

# Dzaky Ekki Wibowo

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# EVALUATION OF THE IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM (SMK3) AT PT. PELABUHAN

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## ABSTRACT

Issues related to occupational safety and health in general are still neglected, especially in Indonesia. This can be proven in the high rate of work accidents. At PT. Pelabuhan recorded the number of work accident incidents of 469 cases in the 2019-2022 period. The occupational safety and health management system (OSHMS) is a form of prevention and reduction of the risk of work accidents. This study aims to evaluate the application of OSHMS PT. Pelabuhan as an effort to develop the application of OSHMS and improve HSSE performance at PT. Pelabuhan. This study will take OSHMS data according to PP 50 of 2012 with 166 criteria (Advanced Level). Based on the results of the audit and analysis carried out, it is known that the number of criteria fulfilled is 156 criteria with a percentage of 93.97% and there are 10 criteria of non-conformity percentage 6.03% (minor category). These results state that the level of implementation of OSHMS at PT. Pelabuhan is included in the (Satisfactory) category. Furthermore, corrective actions and recommendations will be made for non-conformity in OSHMS.

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## 1. INTRODUCTION

The success of an organization or company depends on its human resources. Therefore the company must maintain and pay attention to its human resources. Human resources are an important asset for companies that must be considered seriously and as well as possible (Abdulrahim & Ardika, 2022). To increase effectiveness and efficiency, companies must be good at managing their human resources. Because good human resource management will have an impact on work results and an increasingly optimal contribution of human resources (Tarwaka, 2014). In the management of human resource management, one thing that must be considered is the occupational safety and health system. This is regulated in Law No. 1 of 1970 concerning Work Safety which reads "that every worker has the right to protection for his safety in carrying out work for the welfare of life and to increase national production and productivity" (Abdulrahim et al., 2019).

Issues related to occupational safety and health in general are still neglected, especially in Indonesia. This can be proven in the high rate of work accidents. In Indonesia itself, many workers tend to ignore occupational safety and health (Arasid & Saijiyo, 2022). There are various reasons why workers ignore occupational safety and health, starting from a lack of knowledge about occupational safety and health, the use of personal protective equipment that is uncomfortable when used at work, and the lack of supervision by companies regarding occupational safety and health (Tarwaka, 2012). In this case the company has the authority to warn and impose sanctions on workers who do not comply with regulations regarding occupational safety and health. Companies are also required to provide training and guidance to their human resources (Ardana & Utama, 2012). Training also has a positive effect on the performance and work effectiveness of its workers (Fitriana & Wahyuningsih, 2017). This is also regulated in Law No. 1 of 1970 concerning Occupational Safety, Article 9 which reads "Managers are required to provide guidance for all workers under their leadership, in preventing accidents and combating fires as well as improving occupational safety and health, also in providing first aid in accidents.

According to the International Labor Organization (ILO), it has been found that more than 2.3 million workers die every year due to work accidents or occupational diseases. The ILO estimates that the

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annual global economic cost of occupational accidents and diseases alone is 3 trillion dollars. So preventing occupational disease and injury must be a vital priority for everyone in the workplace (Siti Choiriyah et al., 2020). One of the classic (and most horrific) historical examples of workplace incidents that demonstrate the need for an occupational safety and health management system is the Triangle Shirtwaist Fire (Kanugrahan et al., 2022). Other notable and more recent examples include the Bhopal/Union Carbide explosion in 1984, the Great Upper-South Branch Mine explosion in 2010, the BP Deepwater Horizon oil spill in 2010, and the fire at, and collapse of the Savar building in Bangladesh in 2013 (Lidya, 2013).

According to BPJS Employment, in 2021 Indonesia will record up to 234,270 work accident cases. Compared to last year, this number increased by 5.65% and reached 221,740 cases. If we look at the trend over the last five years, the number of work accidents in Indonesia has increased. Since 2017, there have been 123,040 work accidents. In 2018, this number increased by 40.94% to 173,415 cases. A year later, work accidents increased by 5.43% to 182,835 cases. In 2020, domestic accidents increased by 21.28% and reached 221,740 cases. This number increased again last year. According to Employment BPJS, most of these accidents occur in the workplace. This usually occurs between 06:00 and 12:00 in the morning. In 2021 Employment BPJS spends IDR 1.79 trillion to pay compensation for injuries to these workers. This figure is up 14.97% compared to last year which reached Rp 1.56 trillion.

