

## **Integrated Management System Audit (ISO 19011:2018) under the guidance standard: A case study of the Iraqi Drilling Company/Baghdad**

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### **Abstract**

The study was based on the problem of the poor understanding and application of the requirements of the integrated management system of the company, as well as the weak performance of audits. The study was also conceived in response to the fact that there were few studies and research papers on the subject of the integrated management system audit. The study adopted a case study method, which consisted of observations, interviews, fieldwork, and the use of verification checklists. The study community and the sample were composed of some of the divisions of the company. Moreover, certain methods were adopted to treat the data quantitatively and interpret the results in light of the results of the verification lists using equations to obtain the percentage of the extent of conformity.

The objective of the study was to determine the status of the implementation of the integrated management system by systematically validating it in a sound manner according to the standard guidelines (ISO 19011:2018).

The results of the study revealed a gap between the actual company situation and the requirements of the integrated management system of the company, as well as those of international standards (ISO9001:2015,ISO14001:2015,ISO45001:2018). The operational item ranked first in the size of the gap.

We recommend strengthening the company work related to determining the requirements and expectations of the parties dealing with it and internal and external issues. This is in order to contribute to developing and planning the integrated management system of the company effectively.

**Keywords:** Auditing, ISO 19011:2018, Integrated Management System.

### **1. Introduction**

Many organizations have introduced new management systems to improve their management. One of these systems is the Integrated Management System (IMS) as a prerequisite (**Dewi,2020**), which has a significant impact on meeting customer's requirements, improving the organization state of affairs and its importance in internal organization, and raising its reputation and status externally. It is one of the necessary tools to ensure a good image of the activities of the company (**Kauppila et al.,2015**), which leads to increased revenues, reduced costs and improved performance. This contributes to expanding its markets, reducing the time needed to achieve competitive excellence, as well as ensuring a modern, controlled and continuously improved management system (**Bernardo et al.,2017**). Organizations not implementing the Integrated Management System face the risk of relinquishing important decisions in the labor market (**Domingues et al.,2016**). In order to ensure the effective and efficient implementation of the system policy and plans on the one hand, and to provide opportunities for improvement on the other (**Jespersen et al., 2016**). The need arose to scrutinize the management systems, whereby the organization senior management is able to maintain the system in place. In order to guide organizations of all types, sizes and fields to the proper methods of auditing (**Volkova et al.,2017**), ISO has issued a guidance manual, the Audit Management System Specification (ISO19011:2018), to carry out audits of any administrative system applied in the organizations. After conducting the initial field survey, and direct observation of the investigated company from participation with the audit team, it was found that the justifications that prompted the researchers to determine the place of application, and choose this topic, are the poor understanding of the requirements of the integrated management system and its application in the company correctly on the one hand, and the poor conducting audits on

the other, as well as the lack of studies and research that dealt with the topic of auditing the integrated management system.

The current study aims at capturing the state of affairs of the application of the Integrated Management System Audit IT in a systematic manner, and to measure the gap between state of affairs and the actual system compared to the requirements of the integrated management system in the company and the requirements of international standards and specifications and the three (ISO9001:2015) (ISO14001:2015) و ISO45001:2018)). It also aims at identifying its strengths and weaknesses, and provide opportunities for improvement that should be taken into account by the company as they indicate the presence of areas to improve performance.

The importance of the study can be summarized by its contributing to the informatizing the proper measurement and audit of management systems and highlighting the integrated management system given its limited Arab and local coverage and its detailed delivery. The study also contributes to assisting company management in clarifying the positive aspects of the application of the Standard Guidance (ISO19011:2018) when auditing the system, and the provision of guidance on which to base the achievement of the objectives of the integrated management system.

The current study faced difficulties, in particular, the lack of studies on the integrated management system and Arabic studies, as well as the long period of time spent fieldworking in the company, which lasted four months. This involved getting to know the procedures of the integrated management system, the reports and the relevant documents of the company, and examining them in order to understand the state of affairs of the application of the system, investigate the facts and details related to the audit of the integrated management system, and to benefit from them in the establishment of the audit plan. Another hurdle on the way of conducting this study was the postponement on the part of the company which the researchers faced when implementing the application in addition to the change in the date of the implementation of the audit. The rationale behind choosing this topic is that it is an extension of what was addressed at the bachelor's and master's levels, and it is part of the researcher's specialization. It can be ascribed to the lack of studies, as far as the researchers who dealt with this subject is concerned, especially those written in Arabic. Moreover, the organizations modern orientation towards the application of the integrated management system for quality, environment, health and occupational safety, and the lack of Iraqi organizations applying this system can also be considered as a reason behind conceiving this study. Based on the foregoing, the research structure consisted of the theoretical and methodological aspect, the results of the discussion, and conclusions.

