

**THE INTERNAL AUDIT OF THE HEALTH AND SAFETY MANAGEMENT SYSTEM  
(ISO 45001: 2018) IN THE DEPARTMENT OF STUDIES, PLANNING AND FOLLOW-  
UP - IRAQI MINISTRY OF OIL**

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**ABSTRACT**

The study aims to audit health and safety management systems (ISO 45001: 2018) based on audit guidelines in the standard (ISO 19011: 2018). The study was conducted in the Department of Studies, Planning and Follow-up / Ministry of Oil of Iraq, as it suffers from weak internal audit procedures on the occupational health and safety management system. To reach the scientific results, the case study method was adopted, which included direct observation, field visits and personal interviews. The checklist was approved in the study, which was designed in accordance with the requirements of the standard (ISO 45001: 2018). The results of the study revealed the presence of (3) major non-conformities and (22) minor non-conformities and the diagnosis of weaknesses, which are considered as inputs to opportunities for improvement. The study presented a set of treatments to the Department of Studies, Planning and Follow-up / the Iraqi Ministry of Oil, the most important of which is the training of cadres working on the occupational health and safety management system.

**Keyword:** Audit, the health and safety management, ISO 45001: 2018, ISO 19011: 2018.

**1. INTRODUCTION**

Employers have a responsibility to ensure the health and safety of workers in the workplace. Yet work accidents continue despite organizations applying occupational health and safety standards (ISO 45001:2018). Safety is a team effort as a single worker acting irresponsibly can not only harm himself but others as well. Employees should understand their role in creating a safe and healthy work environment and always take this responsibility seriously, as safety is always the top priority. Jones ( 2017) indicated in a study conducted by the Institution of Occupational Safety and Health (IOSH) that creating a good work environment is through the participation of all employees. The results also revealed that there is a positive relationship between senior management and improving occupational health and safety. The results of the study of (Darabont et al., 2017) that was conducted in a group of Romanian companies indicated that the Romanian companies have a good management system in health and safety as they apply the OHSAS 18001 system. They also indicated that the expected version of ISO 45001 represents a good approach because Refers to the key elements for the successful implementation of an occupational health and safety management system. While (Neag et al., 2020) indicated in a study conducted in a group of different organizations located in the western region of Romania

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that ISO 45001 is a good system and all organizations need training programs on occupational health and safety according to ISO 45001.

In order to ensure the implementation of an effective occupational health and safety management system, organizations conduct audits. Auditing is a vital part of the management system approach and auditors in their day-to-day work help employees to clearly understand the elements of the management system and more auditors lead to better knowledge sharing and understanding of the management system in the organization. Auditing can be used to ensure that processes in the organization are established and monitored to deliver contractual value to the customer (Fahlén & Langell, 2014). Audit is also understood as the ability of auditors to detect and report errors in the presentation and publication of audit reports of the auditing organization. Audit quality reflects the degree to which audit objectives are implemented and the level of compliance with laws and standards. As (Hassan et al., 2019) indicated in a study conducted in (3) member companies of the Federation of Malaysian Industries that there are differences in the implementation of the internal audit process between different companies, but companies face the same difficulties and obstacles that accompany the audit process.

The problem of the study stemmed from the weakness of the internal audit procedures on the occupational health and safety management system in the Studies and Planning Department / the Iraqi Ministry of Oil, which led to the creation of a set of gaps in the application of the requirements for the application of the health and safety management system (ISO 45001: 2018). The study is the first in the field of health and safety management system audit in the Iraqi energy and oil field.