There is no workplace that is completely free from risks of work hazards and accidents. Possible sources of occupational accident hazards can be identified starting from raw materials, work processes, products, and production waste, both waste in the form of gas, solid or liquid. With an understanding by workers of the application of occupational safety and health, it certainly has a very positive impact on handling work accident problems in the workplace. An understanding of occupational safety and health by workers is also to ensure the safety and health of workers and a work environment that creates a safe, healthy and safe work process. All workers and management must also participate in the implementation and understanding of occupational safety and health (Peraturan Menteri Ketenagakerjaan Republik Indonesia, 2012)

Companies must bear cases of accidents that occur as a result of work at the company, both in the production process and in the company's work environment. Companies will bear greater losses that arise if the rate of work accidents that occur in the company is higher (Wirawan, 2015). The consequences of work accidents can be divided into two, namely work accidents that cause direct losses and work accidents that cause indirect losses. The costs of medical treatment and recovery for workers due to work accidents and damage to production facilities and company assets that require repair costs are examples of direct losses (Peraturan Menteri Ketenagakerjaan Republik Indonesia, 2014). Examples of indirect losses are loss of lost or reduced working hours, loss of reduced production, social losses and decreased corporate image and reduced consumer confidence due to work accidents (Sajiyo, 2018).

Occupational safety and health issues in the maritime and port sectors are part of Indonesia's national interests. In Indonesia, there are various reasons related to the importance of sea transportation and connectivity to the country's growth and development. Overseas, maritime and port occupational safety and health are issues that involve norms and regulations in their respective regions. For Indonesia, being an active participant in the rule-making process is the key to playing a role in foreign policy, because the introduction of a stable and rules-based order in the Indonesian region is very important to national interests. As a maritime nation with a vast maritime territory and numerous ports, Indonesia has a direct interest in improving maritime and port safety standards. In addition, to fulfill its potential and become a developed nation, Indonesia needs to have the capacity to be able to utilize all of its resources. The capacity in question relates to Indonesia's ability to mobilize and integrate all of its separate resources on its islands. This important capacity is the key to connectivity between all regions of Indonesia (Peraturan Menteri Ketenagakerjaan Republik Indonesia, 2018).

According to data from the management of Tanjung Perak Port in Surabaya in 2010, cases of loading and unloading and port service accidents occurred in Indonesia in the period 1995-2010. Some of these accidents occurred at the Port of Tanjung Perak in Surabaya (Mangkunegara, 2013). Accidents caused by fire were recorded at 7.56%, accidents that caused ships to sink by 16.85%, collision accidents between ships by 37.15%, shipwreck accidents by 7.34%, accidents at loading and unloading services that fell into the sea 4.97%, 12.74% for damaged machines, drifting ship accidents 0.86%, broken anchors 1.08%, other unrecorded accidents 2.59%, other accidents 2.81 % (Lokajaya, 2015).

The role of the government as a policy maker and executor of interests in creating national sustainability by creating PT. Pelabuhan as base. This foundation is needed to create good connectivity

between domestic ports and international ports with a series of logistics in a strong ecosystem. PT. Pelabuhan has business procedures that are neatly arranged, standardized and a proven level of efficiency for customers of PT. Pelabuhan. This is due to well coordinated strategic control and strong financial support factors.

PT. Pelabuhan is one of the state-owned enterprises' subsidiaries in Indonesia. PT. Pelabuhan has been a port operator for decades as the first container loading and unloading service provider in Surabaya that has been standardized at the international level. Various companies in Indonesia and abroad have entrusted PT. Pelabuhan, PT. Pelabuhan have been widely recognized in the management of international containers and domestic container terminals. Various assistance services regarding port logistics needs such as loading and unloading services and container loading and others. It has become a must for PT. Pelabuhan adjust service levels according to international standards for the provision of services for loading and unloading, loading and management of international containers. PT. Pelabuhan has also been proven with certificates that have been obtained related to K3, including: SMK3 based on Government Regulation Number 50 of 2012, ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007, ISO 28000:2007, ISO 27001:2013, International Ship and Port Facility Security Code (ISPS Code).

