry International Exploration and Production Forum (E&P Forum) is the international association of oil companies and petroleum industry organisations formed in 1974. It was established to represent its members' interests at the specialist agencies of the United Nations, governmental and other international bodies concerned with regulating the exploration and production of oil and gas. While maintaining this activity, the Forum now concerns itself with all aspects of E&P operations, with particular emphasis on safety of personnel and protection of the environment, and seeks to establish industry positions with regard to such matters.

At present the Forum has 60 members worldwide, the majority being oil and gas companies operating in 60 different countries, but with a number of national oil industry associations/institutes.

IAGC

The International Association of Geophysical Contractors (IAGC) is an international trade association formed in 1971 which represents the interests of the independent geophysical service companies and integrated oil companies that perform most of the geophysical operations world-wide. Other members include geophysical equipment manufacturers, data processing centres, data brokerage firms, consultants and suppliers of products and services to the industry. At present, the IAGC has in excess of 225 members located throughout the world.

Disclaimer

Whilst every effort has been made to ensure the accuracy of the information contained in this publication, neither the E&P Forum nor IAGC nor any of their members will assume liability for any use made thereof.

GUIDELINES FOR HSE AUDITING IN THE GEOPHYSICAL INDUSTRY

CONTENTS

BACKGROUND TO GEOPHYSICAL HSE AUDITS	2
EXPECTATIONS AND OBJECTIVES	3
RELEASE OF AUDIT REPORTS	4
SCOPE	5
Scope of audit	5
Target locations, facilities & functions	5
Audit content	5
AUDIT SCHEDULING AND FREQUENCY	8
ROLES, RESPONSIBILITIES AND COMPETENCIES	8
Commissioner of the audit	8
The Auditee	8
Lead Auditor	9
Auditors	9
Audit team competencies	9
AUDIT PROCESS	11
Pre-audit information and planning	11
Onsite activities	11
Post-audit activities	12
<i>Audit reports</i>	12
<i>Follow-up and closure of actions</i>	12
REFERENCE DOCUMENTS	13

The Board of Directors of the International Association of Geophysical Contractors (IAGC) has carefully reviewed these guidelines and finds them acceptable as guidelines for good industry practice. Individual member companies of the IAGC take this position in reliance on the understanding that these guidelines will be generally used by the E&P Forum member companies in lieu of, and not in addition to, similar sets of guidelines, recognising, however, that certain job specific or site specific modifications/additions may be necessary in individual cases.

BACKGROUND TO GEOPHYSICAL HSE AUDITS

Audits help to protect the interests and well-being of employees, customers, visitors and local communities.

Audits are a normal part of business control (see the E&P Forum *Guidelines for the Development and Application of Health, Safety and Environmental Management Systems (HSE-MS)*, Report No. 6.36/210, section 7). They provide assurance to management that the Health, Safety and Environmental (HSE) risks of a particular operation are well controlled and managed, and that the operation is being executed competently, in accordance with license conditions and relevant legislation. They evaluate the effectiveness of the implementation of an HSE management system.

Current practice as to type, content, purpose and frequency of audits is highly variable throughout the industry. There are statutory compliance audits, management system audits, quality and safety audits, operational (static and dynamic) audits, sub-contractor audits, etc. Typically, contractors perform a minimum of one internal audit per year on each major operation. However, some contractors never conduct audits at all. Likewise, some clients audit each operation, while others audit none. There have been cases of vessels having been audited more than once on one day, by different clients.

Audits are conducted against the HSE management systems of the auditee, and as required by regulatory bodies or as called for in E&P Forum schedules/guidelines.

Currently, audit results or 'reports' do not easily cross company boundaries.

In this document, the word 'client' is taken to mean the oil company or operator, thus retaining its common usage in the geophysical industry. Audits are commissioned by clients, contractors and sub-contractors.