## **2. INTERNAL AUDIT**

In 1900, the internal audit was a re-performance of some accounting operations to improve the management of middle-level accounting. The audit is a guarantee on all operational processes, not just the accounting ones (Chambers & Odar, 2015). Management systems focus on quality audits of standards such as (ISO 9000). Auditing is one of the tools for improving quality, productivity and profit common for decades. During the 1950s, the North Atlantic Treaty Organization (NATO) standardized the STANAG 4107 agreement, which gave the possibility to assess the efficiency of supplier organizations in the manufacturing country through the National Quality Assurance Authority on behalf of the purchasing country. Private sector companies initially implemented standards-based quality control systems with a view to contracting with or maintaining government agencies (Taggart, 2013). In 1984, work began on issuing a standard specialized in the field of auditing the quality management system by the (ISO) organization, and then issued a standard between the years (1990) and (1991) in three parts called (ISO 10011 Guidelines for auditing systems Quality) referred to the performance of audits on quality systems as a reference in preparing, implementing, maintaining and improving audits on quality systems (Nazmy & El-Azab, 2012). In (2002) the standard (ISO 19011) was issued to replace the three parts of the standard (ISO 10011:1991), which provided guidelines for auditing quality management systems, environment and occupational health and safety. The standard (ISO 10011) focused on the importance of audit as it is one of the management tools for monitoring,

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measuring and verifying the effective implementation of the policy of quality, environment and occupational health and safety in organizations. In (2011) the (ISO) organization made amendments and updating the (ISO 10011) standard so that the (ISO) issued a new version that includes guidance on managing audit programs and implementing internal and external auditing processes on quality management systems, environment, occupational health and safety, as well as providing Guidelines on the Efficiency and competence of auditors (Simon et al., 2014) (Bernardo, 2011). In (2016) the ISO and through the Technical Committee (ISO/TMBG) (Technical Management Board - Groups) worked on developing the standard (ISO 19011) and in July of the year (2018) the standard was issued (ISO 19011: 2018). (ISO

19011: 2018) has become a guideline for audit management systems, in addition to containing audit principles, how to manage the audit program and conduct management system audits, as well as guidelines on evaluating the efficiency of individuals participating in the audit process ([iso.org/standard/70017.html](http://iso.org/standard/70017.html)).

Hernandez (2010) defines auditing as a proactive process to determine whether the procedures that the organization has documented have been effective. Whereas (Johnstone et al., 2014) indicated that an audit is a systematic process of objectively obtaining and evaluating evidence regarding organizational actions and events to ensure their degree of conformity with established standards and communicating the results to interested users. Simon & Bernardo (2015) indicated that auditing is a systematic examination to determine whether related activities and results are consistent with planned arrangements and whether these arrangements are effectively implemented and appropriate to achieve the organization's policy and objectives. The standard (ISO 19011: 2018) indicated that auditing is a systematic, independent, and documented process of obtaining audit evidence and evaluating it objectively to determine the extent to which it meets the auditing standards. Accordingly, we can say that the audit is an independent examination process that is conducted in a planned and detailed manner to evaluate the effectiveness of the management system, as the audits are carried out in an objective, systematic and documented manner, the aim of which is for the auditor to reduce as much as possible the element of subjectivity or confusion between facts and opinions, by adopting methodological methods.

### **3. TYPES AND PRINCIPLES OF AUDIT**

All types of audit aim to prove the organization's documented policies, processes and procedures when implemented are appropriate for their purpose and meet the needs of those who need them (Tricker, 2016). Divide the audit by categories into three types:

- 1st party audit: First-party audits of an organization as a whole or parts of an organization are carried out by employees working in it. It is often called internal audit.
- 2nd party audit: Second-party audits are carried out by customers or suppliers, and it is often called External provider audit or Other external interested party audit
- 3rd party audit: Third-party audits are performed by people who work for a certification body or registrar such as BSI, TÜV, or Yardley who are not a customer or supplier of the audited organization. It is often called a certification and/or accreditation audit and/or statutory, regulatory and similar audit.

All types of auditing have principles aimed at making auditing good. It is necessary to rely on the principles stipulated in the standard, namely (ISO 19011:2018):

- Integrity.
- Fair presentation: (obligation to report honestly and accurately).
- Due professional care (applying diligence and judgment in auditing).
- Confidentiality (Information Security)
- Independence (the basis for the impartiality of the audit and the objectivity of the audit conclusions)
- Evidence-based approach (the logical way to reach reliable and repeatable audit conclusions in a systematic audit process).