In Permenaker PER.05/MEN/1996 concerning Occupational Health and Safety Management System Article 7 paragraph 1, it is explained that companies are required to carry out SMK3 audits at least once in 3 years. The fact that the last SMK3 audit was conducted in 2013 raises concerns about the company's commitment to continuous evaluation and improvement that is not in accordance with applicable regulations. Evaluations made nearly a decade ago may not accurately reflect the current state of a company's safety practices, as circumstances, regulations, and operational aspects may have changed over that time. Periodic evaluation is essential to identify weaknesses, evaluate performance, and implement corrective measures to ensure continuous improvement of safety performance.

One of the reasons why PT. Pelabuhan does not periodically evaluate the Occupational Safety and Health Management System (SMK3) due to the lack of attention from the HSSE management of PT. Harbor. Another reason is due to time constraints. Within PT. Pelabuhan fast-paced ports, companies often face heavy workloads and tight schedules. Implementation of SMK3 audits at PT. Pelabuhan that are not carried out in accordance with applicable government regulations have had the impact of increasing cases of work accidents and the incompatibility of their practical implementation in the last 10 years. In the operation of PT. Pelabuhan in 2022, there will still be several cases of work accidents that cause injury or non-injury. Based on the management data of PT. Pelabuhan, there were 149 cases of work accidents. The following is an infographic of work accident cases in the 2019-2022 timeframe according to PT. HSSE Performance data. Harbor.

Article Error (ETS)



Figure 1. Number of Work Accident Cases at PT. Pelabuhan

In figure 1. according to the HSSE Performance data of PT. Pelabuhan above shows that in the 2019-2022 range, work accident cases at PT. Pelabuhan goes up every year. With the increase in work accident cases each year, it indicates that work accident risk control at PT. The port needs to be evaluated and interpreted on the Occupational Safety Management System (SMK3).

Based on the non-fulfillment of government regulations that require PT. Pelabuhan evaluates the occupational safety and health management system every 3 years at least and the high number of work accident cases at PT. Pelabuhan are increasing every year as well as the number of employees and jobs with high risk, in this case it is necessary to evaluate the implementation of the Occupational Safety and Health Management System (SMK3) run by PT. Pelabuhan.

Prep. (ETS)

## 2. METHOD

Data collection checklist form SMK3 assessment at PT. Pelabuhan by conducting an audit of 12 elements consisting of 166 criteria. Data collection was carried out by filling out the SMK3 audit checklist form in accordance with Government Regulation Number 50 of 2012. Data collection on the SMK3 assessment form was carried out using the following method:

The interview method was carried out by asking questions about the criteria to be assessed on the SMK3 assessment form, directly to the research respondents. Data collection techniques in the interview method are carried out by:

- Clarifying what has been recorded in the checklist SMK3 guideline form (form attached) with open questions so that the resource persons are free to speak and provide information.
- Avoid questions with "Yes/No" answers, cornering questions and questions asked simultaneously.
- Ensuring that all the evidence to be obtained has been asked.
- Record and compare the results of interviews with assessments according to SMK3 criteria.
- Re-clarifying with the source if there is a discrepancy.
- Provide an assessment of the criteria asked, whether the criteria are appropriate or there are critical findings, major findings, or minor findings.

Observations were made by observing the work area in all work units of PT. Pelabuhan. Observations were made to look for unsafe conditions in the work area that could potentially cause work accidents at PT. Pelabuhan.

Document review in the Occupational Health and Safety Management System (SMK3) is the process of reviewing and verifying documentation related to SMK3 to ensure that the document is complete, accurate, up-to-date, and complies with relevant legal and regulatory requirements, industry standards, and internal policies and procedures.

Documents that can be subject to document review in SMK3 can be in the form of policies, procedures, work instructions, forms, and other documents that are part of SMK3. The purpose of a document review is to ensure that the document is effective in achieving its intended purpose and is followed by employees.

During document review, a review is conducted to identify discrepancies, errors, or gaps in document content. Any areas where documentation could be improved to improve worker and workplace safety and health were also identified.