EXPECTATIONS AND OBJECTIVES

It is the expectation in producing this guideline that geophysical contractors will take over the activity of commissioning and conducting audits and subsequent follow-up reports. These would then be made available to clients upon request, and accepted by them, provided that they are carried out in accordance with this guideline.

In order to assure the quality of audits, it is expected that they will include elements of assurance external to the operation being audited.

It is an expectation that an HSE-effective operation is a cost-effective operation, and that audits should help to encourage personnel to be more HSE conscious, through a learning process.

The resources committed to the audit should be sufficient to meet its intended scope.

Clients may wish to verify the contractor's audit process, for example by conducting an occasional audit themselves, as part of their own HSE management system.

This guideline has several purposes:

- To help reduce the incidence of excessive client auditing especially of seismic vessels and to create consistency across land and marine geophysical operations.
- To help ensure compliance with operational policies, procedures and applicable regulations or guidelines on HSE and to analyse the existence and effectiveness of management controls.
- To provide guidance for the geophysical industry on how to implement audits which are consistent with the E&P Forum's existing *Guidelines for the Development and Application of HSE Management Systems*.
- To improve acceptability of audits across company boundaries.
- To help verify that the operating systems that the contractor has in place optimise the well-being of all personnel, clients, contractors, sub-contractors, communities and the environment, and that these systems are aligned across client, contractor and sub-contractor boundaries.
- To determine the compliance of an auditee's HSE management system against the audit criteria.
- To determine whether the auditee's HSE management system has been properly implemented and maintained.
- To identify areas of potential improvement in the auditee's HSE management system.
- To assess the ability of the internal management review process to assure the continuing suitability and effectiveness of the auditee's HSE management system.
- To evaluate the contracting system.

Expectations

Objectives

RELEASE OF AUDIT REPORTS

The ownership of an audit report is vested in the commissioner of the audit. The copyright of the audit is normally vested with the Lead Auditor or his employer. Upon consideration of the copyright, other arrangements can be made.

Where audits are owned by clients, it is recommended that audit reports relevant to an auditee (e.g. a land seismic crew or marine vessel) are released to the auditee. Client owners may remove client-specific information prior to this release. This principle extends to the situation where a contractor commissions an audit of a sub-contractor.

Clients should take due account of the available reports from previous audits and their follow-ups which have been released to them, in order to reduce their auditing requirements and to avoid unnecessary duplication of audits.

SCOPE

This HSE audit guideline is applicable to all geophysical operations world-wide. The scope of an audit will normally be determined by the commissioner of the audit in consultation with the Lead Auditor and the auditee, taking into account the requirements of potential clients and the nature of the operation. Any subsequent changes to the audit scope should be agreed between the commissioner and the Lead Auditor. The scope and any changes should be in writing.

The scope should state the audit criteria, standards, rules, regulations and work instructions or guidelines against which the audit findings will be assessed.

- The HSE management system (thus main sites)
- Land operations
- Marine and shallow-water operations
- Site survey operations
- Support facilities
- Sub-contractors.

Note that some operations will have peripheral units in different environments (e.g. a marine operation may have navigation base stations).

The content should be consistent with (but not necessarily limited to) the E&P Forum's existing *Guidelines for the Development and Application of HSE Management Systems*. The executive summary from this document is shown below.

HSE-MS Element	Addressing
Leadership and commitment	<i>Top-down commitment and company culture, essential to the success of the system.</i>
Policy and strategic objectives	<i>Corporate intentions, principles of action and aspirations with respect to health, safety and environment.</i>
Organisation, resources and documentation	<i>Organisation of people, resources and documentation for sound HSE performance.</i>
Evaluation and risk management	<i>Identification and evaluation of HSE risks, for activities, products and services, and development of risk reduction measures.</i>
Planning	<i>Planning the conduct of work activities, including planning for changes and emergency response.</i>
Implementation and monitoring	<i>Performance and monitoring of activities, and how corrective action is to be taken when necessary.</i>
Auditing and reviewing	<i>Periodic assessments of system performance, effectiveness and fundamental suitability.</i>