## **2. The theoretical aspect**

### ***2.1 Origin of the ISO 19011:2018 guidance standard***

The International Organization for Standardization (ISO) is the world's largest non-profit organization working on the development and dissemination of international management system specifications on several different topics (Nassor, 2015). It is an independent organization composed of 161 national specification bodies, and is the largest developer of international standards in the world. Headquartered in Geneva, Switzerland, the organization develops specifications only without certification. It officially started its work in February 1947 (Röyttä, 2016), with the aim of designing and presenting international specifications from various technical committees for business, government and various industries (Neyestani & Juanzon, 2017). 19011 ISO was first introduced in 2002 by the World Organization for Standardization providing guidance on the principles of auditing and management of audit programs, quality management system audits and environmental management system audits. Moreover, it provides guidance on the efficiency of quality and environmental management system auditors. This applies to all organizations requiring internal or external quality audits of environmental management systems or to the management of the audit program (ISO) 2002:19011.

This release provides guidance on audit management systems, including the principles of audit, audit program management and procedures for management system audits. It also provides guidance on evaluating the competence of individuals involved in the audit process, including the person who manages the audit program process, auditors and audit teams. It applies to all organizations that need to conduct internal or external audits of management systems (ISO, 2011).

In 2018, ISO 19011:2018, Release 3 of this specification was published, providing guidance on audit management systems, including audit program management principles and audit program management, and conducting management system audits, as well as guidance on assessing the efficiency of individuals participating in the audit process. These activities include individuals managing the audit program, auditors and audit teams, and are applicable to all organizations requiring internal or external audits of management systems or program management.

This specification can be applied to the efficiency of audits, provided that the specific audit requirements are met by the manager, who is interested in the efficiency of the specific audit specification requirements (**Chiarini et al., 2021**).

## 2.2 Audit

The audit is defined as a systematic, independent and documented process for obtaining objective evidence and evaluating it objectively to determine the compliance with the audit standard (ISO, 2018) and (ISO, 2015). As explained by (**Ugarak et al.,2015**), these features and conceptual elements of the audit that the methodology means that there is a fixed methodology for conducting the audit. Independence refers to the impartiality of auditors and it should be established that there is no conflict of interest during the audit, which means that internal auditors cannot audit their activities of assessment means assessing the actual situation, checking the number of indicators, data and facts, Therefore, an audit is used to collect information for an organization, department, process, product or management systems. Then, these data and facts can be used as an audit guide to check whether it meets the Audit Standard and operates within the requirements specified in the standard specifications, and determine the size of the gap (**Neuhold, 2008**). Then, audits are performed periodically at specified time intervals. It should be established that the organization has a clear description of the application of the internal regulations, and workflow monitoring system in order to take effective actions. This can help the auditor to check whether the organization can proceed with the specified quality system processes or not (**Panchal, 2020**). The auditor draws conclusions on management systems based on the results of the audit, and the level of conformity with the requirements of management systems in accordance with the applicable (**Abuazza et al.,2019**).

## 2.3. Integrated management system

### 1) Management system

Organizations adopt and operate a number of different management systems. All types of systems in organizations are complex in concept and practice, and each combines different subsystems to deal with the multiple aspects of trade, social and environmental issues (**Bhutto, 2004**).

(**Zgodavova & Bober, 2012**) refer to the similarity between management systems in structure and content and common elements. These range from aspects such as policy, roles, responsibilities, authorities, planning, objectives, and resources, communications to documentation and operation. They also include emergency preparedness, response, performance evaluation, internal audit, management review, control and measurement, corrective and preventive actions. There was a trend towards the establishment and implementation of an integrated system (IMS) to cover ISO 9001:2015 and ISO 14001:2015 and ISO 45001:2015. The methodology of this system is based on the integration of ISO specifications, because most of their requirements are similar, and can be practically accommodated under one management system. This results in reducing duplication by combining two or more systems in this way, and the ability to significantly reduce the total size of the management system, and improve the efficiency and effectiveness of the system. Figure (1) below shows the interconnection of the specifications and their configuration of the integrated management system as indicated (**Muzaimi et al., 2017**).