## 3. RELUST AND DISCUSSION

### 3.1 Analysis and Discussion of Data on the Implementation of the Occupational Safety and Health Management System (SMK3)

#### 3.1.1 SMK3 Implementation Assessment

Based on the results of data collection on the Application of the Occupational Safety and Health Management System (SMK3) at PT. Pelabuhan, it was found that of the 12 elements with 166 audit criteria for the application of SMK3, there were 156 criteria that were well met (Compliant) and 10 criteria were not well met (Not suitable in the minor category). From the results of this data collection, it is then used to calculate the percentage of achievement level assessment based on Government Regulation Number 50 of 2012 concerning the Implementation of Occupational Safety and Health Management Systems (SMK3), using a predetermined calculation formula, which is as follows:

- Conformity Level

$$\text{Implementation Achievement Rate} = \frac{156}{166} \times 100\% = 93,97\%$$

- Level of Non-conformity

$$\text{Level of Non - conformity} = \frac{10}{166} \times 100\% = 6,03\%$$

Based on the results of the calculation of the application assessment level above, it can be described as follows:

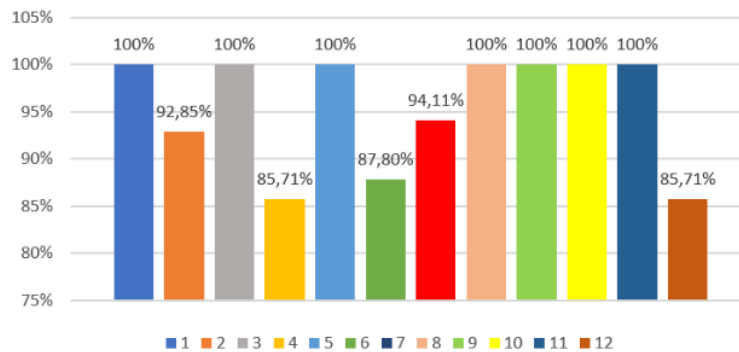
- Audit Criteria : Advanced Level (166 Criteria)
- Total Appropriate Criteria : 156 Criteria
- Total Criteria Not Appropriate : 10 Criteria

- Minor Non-conformities : 10 Criteria
- Major discrepancy : - Criteria
- d. Implementation Achievement Rate : 93.97%
- e. Level of Non-conformity : 6.03%
- f. Deployment Rate : **Satisfying**

10 The following is a description of the implementation assessment and the percentage of suitability for the implementation of the Occupational Health and Safety Management System at PT. Pelabuhan consisting of each of the 12 Elements:

**Table 1. Assessment of the Implementation of each SMK3 Element**

No	Element	Number of Criteria	Fulfilled / Appropriate		Not Fulfilled / Incompatible		
			Amount	Percentage (%)	Amount		Percentage (%)
					Major	Minor	
1	Building and Maintaining Commitments	26	26	100%	-	-	-
2	Making and Documenting K3 Plans	14	13	92.85%	-	1	7.14%
3	Design Control and Contract Review	8	8	100%	-	-	-
4	Document control	7	6	85.71%	-	1	14.28%
5	Product Assessment and Control	9	9	100%	-	-	-
6	Work Security Based on SMK3	41	36	87.80%	-	5	12.19%
7	Monitoring Standard	17	16	94.11%	-	1	5.88%
8	Deficiency Reporting and Correction	9	9	100%	-	-	-
9	Management of Materials and Their Transfers	12	12	100%	-	-	-
10	Data Collection and Use	6	6	100%	-	-	-
11	Examination SMK3	3	3	100%	-	-	-
12	Skills and Ability Development	14	12	85.71%	-	2	14.28%
<b>Sub-Total</b>		<b>166</b>	<b>156</b>	<b>-</b>	<b>-</b>	<b>10</b>	<b>-</b>



**Figure 2. Graph of the Percentage of Implementation of the 12 Elements of SMK3**

Based on the pictures2 above, it can be seen that there are 7 Elements fulfilled and 5 Elements not fulfilled.