#### **4. FACTORS AFFECTING THE AUDIT**

There are several factors affecting the quality of auditing, and those affecting factors are summarized as follows:

- Audit objectives: The purpose and objective of the audit determined by the organization is the basis for the formation of audits (Fahlén & Langell, 2014).
- Audit processes: It is important to plan the audit process because it gives an understanding of audit activities and how to reveal improvements and non-conformities during the audit. The audit process consists of four steps: planning and preparation, implementation, reporting and completion (Fahlén & Langell, 2014).
- Auditor performance: The auditor's performance affects the results of the audit and the extent to which the audited organization is aware of the audit process (Hosseinniakani et al., 2014).
- Leadership Commitment: Leadership or Top management are the final decision makers about the amount of investment in audits and their results (Lemon & Tatum, 2003).
- Measuring audit effect: the extent to which audit results affect the improvement and development of the performance of the audited organization (Octavia & Widodo, 2015).
- Independence: The decline in audit quality is due to the reduced independence of the auditor. The greater the auditor's independence, the better the audit quality (Amalia et al., 2019).
- Audit costs: Higher audit fees may result in greater audit quality. The high audit costs lead to an increase in audit efforts and this may require the use of higher qualified auditors (James & Izien, 2014).
- Duration of the audit: The tight audit time makes the auditor unable to maintain his independence and this will of course lead to lower audit quality (Ghafran & O'Sullivan, 2017).
- Legal responsibility: by complying with laws and regulations as well as professional laws and auditing standards. The more stringent the responsibility, the greater the incentive for the auditor to work more carefully. Therefore, audit quality is positively affected by strict accountability standards (Aynadis, 2020).
- Customer Experience, Industry and Audit: The experience of the auditor plays an important role in improving audit quality. If the auditor's specialization is similar to the field of work of the organization being audited, this will inevitably lead to an improvement in the quality of the audit (Lemon & Tatum, 2003).

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Audit methodology and tools: The advanced software helps in communicating with the audited organization in addition to facilitating communication between members of the audit team as it facilitates the process of exchanging information within the entire audit team and the audited organization (Kuceja, 2017).

## **5. HEALTH AND SAFETY MANAGEMENT**

Health and safety management is an integral part of business risk management. An audit is an essential component to help ensure the effectiveness and continuous improvement of the health and safety management system. Audit processes should be useful as it is opportunities for organizations to learn and for auditors to share good practices. The standard (ISO 45001: 2018) is a guide for the application of health and safety management system in organizations. The health and safety management system helps employers and auditors to better understand their roles and contributes to organizing a good audit process by an auditor or a competent audit team. An audit is more than just looking at the organization's health and safety management KPIs because it is a comprehensive review and analysis of its management system (Asbury, 2018). The study of (Repolho & Coelho, 2020) conducted in a ceramic sector company in the Brazilian state of Amazonas indicated that the application of occupational health and safety audit in the organization leads to a set of results, including:

- Analyze the activities that have been developed within the organization in a systematic way.
- Revelation of risk factors in different sectors.
- Identify regulatory rules that stand out both positively and negatively.
- Checking whether they agree with what has been established and assessing whether the established criteria are met or not.

It is essential for organizations to bear in mind that audits are an important component of an occupational health and safety system. The improvement of audit processes is part of improving their safety system (Ostasz et al., 2017). Auditing is affected by the type of behavior it targets, so it is better to follow an effective audit approach in the occupational health and safety system (Cashman, 2019). Although the performance of health and safety in some organizations is at a high level, there are some weaknesses and threats that affect the efficiency of the health and safety management system. As it turns out that health and safety performance indicators are not sufficient to evaluate the effectiveness of the system, this shows the importance of the audit method to evaluate the effectiveness of the occupational health and safety management system. The audit is a useful tool to improve the level of compliance of the occupational health and safety management system with the requirements of OHSAS 18001 (Hosny et al., 2017).