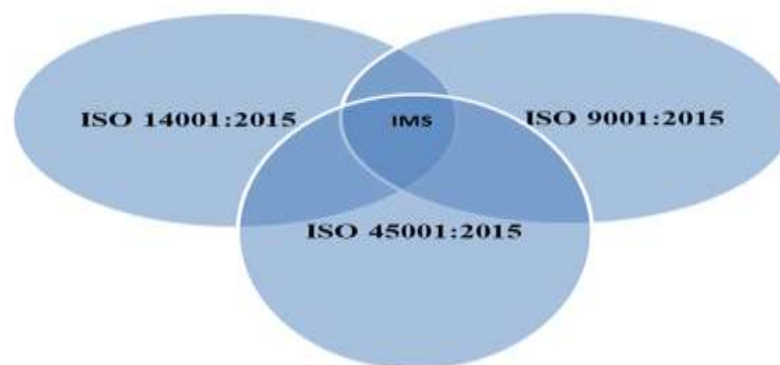


Figure (1): Correlation of standards and composition of an integrated management system. Source: (**Muzaimi et al.,2017**).

### 2) The concept of an integrated management system

Organizations have shown great interest in integrating quality, environment, health and safety management systems (Bhutto, 2004). The rationale behind this is to implement the separate procedures of the different systems as one coherent system and to make possible the achievement of its purpose and mission (Rasmussen, 2007). This system consists of a set of processes that share information about human, financial and infrastructure resources in order to achieve predetermined goals. These include reducing risks, improving internal and external efficiency, reducing costs, and duplicating policies and procedures and creating cooperation among employees to control documents, improve resources, and increase the effectiveness and efficiency of the management system, with a focus on the requirements of all concerned parties. This is one of the main requirements to ensure the survival and effectiveness of the organization, and reduce its costs, and then achieve a framework in line with its policies and strategies (Benyettou & Abdellatif, 2018). (OLARU et al., 2014) indicated that the integrated management system is a single structure that the organization uses to manage its operations, or activities that transform resource inputs into a product or service that meets the goals of the organization. Thus, the idea of the integrated management system concept is that the organization can manage its operations and the risks associated with them against the requirements of all internal and external stakeholders. This is achieved through a unified management system, rather than many individual management systems that have been identified, and implemented in an isolated manner, according to a specific management system (Rebelo et al., 2015).