Information :

1. Building and Maintaining Commitments

- 5
2. Making and Documenting K3 Plans
3. Design Control and Contract Review
4. Document Control
5. Product Assessment and Control
6. Work Security Based on SMK3
7. Monitoring Standard
8. Deficiency Reporting and Correction
9. Management of Materials and Their Transfers
10. Data Collection and Use
11. Examination SMK3
12. Skills and Ability Development

Based on Figure 2 above, the adjustment of the order of recommendations based on priority is as follows:

**Table 2. Order of Priority Recommendations for Improvement**

Priority	Element No	Element
I	4	Document Control
	12	Skills and Ability Development
II	6	Work Security Based on SMK3
III	2	Making and Documenting K3 Plans
IV	7	Monitoring Standard

### 3.1.2 Recommendations for the Incompatibility of SMK3 Implementation

Based on the results of an audit conducted on the implementation of the Occupational Safety and Health Management System (SMK3) at PT. Pelabuhan, it is stated that the company has fulfilled the requirements of the applicable laws and regulations. The level of achievement of SMK3 implementation at PT. Pelabuhan achieved 93.97% which is included in the "Satisfactory" rating category with a percentage range (85-100%). Even though there were findings of a discrepancy of 6.03%, it was included in the minor category. Therefore, PT. Pelabuhan must take response and corrective actions in implementing SMK3 to ensure the safety of workers in the operations carried out.

Response and improvement actions on the implementation of SMK3 carried out by PT. Pelabuhan must be carried out in detail and systematically, according to the table provided. This is done to ensure that the company complies with applicable laws and regulations and prevent work accidents. After knowing the cause of the non-compliance with the SMK3 criteria, efforts are then made to find out improvements/recommendations for the non-compliance at SMK3. In an effort to improve/recommendation, an inverted Ishikawa diagram is used.

### 3.1.3 Description of Recommendations for the Implementation of SMK3 PT. Pelabuhan

The following is a description of recommendations for the implementation of the Occupational Safety and Health Management System (SMK3) of PT. Pelabuhan that can be applied by the management as a preventive measure in overcoming deficiencies in the implementation of SMK3 implementation.

1. *Non Conformity 1*
  - a. The finding is that the OSH training is carried out separately and not in its entirety.
  - b. The impact is that employees who do not receive training do not understand OSH.
  - c. The improvement made is integrating all departments for OSH training.
  - d. The resulting output is the OSH training schedule and curriculum.
2. *Non Conformity 2*
  - a. The finding was that work instructions and hydrants were found in the incinerator area which had no document status.
  - b. The impact is that without updated and relevant OSH documents, employees may perform their duties in an unsafe manner and increase the risk of accidents.
  - c. Improvements made are identification of work instructions/procedures posted in public places and completion of document status on the Hydrant.
  - d. The resulting output is work instructions for the aera incinerator and document status for the Hydrant

3. *Non Conformity 3*
  - a. The findings are that the APAR in the service building is not marked, and the EXIT sign is not in accordance with the provisions.
  - b. The impact is that without an APAR sign, people cannot find an APAR quickly, which can cause delays in extinguishing the fire and increase the risk of a greater fire.
  - c. The improvement made was to encourage the management of the Service Building to put up an APAR sign at each location and put up an EXIT sign in accordance with the applicable regulations.
  - d. The resulting output is in the form of an APAR sign and an EXIT sign that comply with regulations.
4. *Non Conformity 4*
  - a. The finding was that there was no evidence of inspection of the lightning conductor at the SPBP location.
  - b. The impact is that the ability of the installation to capture and channel lightning current will decrease, so it will not be effective in protecting buildings from lightning impacts which can cause short circuits and fires.
  - c. Improvements made include including and monitoring lightning rods into equipment certification.
  - d. The resulting output is the scheduling of monitoring and certification of lightning dealers.
5. *Non Conformity 5*
  - a. The finding is that the LOTO used by the vendor is not in accordance with the procedure.
  - b. The impact is that if the machine or equipment is not properly locked or marked, it can cause work accidents, such as injury, amputation, or even death.
  - c. The improvements made were identifying the use of LOTO in RTG Maintenance and replacing equipment related to LOTO according to document procedures.
  - d. The resulting output is a warning to the vendor to use LOTO which has been adjusted and regulated in the procedure.
6. *Non Conformity 6*
  - a. The finding is that all fire extinguishers at PT. Pelabuhan has never been pressure tested.
  - b. The impact is if the pressure in the APAR tube is not measured correctly, then when a fire occurs and the APAR is used, the APAR cannot extinguish the fire because the pressure is insufficient or it breaks because it is too big.
  - c. The improvements made are periodic APAR testing according to applicable regulations, namely not exceeding a period of 5 years.
  - d. The resulting output is the APAR pressure test schedule.
7. *Non Conformity 7*
  - a. The findings were that the contents of the first aid kit did not meet the requirements and there had been no checking of the condition of the contents of the first aid kit.
  - b. The impact is that it can lead to delays in providing assistance.
  - c. The improvement made was to refill the contents of the first aid kit in accordance with Permenaker 15/MEN/VIII/2008/Appendix II.
  - d. The resulting output is a table of contents of the first aid kit.
8. *Non Conformity 8*
  - a. The finding was that the results of environmental measurements did not mention that the lighting was below standard.
  - b. The impact is that it can cause the eyes to tire quickly and worsen eye conditions.
  - c. Improvements made are changing the room lighting to a minimum of 300 lux.
  - d. The resulting output is lighting according to standards.
9. *Non Conformity 9*
  - a. The finding is that an annual training program is prepared for positions from managers to staff, not including directors.
  - b. The impact is that if a director or manager does not have sufficient knowledge of OSH, then they cannot lead the company effectively and cannot ensure that employees are protected from the hazards and risks associated with their work.
  - c. The improvements made were rearranging the training program as a whole, starting from the position of the Board of Directors to the Executive Position.
  - d. The resulting output is the OSH training schedule and curriculum.
10. *Non Conformity 10*
  - a. The finding was that there was no direct involvement of senior management in minimal training activities on legal obligations and the principles and implementation of OSH.