It is important not to believe that audit is an activity to discover errors, but rather an approach and method that contributes to improving the health and safety management system. Organizations should be aware that an audit is a review of activities and processes performed in the past as well as a detection of areas for improvement. The audit is a tool for examining the administrative procedures that the organization should have in occupational health and safety in order to ensure effective planning, regulation and control of health risks management (Shelmerdine & Williams, 2003). To implement a good health and safety management audit, this

calls for developing a methodology that considers health and safety risks (Jespersen & Hasle, 2017). A health and safety audit is traditionally conducted by an external team that examines all safety activities and procedures in the organization. The audit then assesses the current level of risk reduction and loss prevention and then assists in preparing an action plan to improve health and safety inputs. An occupational health and safety audit is a critical examination of all or part of a health and safety management system. An audit is a management tool that measures the overall operational effectiveness of a health and safety management (McKinnon, 2020). According to the Royal Society for the Prevention of Accidents, safety audits are an essential part of successful business. The effective audit of the health and safety system provides the legal framework for compliance with approved standards as well as an approach to continuous improvement of safety (Rospa, 2013).

## 6. METHODOLOGY

The audit processes were conducted according to the international standard (ISO1901:2018) for auditing guidelines. An audit was conducted on the Health and Safety Management System (the steps shown in Table (1))

**Table (1) Steps for applying internal audits**

Stages	Step Title	Entity responsible for implementation
The first stage (The first ISO45001:2018) in the Studies, Planning and Follow-up Department / Iraqi Ministry of Oil through stage	Audit team formation	Department of Studies, Planning and Follow-up
The second stage	Audit Plan	audit team
The third stage	Audit Report	audit team

### **The first stage ( Audit team formation)**

The Department of Studies and Planning in the Iraqi Ministry of Oil suffers from a weakness in conducting the audit process on its approved health and safety management system. Therefore, the Department of Studies and Planning in the Iraqi Oil Ministry submitted a request to the authors to conduct the audit. It was agreed that the type of audit is internal audit.

### **The second stage / Audit Plan**

Table (2) indicates the audit plan followed by the auditors for the purpose of auditing the occupational health and safety management system in the Studies and Planning Department of the Iraqi Ministry of Oil in accordance with the requirements of the international standard (ISO 45001: 2018).

**Table (2) Audit Plan**

<b>Entity submissive to audit</b>	Department of Studies, Planning and Follow-up / Iraqi Ministry of Oil
<b>Audit Type</b>	Internal Audit
<b>Audit Date</b>	7 July 2021
<b>Standard</b>	(ISO 45001: 2018) Occupational health and safety management systems- Requirements with guidance for use
<b>The field of work of the Department of Studies, Planning and Follow-up / Iraqi Ministry of Oil</b>	<ul style="list-style-type: none"> <li>✓ Prepare strategies.</li> <li>✓ Preparing technical, economic and environmental studies and projects and referring them for investment</li> <li>✓ Follow up on the implementation stages of projects until their completion by the executing companies.</li> <li>✓ Follow-up environmental, health and safety programs and work to provide a clean environment free of pollution resulting from oil operations and their requirements.</li> </ul>
<b>Coordinator</b>	Quality management manager
<b>Audit team</b>	Authors
<b>Audit objectives</b>	<ul style="list-style-type: none"> <li>✓ Ensure that the management system complies with all requirements of the audit standard(s).</li> <li>✓ Ensure that the department has effectively implemented what was planned.</li> <li>✓ Ensure that the management system is able to achieve the organization's policies and objectives and evaluate the ability</li> </ul>
	<ul style="list-style-type: none"> <li>of the management system to achieve applicable legal, regulatory and contractual requirements.</li> <li>✓ Identify potential areas for improvement of the management system, if applicable.</li> </ul>
<b>Conducting opening meeting</b>	The opening meeting includes (the audit team, management representative, and senior management) for the purpose of reviewing the quality management system document, and checking the scope
<b>Requirements to be checked according to the clauses of ISO</b>	<p>4. Context of the organization</p> <p>4.1. Understanding the organization and its context</p> <p>4.2. Understanding the needs and expectations of workers</p>