### 3. The Practical Aspect

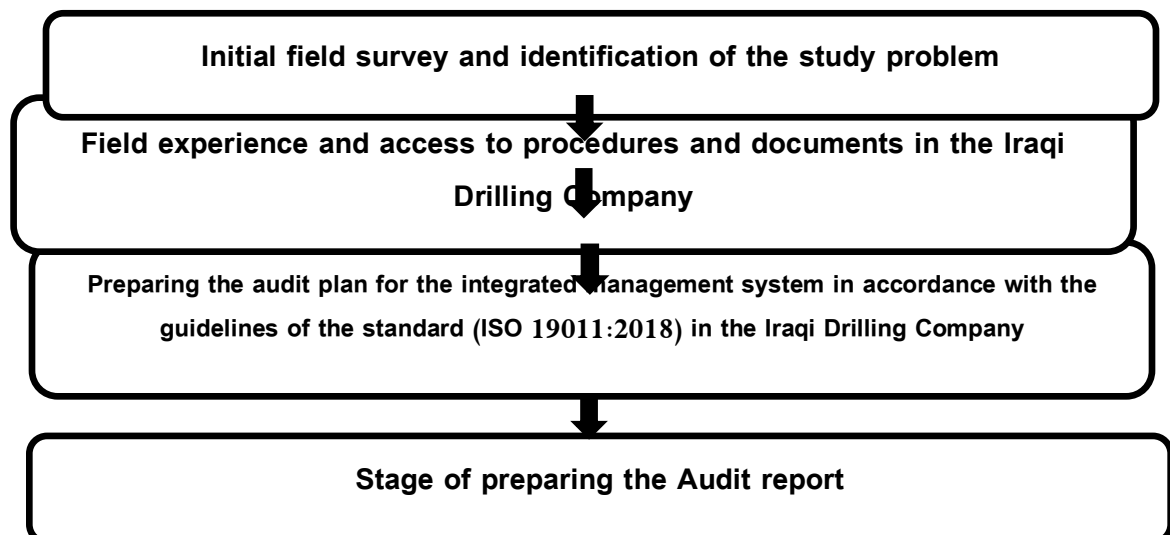
#### 3.1 Methodology

##### 3.1.1 Methods of data collection and processing

The methods of collecting data encompassed fieldwork conducted in the researched company from (2021/4/25) to (2021/8/31). This contributed to understanding the state of affairs of the application of the system, fact-finding and details related to the audit of the Integrated Management System. Moreover, practical aspects also included conducting personal interviews with the relevant authorities in the Iraqi drilling company, direct observations and viewing the company reports and related documents and studying them. It also involved using the audit checklists to assess the gap of nonconformity between the actual state of affairs of the existing integrated management system in the Iraqi drilling company and the audit standard adopted in the audit. These lists are designed from the integration of the paragraphs of the three systems into a single system, procedures and company documents. These systems are the standard specifications applied in them (ISO9001:2015, ISO14001:2015, iso45001:2018). This is based on clause (9.2) of the international standard specifications (ISO9001:2015, ISO14001:2015, iso45001:2018). This requires the company to perform an internal audit of a planned duration, to provide information on whether the system is compatible with the company specific requirements for management system, and International Standards Requirements (ISO9001:2015, ISO14001:2015, ISO45001:2018) and ensure the audit is effectively applied and maintained.

##### 3.1.2 Procedural Plan of the Study

Figure (2) below shows the procedural chart of the study, which expresses the steps followed during the study, and how to reach the results as follows:



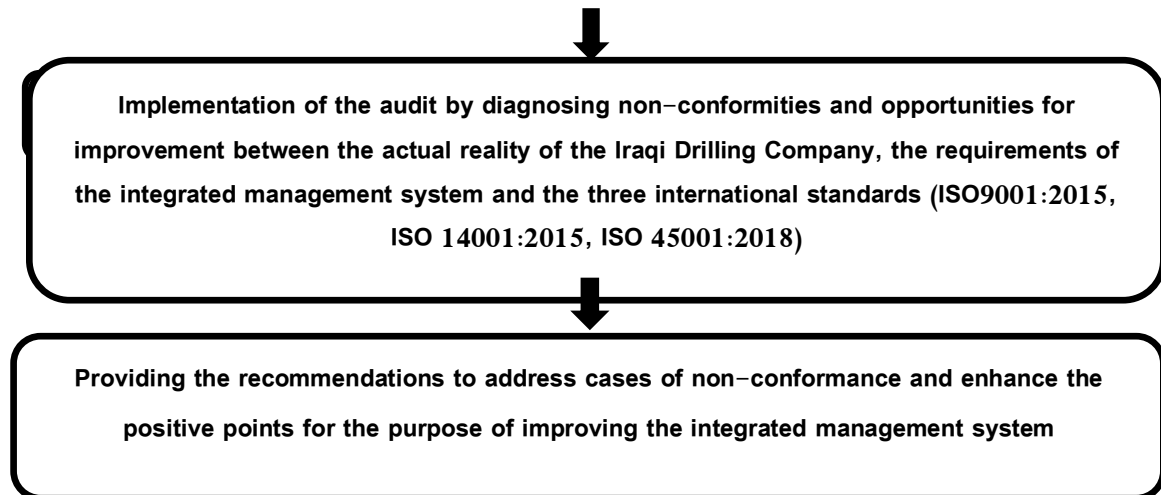


Figure (2): The procedural plan of the study

#### 4. Results and Discussion

The methodology of the Audit Standard (ISO19011:2018) will be followed in collecting documents (Audit evidence) and evaluating them in comparison with the (Audit Standard) represented by the requirements of the integrated management system consisting of the standard specifications (ISO 9001:2015, ISO 14001: 2015, ISO 45001:2018), the requirements of the management system of the company and the main requirements of interested parties governing the operation of the company. This is in order to audit the state of affairs of the integrated management system in the Iraqi drilling company and to determine the level of conformity. This can be achieved by assessing nonconformities, identifying improvement opportunities that are reached through audit findings and audit conclusions, discussing them with the audit entity, and then preparing and delivering the audit report, followed by audit follow-up activities. Table (1) below shows the first stages of the audit process for the integrated management system in the Iraqi drilling company.