Scope of audit

Target locations, facilities and functions

Audit content

Thus a suggested list of topics to be covered by audits, and their applicability to management and/or operations, includes the following:

Content	Management	Operations
Organisation and Management		
Management/leadership commitment	✓	✓
Policy and strategic objectives	✓	✓
HSE objectives and performance criteria	✓	✓
Organisational structure and responsibilities	✓	✓
Management performance standards	✓	
Auditing and reviewing	✓	
Risk evaluation and management	✓	✓
Planning	✓	✓
Implementation and monitoring of HSE-MS	✓	✓
Management of change	✓	✓
Resource allocation	✓	✓
Risks and Hazards		
Identification and recording of hazards and effects	✓	✓
Evaluation of hazards and environmental effects	✓	✓
Risk reduction measures	✓	✓
Fire detection and control	✓	✓
Hazardous material transport, storage and handling	✓	✓
Preventive maintenance programmes	✓	✓
Investigation requirements and procedures	✓	✓
'Offsite' risk assessment	✓	✓
Contingency & emergency planning	✓	✓
Operations		
Asset integrity	✓	✓
Procedures and work instructions	✓	✓
Implementation of HSE-MS activities	✓	✓
Recording of the HSE-MS	✓	✓
Non-compliance and corrective action	✓	✓
Auditing and formal inspections	✓	✓
Work rules and practices	✓	✓
Personal protective equipment	✓	✓
Incident reporting	✓	✓
Incident follow-up	✓	✓

Content	Management	Operations
Metrics, statistics	✓	✓
Signs and information	✓	✓
Work environment and housekeeping	✓	✓
Occupational health and life preservation	✓	✓
Engineering		✓
Regulatory compliance	✓	✓
Substance abuse	✓	✓
Aviation	✓	✓
Waste disposal and pollution control	✓	✓
Spill/leak control/damage restoration	✓	✓
Data management	✓	✓
Documentation and its control	✓	✓
Food and water storage and preparation	✓	✓
Clients/contractors/sub-contractor interfaces	✓	✓
Personnel, training, communications		
HSE meetings with employees	✓	✓
HSE publicity	✓	✓
Public consultation	✓	✓
Training programmes	✓	✓
Communication	✓	✓
Competence	✓	✓

AUDIT SCHEDULING AND FREQUENCY

There are no definitive or prescriptive frequencies for audits laid down in this guideline. However, commissioners of audits should be able to justify the frequency of their audits.

Factors to be considered in deciding upon scheduling of audits include:

- avoidance of duplication or excessive audit, especially on vessels
- significant changes occurring within an operation, e.g. the start itself
- the requirements of legal or regulatory bodies
- type, size, complexity and region of operation
- HSE performance of the operation
- severity of risks and potential environmental effects of the operation
- company and contractor policies
- availability of information on prior audits and their follow-up.

ROLES, RESPONSIBILITIES AND COMPETENCIES

Commissioner of the Audit

Responsible for:

- setting and implementing the audit strategy
- defining the scope of the audit
- defining its terms of reference including audit criteria
- providing the necessary resources
- assuring the competence of the Lead Auditor
- defining a system for classification of audit findings
- ensuring that the follow-up process is completed satisfactorily by assisting the auditee where necessary.

The Auditee

Responsible for:

- cooperating with the auditors to permit the audit objectives to be achieved
- informing employees about the objectives and scope of the audit as necessary
- providing the facilities needed for the audit team in order to ensure an effective and efficient audit process
- appointing responsible and competent staff to accompany members of the audit team, to act as guides to the site and to ensure that auditors are aware of health, safety, environment, and other appropriate requirements
- providing access to the audited facilities including personnel and relevant evidential material, as requested by the auditors, and assisting them generally
- developing a corrective action plan that defines action steps and responsibilities for all those findings listed in the final audit report, that are accepted by the auditee; the timeliness and completion of corrective actions from previous audits should be reviewed during subsequent location reviews.