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2018**

and  
other interested parties  
4.3. Determining the scope of the OH&S management system  
4.4. OH&S management system  
5. Leadership and worker participation  
5.1. Leadership and commitment  
5.2. OH&S policy  
5.3. Organizational roles, responsibilities and authorities  
5.4. Consultation and participation of workers  
6. Planning  
6.1. Actions to address risks and opportunities  
6.1.1. General  
6.1.2. Hazard identification and assessment of risks and opportunities  
6.1.2.1. Hazard identification  
6.1.2.2. Assessment of OH&S risks and other risks to the OH&S management system  
6.1.2.3. Assessment of OH&S opportunities and other opportunities to the OH&S management system  
6.1.3. Determination of legal requirements and other requirements  
6.1.4. Planning action  
6.2. OH&S objectives and planning to achieve them  
6.2.1. OH&S objectives  
6.2.2. Planning to achieve OH&S objectives  
7. Support  
7.1. Resources  
7.2. Competence  
7.3. Awareness  
7.4. Communication  
7.4.1. General  
7.4.2. Internal communication  
7.4.3. External communication  
7.5. Documented information  
7.5.1. General  
7.5.2. Creating and updating  
7.5.3. Control of documented information  
8. Operation  
8.1. Operational planning and control  
8.1.1. General  
8.1.2. Eliminating hazards and reducing OH&S risks



	8.1.3. Management of change 8.1.4. Procurement 8.1.4.1. General 8.1.4.2. Contractors
	8.1.4.3. Outsourcing 8.2. Emergency preparedness and response 9. Performance evaluation Monitoring, measurement, analysis and performance evaluation General Evaluation of compliance Internal audit General Internal audit programme Management review 10. Improvement General Incident, nonconformity and corrective action Continual improvement
Conducting closing meeting	The audit team leader presents audit findings to management

**The third stage / Audit Report**

Managers of administrative units and some employees of the Studies, Planning and Follow-up Department in the Iraqi Ministry of Oil were interviewed as they are responsible for implementing the health and safety management system, including (the executive director and his assistants - director of the HSE department - contracts official - engineers). The audit team conducted an audit of the procedures and activities of the health and safety management system with a focus on risks and objectives. The audit method was based on personal interviews, observations of activities, and review of documents and records. The audits started with an inaugural meeting in the Studies, Planning and Follow-up Department. While the audit results were reported to the Studies and Planning Department during the final meeting. In Table (3) indicates the audit report.

**Table (3) : The audit report**

<b>Entity submissive to audit</b>	Department of Studies, Planning and Follow-up / Iraqi Ministry of Oil		
<b>Address</b>	Iraq, Baghdad, Pursaead street, Elmujaamea Alnaftie.		
<b>Audit standard</b>	ISO 45001: 2018		
<b>Audit Type</b>	Internal Audit		
<b>Audit Start Date</b>	7 July 2021	<b>Expiry Date</b>	27 July 2021
<b>Audit team</b>	Authors		

<b>Summary of audit findings</b>	Major non-conformance	3
	Minor non-conformity	22

Table (4) indicates that there is no documented guideline for a system that defines the requirements of standards. No procedures manual or organizational chart for the interaction of operations has been established, and the department of Studies, Planning and Follow-up / Iraqi Ministry of Oil has a safety manual for employees and visitors. The context was also not specified, which made it difficult to determine the needs of the interested parties. The internal and external issues were not identified. The results revealed that there is great interest in the senior management in applying the occupational health and safety management system in accordance with the standard (ISO 45001:2018) in order to preserve the health and safety of workers and meet the requirements of the Ministry of Oil and keep pace with the international organizations that have obtained the certificate. The Department of Studies and Planning/Ministry of Oil has previously specified the scope of application of the occupational health and safety management system through the published safety policy, but it did not take into account the internal and external issues related to the occupational health and safety management system and did not specify the requirements of the concerned parties when determining the scope of the occupational health and safety management system. The Ministry did not take into account the activities related to the planned or executed work.