##### 4.1. Audit plan stage

The audit plan was developed according to clause (6.3.2.2) of the standard (ISO19011:2018), in agreement with the audit representative, and was amended and approved by the director general to suit the entity subject to audit. Based on clause (6.3.2.2 ) of the audit standard (ISO 19011:2018), the schedule has been prepared, which is part of the audit plan, but in more detail, as it contains the basic operations and related sections, audit locations, dates, expected time and duration of audit activities to be performed, including meetings with the management of the audited entity.

Table (1) the audit plan of the integrated management system in the Iraqi Drilling Company

<b>Number: 1</b>	<b>Date of Preparing the plan:2021/9/6</b>	<b>Audit Body: Iraqi Drilling Company</b>
<u>Audit Objectives:</u>		
1) Determining the extent to which the IADIS system at ITC complies with the audit standard below and the effectiveness of the management system in achieving customer's satisfaction and other stakeholders.		
2) Determining the capacity of the integrated management system to ensure that the legal, regulatory and contractual requirements of the Iraqi drilling company are met.		
3) Determining the ability of the integrated management system to meet the specific objectives of the Iraq Drilling Company.		
4) Identifying opportunities for improvement in the performance of the integrated management system of the Iraq Drilling Company.		
<u>Audit Domain: The Company main operations sections (drilling, recovery and maintenance of wells) and a sample of drilling sites.</u>		

<u>Audit standard:</u> 1) Requirements for the ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 standards. 2) Company management system requirements. 3) The main requirements of the stakeholders that govern the operation of the company.
<u>Auditor:</u> Zahraa Abdul abbas Abed
<u>Previous audit findings:</u> one of the most prominent discoveries of the audit process related to the selected audit sample is by referring to the previous external and internal audit reports of the management system of the company.
<u>Auditing body representative:</u> Quality Division manager.
<u>Support Required:</u> Transport Vehicle / Audit observer A vehicle is provided to transport the auditor to the drilling site and an observer is provided to accompany the auditor during the audit process.
Date Execution of the audit: 4/21/2021

#### 4.2. Audit implementation stage

The audit of the integrated management system was carried out by conducting the opening interview, which dealt with the discussion of (basic operations and related sections, audit locations, dates, expected time and duration of audit activities), and collecting data during the audit process by taking appropriate samples of audit evidence documents and comparing them with the auditing standard adopted in the audit plan. The final interview was conducted in order to discuss opinions regarding the findings and conclusions of the audit and the agreement between the two parties in order to prepare the final audit report.

In light of the above, and based on item (9.2) of the standard specifications (ISO9001:2015), ISO14001:2015, ISO45001:2018), the level of conformity of the system applied in the company with (quality management system requirements, environmental management system, occupational health and safety management system) and (requirements of the company integrated management system) represented by procedures and documents, was measured by analyzing the state of affairs of the company by determining the conformity of each requirement in the lists addressed to department officials in specific questions for each section of the departments. The audit findings and analysis of their causes are presented in detail in sequence of key requirements and their ramifications as set out in international standard specifications, starting with requirement IV, the context of the organization.

Section IV (Context of the Organization) achieved a weighted arithmetic mean of 0.9 out of 2 degrees and a corresponding percentage (45%), indicating a gap of 55%. This indicates that the company is working on determining external and internal topics according to the requirement (1.4 Understanding the Organization and its context). This states that the company will determine external and internal issues related to its goal and strategic direction that affect its ability to achieve the desired results from the system. However, it does not have a methodology to manage its operations, which in turn affects understanding and meeting the requirements as well as achieving effective performance of the operations. The methodology of the operations is considered an important principle for improving the performance of the company.

This contradicts to what is stated in the requirements of the company integrated management system in the procedure (reviewing the requirements related to products and services), which stipulates implementing flow charts for the operations that need to be implemented to achieve the required service. No documents were available to indicate it, as well as the requirement (4.4 Integrated Management System and its Operations) which states that the company maintains documented information to ensure that the system operations are implemented as planned.

Section V (Leadership) achieved a weighted mean of 0.85 out of 2 (2) degrees and a corresponding percentage of (43%), indicating a gap of 57%. This means that the company is deploying the IMIS policy at headquarters and drilling sites based on the requirement (5.2.2 publication of the policy) that the system policy is available and maintained as documented information. The company identifies the needs and requirements of the internal customer. However, it does not specify the requirements of the external customer. There is no document indicating the existence of a list of needs and requirements governing the required process.