The Lead Auditor is responsible for ensuring the efficient and effective conduct and completion of the audit within the scope of the audit plan.

Lead Auditor

He or she should be independent of the specific facility being audited, but may be an employee of the parent company.

In addition, the Lead Auditor's responsibilities and activities should cover:

- consulting with the commissioner and auditee in finalising the scope, terms of reference and applicable standards of the audit
- obtaining relevant background information necessary to meet the objectives of the audit
- forming the audit team after having given consideration to representations of the auditee and other appropriate parties
- preparing the audit plan
- communicating the final audit plan to the audit team, auditee and the commissioner
- co-ordinating the preparation of working documents and detailed procedures and briefing the audit team
- directing the activities of the audit team
- seeking to resolve any problems that arise during the audit
- recognising when audit objectives appear to become unattainable and reporting the reasons to the commissioner and the auditee
- representing the audit team in discussions with the auditee prior to, during and after the audit
- notifying to the auditee of observations of critical non-conformities without delay
- reporting on the audit clearly and conclusively within the time agreed with the commissioner
- making clear and concise recommendations to the auditee for corrective actions, ensuring that these represent the fair opinion of the team
- maintaining the independence and objectivity of the team and the audit report
- providing language translation facilities, if necessary.

The auditors are responsible for:

- following the directions of and supporting the Lead Auditor
- planning and carrying out the assigned task objectively, effectively and efficiently within the scope of the audit
- collecting and analysing relevant and sufficient evidence to allow findings to be made and conclusions to be drawn regarding the auditee's system
- preparing working documents under the direction of the Lead Auditor
- documenting individual audit findings
- safeguarding documents pertaining to the audit and returning such documents as required
- assisting in writing the audit report.

Auditors

The Lead Auditor should have sufficient seniority and relevant experience to provide credibility and authoritative weight to the audit findings and recommendations. He or she should be trained and have experience in carrying out HSE audits. Such training may be provided by the auditor's own organisation, or by an external organisation.

Audit team competencies

The audit team should possess an appropriate combination of knowledge, skills, personal qualities and experience to carry out audit responsibilities.

To ensure the objectivity of the audit process and its findings or conclusion, the lead auditor should be independent of the activities to be audited. The audit team should be objective and free from bias and conflict of interest throughout the process, although the team may include representative(s) from the activity being audited.

The use of an external or internal Lead Auditor is at the discretion of the commissioner. A lead auditor chosen from within the organisation should not be accountable to those directly responsible for the subject matter being audited.

The team should collectively:

- understand the purpose of audits
- know the policies and principles being audited
- understand the output of audit and expectations
- possess a generic understanding of the facility or operation being audited.

Thus, in selecting the audit team members, consideration should be given to the following:

- the number of auditors in the team
- appropriate qualifications, experience and expertise
- the type of organisation, activity or function being audited
- the language skills of the auditors, and/or the availability of suitable interpreters for the full amount of time required
- any potential conflict of interest between the auditee and the auditors
- competence in clearly and fluently expressing concepts and ideas, orally and in writing
- interpersonal skills conducive to the effective and efficient performance of the audit, such as diplomacy, tact and the ability to listen
- skills of personal organisation necessary for the effective and efficient performance of the audit
- ability to analyse data and categorise results
- ability to reach sound judgements based on objective evidence.

AUDIT PROCESS

To conduct audits efficiently, certain information must be obtained and reviewed by the auditors prior to the audit, or made readily available for review during the audit. Typical information includes:

- organisation charts
- contractual documents
- HSE staffing—their qualifications and responsibilities
- current list of hazardous materials
- maps of the survey area, as appropriate
- copies of HSE policies and procedures
- regulatory permits, licenses and compliance inspection reports
- previous inspection/audit reports
- follow-up documentation to the above
- incident reports and follow-up
- training record and status
- relevant local regulations relating to geophysical activities
- environmental impact assessment
- hazard register

In addition, an audit announcement letter, with clear scope and objectives, should be sent to the location well in advance.