- b. The implication is that if a director or manager does not attend this training, they do not understand the legal requirements that must be met by the company. This can lead to violations of the law and can negatively impact the company's reputation.
- c. The improvement made is a program for participation in IOSH Directing, namely a training program on special safety behavior for Directors and CEOs according to the standards of the Institution of Occupational Safety & Health, UK.
- d. The output issued is the IOSH training schedule for directors and CEOs.

In the results of the comparison table for the implementation of SMK3 in 2013 and 2023, the following description is obtained:

1. 2013 SMK3 Application Assessment:

- a. Audit Criteria : Advanced Level (166 Criteria)
- b. Total Appropriate Criteria : 137 Criteria
- c. Total Criteria Not Appropriate : 29 Criteria
  - Minor Non-conformities : 29 Criteria
  - Major discrepancy : - Criteria
- d. Implementation Achievement Rate : 82.53%
- e. Level of Non-conformity : 17.47%
- f. Deployment Rate : **Good**

2. Assessment of SMK3 Implementation in 2023:

- a. Audit Criteria : Advanced Level (166 Criteria)
- b. Total Appropriate Criteria : 156 Criteria
- c. Total Criteria Not Appropriate : 10 Criteria
  - Minor Non-conformities : 10 Criteria
  - Major discrepancy : - Criteria
- d. Implementation Achievement Rate : 93.97%
- e. Level of Non-conformity : 6.03%
- f. Deployment Rate : **Satisfying**

Overall, a comparison between the results of the SMK3 audit assessment implementation between 2013 and 2023 shows a significant increase in the implementation of SMK3. Even though there are still findings of non-conformities in 2023, the lower number of findings and a higher percentage of implementation indicate a strong commitment to improving employee safety and health. This shows that there is a continuous improvement effort over time.

#### 4. CONCLUSION

After analyzing and auditing the Occupational Safety and Health Management System (SMK3), it can be concluded that the implementation of the Occupational Safety and Health Management System (SMK3) in PT. Pelabuhan, among others, is the application of SMK3 at PT. Pelabuhan achieves satisfactory criteria with a percentage of 93.97%. This shows that the company has paid attention to the occupational safety and health of its workers. However, the finding of a discrepancy of 6.03% indicated that there were deficiencies in the implementation of SMK3. Factors causing discrepancy of 6.03% in the implementation of SMK3 at PT. Pelabuhan includes: K3 training that is not comprehensive, work instructions and hydrants that do not have documents, lack of suitable APAR and EXIT signs, no documents for inspection of lightning conductors, use of LOTO that is not in accordance with procedures, APAR that has not been pressure tested, contents of the first aid kit that do not meet requirements, lighting that does not meet standards, training programs that do not include directors, and lack of involvement of senior management in OSH training. Improvements made include integration of OHS training, completion of work documents and instructions, installation of APAR and EXIT signs, scheduling of APAR pressure tests, refilling first aid kit contents, lighting replacement, expansion of training programs.

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