This contradicts to what is stated in the auditing standard represented by the requirements of the company (the procedure for preserving the customer's property and the external supplier) and the requirement (5.1.2 focus on the customer), which stipulates the retention and enhancement of the focus on customer satisfaction.

Section VI (Planning) resulted in a weighted mean of 0.71 out of 2 (2) degrees with a corresponding percentage of (35%) indicating a gap of 65%. This means that the company is working to identify legal and other requirements relating to the application of occupational health and safety and environment systems for all activities, operations and summaries of laws for these requirements based on a requirement (6.1.3) compliance obligations and identification of legal and other requirements). Not all evidence is available to prove the application of compliance with legal requirements and other requirements for the development, implementation and preservation of safety and the environment. This is contrary to what is stated (the procedure for determining legal and other requirements and assessing compliance with them). It contradicts to the requirement (6.1.3 Compliance obligations to specify legal requirements and other requirements) to maintain and maintain documented information about legal and other requirements and update it for any changes. It also states a weakness in the implementation of the objectives that each department must specify, in addition to the general objectives of the system related to quality, health, safety and environment, according to the (objectives document) according to what was mentioned in the (objectives and programs procedure).

Section VII (Support) achieved a weighted mean of 0.94 out of 2 degrees and a corresponding percentage (47%), indicating a gap of 53%. This means that the company has a number of procedures that combine the requirements related to the integrated management system. The company is committed to reducing the time in the company in response to the decision of the crisis cell to address the coronavirus pandemic.

However, the absence of a competency document in most of the company departments represented in defining the actual and required competency of the employees, in which each department of the company must determine the actual competency, which is represented by (the academic qualification, experience, the last job title that the employee obtained and the courses for the last two years). As for the required competency, which is represented by (the job title to which the employee will move later, the courses and the number of years of required experience that he needs for promotion). This led to the inability of the responsible person to activate the (promotion and change of job titles form) for the drilling cadre due to the insufficient information being provided to the persons who fulfill the conditions for activating this form. This is contrary to what was mentioned in the company procedures (efficiency procedure). It also contradicts to the requirement (2.7 eligibility), which states that documented information (documents) should be retained as evidence of competence.

Section VIII (Operation) achieved a weighted arithmetic mean of (0.56) out of (2) a degree and a percentage of conformity (28%), indicating a gap of (72%). This means that the company is working on setting standards for drilling, reclamation and maintenance operations, defining and determining the conditions necessary to achieve the process and identifying the necessary resources in agreement with the customer by defining the process inputs, standards and conditions. These in turn will ensure the compatible process outputs by formulating a quality plan for the drilling program provided by the customer, in which the operations plan for each drilling rig is specified. The company, however, does not work on activating the communication documents with the local customer and the absence of the customer's property record, despite the existence of procedures related to communicating with the customer and maintaining his property.

This contradicts to what was mentioned in the company procedures represented by (the communication procedure), which provides for the regulation of internal and external communications related to the systems applied in the company to follow up on proposals, complaints and opinions of customers to improve work. This is contrary to (the procedure for preserving the property of the customer and the external supplier), which refers to determining the methods and mechanism for preserving the property of the customer and the external supplier as long as it is under the control and use of the drilling company during the stages of service realization. The company also does not provide any documents indicating its ability to meet the requirements of the products and services it provides. It does not do any review after specifying the requirements in anticipation of changes that occur to contracts and requests that are rarely fixed, according to what was mentioned (conducting a review of requirements for products and services)

Section VIX (performance evaluation) achieved a weighted mean of (1.06) out of (2) score and a compliance percentage of (53%), indicating a gap of (47%). This means that the company is working on determining its monitoring, measurement, analysis and evaluation needs based on the requirement (9.1 monitoring, measurement, analysis and evaluation). This provides for the identification of monitoring, measurement, analysis and evaluation methods necessary to ensure the correctness of the results. The company is also working on conducting internal audits for specific periods to provide information on whether the system is compatible with the requirements of the company and the requirements of the integrated management system based on the requirement (9.2.1 internal audit). However, there is a weakness in the process of monitoring, measurement, analysis and evaluation in the company and the absence of documents indicating the monitoring and measurement of most of the company activities, including maintenance operations that are associated with essential impacts on the system and its operations, and the lack of appropriate monitoring of the environmental performance of activities and services in the company that have an environmental appearance that leads to environmental impacts. The company also does not have any evidence indicating the external and internal subject control processes. In addition, there is no evidence of monitoring the performance of cleaning contractors at the company headquarters.