**Table (4): Audit Report Results**

Requirements according to the standard (ISO45001:2018)	Conformity	Non-Conformity		Improvement
		Major	Minor	
4.1.Understanding the organization and its context		√		
4.2. Understanding the needs and expectations of workers and other interested parties		√		
4.3. Determining the scope of the OH&S management system			√	
4.4. OH&S management system			√	
5.1.Leadership and commitment			√	
5.2. OH&S policy			√	
5.3. Organizational roles, responsibilities and authorities				√
5.4. Consultation and participation of workers			√	
6.1. Actions to address risks and opportunities				√
6.1.1. General				√
6.1.2. Hazard identification and assessment of risks and opportunities				√

6.1.2.1. Hazard identification				√
6.1.2.2. Assessment of OH&S risks and other risks to the OH&S management system				√
6.1.2.3. Assessment of OH&S opportunities and other opportunities to the OH&S management system				√
6.1.3. Determination of legal requirements and other requirements				√
6.1.4. Planning action				√
6.2. OH&S objectives and planning to achieve them			√	
6.2.1. OH&S objectives			√	
6.2.2. Planning to achieve OH&S objectives				√
7.1. Resources				√
7.2. Competence				√
7.3. Awareness				√
7.4. Communication			<input type="checkbox"/>	
7.4.1. General				√
7.4.2. Internal communication				√
7.4.3. External communication			<input type="checkbox"/>	
7.5. Documented information				√
7.5.1. General				√
7.5.2. Creating and updating				√
7.5.3. Control of documented information				√
8.1. Operational planning and control			<input type="checkbox"/>	
8.1.1. General			<input type="checkbox"/>	
8.1.2. Eliminating hazards and reducing OH&S risks				√
8.1.3. Management of change			<input type="checkbox"/>	
8.1.4. Procurement			<input type="checkbox"/>	
8.1.4.1. General			<input type="checkbox"/>	
8.1.4.2. Contractors			<input type="checkbox"/>	
8.1.4.3. Outsourcing			<input type="checkbox"/>	
8.2. Emergency preparedness and response				√
9.1. Monitoring, measurement, analysis and performance evaluation				√

9.1.1. General				√
9.1.2. Evaluation of compliance			<input type="checkbox"/>	
9.2. Internal audit			<input type="checkbox"/>	
9.2.1. General			<input type="checkbox"/>	
9.2.2. Internal audit programme			<input type="checkbox"/>	
9.3. Management review		<input type="checkbox"/>		
10.1. General			<input type="checkbox"/>	
10.2. Incident, nonconformity and corrective action			<input type="checkbox"/>	
10.3. Continual improvement				√

**7. CONCLUSION**

Through field visits to the Department of Studies and Planning / the Iraqi Ministry of Oil, it was found that there is a partial application of the requirements of the standard (OHSAS 18001: 2007) due to the incompleteness of the scope of the health and safety management system correctly. Studies, Planning and Follow-up Department / The Iraqi Ministry of Oil was not committed and responsible for preventing work injuries and health effects, as well as neglecting to provide safe and healthy workplaces and activities. No goals have been set for the health and safety system in line with its strategy. The Department of Studies and Planning / the Iraqi Ministry of Oil has formed a specialized committee in the field of health and safety. This committee works to follow up on complaints and suggestions submitted by workers by addressing complaints and working to implement the proposals that contribute to improving the health and safety management system. Also, the Department of Studies and Planning / the

Iraqi Ministry of Oil lacks human resources with expertise and high efficiency in the field of occupational health and safety management, which negatively affected the training and awareness programs. In addition, the department has not developed future plans for awareness and training in this field. Therefore, the study recommends the necessity of applying all the requirements of the standard (ISO 45001: 2018) as it is the best and comprehensive guide for the application of the health and safety management system in organizations. The Department of Studies, Planning and Follow-up should pay attention to training programs due to its importance in enhancing the performance of its employees. As well as addressing the high gaps that have been identified in some health and safety management standards in order to reach an effective system in the field of occupational health and safety.

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