A pre-planning meeting may be necessary.

Each audit should commence with an opening meeting with location management, location HSE staff and the audit team to:

- reaffirm the scope and objectives
- reaffirm the agenda and audit plans
- obtain information on special topics to include or sensitive areas of which to be aware
- reaffirm the schedule for the closing meeting.

The audit will be directed by the Lead Auditor, and will focus on management systems and compliance. Typical audit activities include:

- location walk-through; inspection of equipment and activities covered by the scope of the audit
- document/records review
- reviewing location HSE performance statistics (injuries, illnesses, incidents, etc.)
- reviewing the location's HSE inspection and auditing programme
- reviewing the environmental impact assessment
- reviewing policies, procedures and required records
- interviewing management, quality control and technical staff
- interviewing HSE staff and area personnel
- assessing implementation of training plans
- documenting and categorising findings each day
- analysing findings and preparing list of key findings and recommendations or draft report for use at the final meeting.

Each audit should end with a closing meeting involving the audit team, location management and location HSE staff to:

- review the audit findings and recommendations
- confirm, following consultation with the commissioner, a schedule and distribution for the audit report and location response to findings and recommendations.

Pre-audit information and planning

Onsite activities

Post-audit activities

Audit reports

The Lead Auditor is responsible for timely completion and issuance of the audit reports to the commissioner, who is responsible for its distribution to the appropriate people. Typical report contents include:

- introduction—location, business, dates, audit leader, team members and their titles, scope and objectives of the audit
- executive summary
- general observations
- positive findings
- deficiencies
- reference to regulations, policies, guides, etc.
- recommended actions.

Follow-up and closure of action

Corrective action plans and status reports are the responsibility of the auditee until all action items are closed out. The progress of the actions and reports will normally be followed up by the commissioner.

REFERENCE DOCUMENTS

IAGC. *Land Geophysical Operations Safety Manual*, 1991

IAGC. *Marine Geophysical Operations Safety Manual*, 1991

IAGC. *Environmental Guidelines for World-wide Geophysical Operations*, 1994

E&P Forum/IUCN. *Oil and Gas Exploration and Production Operations in Mangrove Areas—Guidelines for Environmental Protection*, Report No. 2.54/184, 1993

E&P Forum/IUCN. *Oil and Gas Exploration and Production in Arctic and Subarctic Onshore Regions—Guidelines for Environmental Protection*, Report No. 2.55/185, 1993

E&P Forum. *Oil Industry Operating Guideline for Tropical Rainforests*, Report No. 2.49/170, 1991

E&P Forum. *Exploration & Production Waste Management Guidelines*, Report No. 2.58/196, 1993

E&P Forum. *Health Management Guidelines for Remote Land-Based Geophysical Operations*, Report No. 6.30/190, 1993

E&P Forum. *Standards for Local Medical Support*, Report No. 6.44/222, 1995

E&P Forum. *Health Assessment of Fitness*, Report No. 6.46/228, 1995

E&P Forum. *Health, Safety and Environmental Schedules for Marine Geophysical Operations*, Report No. 6.34/206, 1994

E&P Forum. *Health, Safety and Environmental Schedules for Land Geophysical Operations*, Report No. 6.35/207, 1995

E&P Forum. *HSE Training Guidelines for Seismic Personnel*, Report No. 6.27/183, 1993

E&P Forum. *Checklist for an Audit of Safety Management*. Report No. 6.15/160, 1989

E&P Forum. *Safety Auditing: Strategy and Uses for the E&P Industry*, Report No. 6.13/149, 1989

E&P Forum. *Guidelines for the Development and Application of Health, Safety and Environmental Management Systems*, Report No. 6.36/210, 1994

IAGC/E&P Forum. *Generic Hazards Register for Geophysical Operations*. Report No. 6.40/214, 1994 (revised January 1996)

Individual company and contractor manuals.

IAGC/E&P Forum. *Glossary of HSE Terms*, Report No. 6.52/244, 1996