This contradicts to what was mentioned in the company procedures represented by (conducting monitoring, measurement, analysis and evaluation). It contradicts to the requirement (9.1 Monitoring, Measurement, Analysis and Evaluation), which states that the company works to maintain appropriate documented information as evidence of the results of monitoring, measurement, analysis and performance evaluation.

Section X (improvement) achieved a weighted mean of (0.75) out of (2) score and a compliance percentage of (37%), indicating a gap of (63%). This means that the company is working on protecting employees when reporting injuries and accidents under the (procedure for reporting and investigating accidents and injuries). It also means the company is working on activating the document (verification of accidents) related to this matter based on the requirement (10.2 accidents, nonconformity and corrective actions). This provides for dealing with the consequences by mitigating negative effects. It also indicates the company awareness of the importance of achieving improvement of the integrated management system by identifying opportunities and benefits achieved from them. It also means that the lack of planning and implementation of these opportunities the absence of a mechanism for continuous improvement of the policy and objectives of the integrated management system. It also indicates that the improvement procedures are restricted to only those on nonconformities during the drilling process, as improving performance means improving the ability of operations to achieve the desired results and thus achieve the objectives of the integrated management system.

This contradicts to what is stated in the requirement (10.1 General) stating that the company must identify and choose opportunities for improvement and implement the necessary measures to comply with the customer's requirements to enhance their satisfaction. In addition to the lack of clarity about the method of measuring the performance of the system, which should indicate the amount of operations that achieve their goals or not.

**4.3. The stage of preparing and distributing the audit report**

Based on clauses (6.5.1) and (6.5.2) of the standard (ISO 19011: 2018), the audit report includes some common paragraphs contained in the audit plan, as shown in Table (3) below:

Table (3): The audit report of the integrated management system in the Iraqi Drilling Company

Number: 1	Date of Issuance of The Audit report:12/12/2021	Audit Body: Iraqi Drilling Company
<p><u>Audit Objectives:</u>                      1- Audit Objectives:</p> <p>1) Determining the extent to which the IADIS system at ITC complies with the audit standard below and the effectiveness of the management system in achieving customer's satisfaction and other stakeholders.</p> <p>2) Determining the capacity of the integrated management system to ensure that the legal, regulatory and contractual requirements of the Iraqi drilling company are met.</p> <p>3) Determining the ability of the integrated management system to meet the specific objectives of the Iraq Drilling Company.</p>		



4) Identifying opportunities for improvement in the performance of the integrated management system of the Iraq Drilling Company.
<u>Audit Domain:</u> The Company main operations sections (drilling, recovery and maintenance of wells) and a sample of drilling sites
<u>Audit standard:</u> 1) Requirements for the ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 standards. 2) Company management system requirements. 3) the main requirements of the stakeholders that govern the operation of the company
<u>Auditor:</u> Zahraa Abdul abbas Abed
5- <u>Auditing body representative:</u> Quality Division manager.
<u>Audit findings:</u> based on clause (6.4.8) of the standard (ISO 19011:2018) is a result that was reached during the audit from the evaluation of audit evidence against the requirements contained in the audit standards and was mentioned in detail in the stage of implementation of the audit above.
<u>Audit Conclusions:</u> Based on item 6.4.9 of the standard (ISO19011:2018) is drawing conclusions showing the compatibility (audit findings with audit objectives) and the strength of the management system. This includes its effectiveness in meeting intended results, and they will be mentioned in the study conclusions section later.
Date of delivery of the audit report: 12/13/2021

#### 4.4. The stage of Auditing Follow-Up

Based on Standard Item (6.7) (ISO19011:2018), and in view of detected mismatches during the audit, company corrective and preventive actions are required to be implemented based on proposed recommendations.

#### 5. Conclusions

based on the results of the audit findings as compared to the audit objectives set out in the audit plan. The findings show the company weakness in properly applying the integrated management system, the lack of appropriate evidence indicating the satisfaction of the parties concerned, its failure to meet all legal and regulatory requirements, and its inability to achieve its stated objectives.

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