

Occupational Safety and Health (K3) Risk Management Analysis on The Gumawang - Lampung 275 KV SUTET Project (Section 7)

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ABSTRACT

Quoting from the Law of the Republic of Indonesia No. 1 of 1970 "That every worker has the right to be protected for his/her safety in doing work for the welfare of life and increasing production and national productivity".

This research aimed to identify hazards by calculating the level of occupational safety and health (OHS) risk value and conducting an analysis of the application of the Occupational Safety Management System (OSMS) applicable to the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development Project based on Ministerial Regulation PU Number: 10 / PRT / M / 2021. The method used was a qualitative method with an empirical approach. Interviews and observations during the implementation of OHS in related projects were conducted to measure the authenticity of data in the field and to improve the data obtained.

The data obtained was then processed and assessed with an assessment rubric guided by the PUPR Regulation Number: 10 /PRT/M/2021. Based on the research that has been carried out, it was concluded that the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Project had implemented the Occupational Safety Management System (OSMS) properly without work accidents, so it was said to be zero accidents.

Keywords: safety of construction work, risks

INTRODUCTION

PT PLN (Persero) is a state-owned company in order to meet electricity needs and

improve the reliability of electricity supply in the Lampung Province, PT. PLN (Persero) UPP SUMBAGSEL 3 plans to build a 275 kV SUTET which is connected from the 150 kV Gumawang Substation and will be transmitted through the SUTET Tower with a voltage of 275 kV to the New Substation of Extra High Voltage 275 kV Lampung (Metro). Quoting the consideration of the Law of the Republic of Indonesia No. 1 of 1970 "That every worker has the right to be protected for his safety in carrying out work for the welfare of life and increasing production and national productivity". For this reason, a Construction Safety System (OSMS) is needed in accordance with the PUPR Ministerial Regulation No. 10 of 2021. Also, to minimize the occurrence of work accidents. Based on the Law of the Republic of Indonesia of 1970 concerning Occupational Safety, it is written that "every worker has the right to protection for safety in carrying out work for welfare and increasing national production and productivity".

Therefore, research was conducted to identify hazards by calculating the level of risk value of Occupational Safety and Health (OHS) and conducting an analysis of the application of the Occupational Safety Management System (OSMS) applicable to the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development Project

based on the PUPR Ministerial Regulation Number: 10 / PRT / M / 2021.

Research Objectives

The objectives of this research are as follows:

1. Identifying potential hazards in the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development project.
2. Analyzing the risk value of the SUTET 275 kV Gumawang – Lampung 1 (Section 7) construction project.

LITERATURE REVIEW

Work Accidents

An accident due to work is an accident related to the employment relationship at the company, in the sense that the accident occurs due to work or at the time of carrying out work. Work accidents can be prevented by paying attention to several factors, including the following.

1. Socializing the basics and rules that exist in the implementation of Occupational Safety and Health (OHS).
2. Doing Safety Briefing before doing work.
3. Installing Signs – Hazard signs and Employment boundary lines.
4. Providing supervision at the time of the implementation of work from the OHS side.

Occupational Safety and Health (OHS)

According to the Regulation of the Minister of PUPR No.10 of 2021 concerning the Construction Safety Management System Chapter 1 Article 1, the Construction Safety Management System, hereinafter abbreviated as OSMS, is part of the management system for the implementation of Construction Work to ensure the realization of Construction Safety.

1. Construction Safety Planning According to the PUPR Ministerial Regulation No. 10 of 2021 concerning the Construction

Safety Management System as for construction safety planning, namely:

- A. Hazard Identification and Risk Control
Contains a hazard identification table and risk control of construction implementation supervision activities according to the stages of construction work made by the Person in Charge of Construction Safety (Construction Consulting Service Provider Supervision / Construction Consultancy MK) and approved by the Head of Supervisor / MK Construction Work.
 - B. Identification of laws and regulations and other requirements is described according to hazard identification and risk control of construction implementation supervision activities according to the stages of construction work.
 - C. Containing a table of targets and programs based on hazard identification and risk control of construction supervision activities according to the stages of construction work.
2. Safety Plan Execution
Safety Plan Execution is the implementation and application in carrying out the practice of activities in the project in accordance with the standards that have been planned. These implementations include (*Project Management Body of Knowledge*, 2000).
 3. Conducting socialization at all times to all workers to comply with regulations and OHS signs.
 4. Assigning OHS (Safety Officer) officers to always review the location and handle practices according to planned standards.
 5. OHS Supervision and Evaluation (Administration and Reporting)
Supervision and evaluation of OHS will run in accordance with government regulations that require the implementation of OHS activities in every construction project, then all forms of reports related to OHS

activities must be maintained and maintained. The reports include

MATERIALS AND METHODS

Time and Place of Research

The implementation of this research was carried out on the 275 kV Gumawang – Lampung 1 Extra High Voltage Air Line (SUTET) Construction project which passed through 2 OIC and East OKU Regencies (Section 7), the implementation time started from June 1-30, 2022.

Data Analysis Technique

After the data was obtained by observation and interview, the data was then processed, so an average value of the probability and impact of each risk was obtained. Then the average value was likely to be summed up with the average value of the impact, so the value of the risk index (risk level) was obtained. After the risk index value was obtained, the risk value was compared with the risk level standard to determine the level /level of risk based on the Regulation of the Minister of Public Works No. 10 of 2021 and based on the known level / level of risk, then a control strategy for OHS risk was carried out

RESULT AND DISCUSSION

The implementation of the Construction Safety Management System (OSMS) in the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development Project has been implemented properly. This shows that there are no incidents of work accidents or zero accidents while the project is running. At the project site, OHS signs have also been installed and briefing safety or hazard identification is always carried out before carrying out work every day.

In mobilization work has a moderate level of risk in accordance with the regulations that have been made, it turns out that in the field there have been no work accidents found more than 1 year with a frequency value of 1, so the risk level can be corrected to be small.

In foundation work has a moderate level of risk in accordance with the regulations that have been made, it turns out that in the field there have been no work accidents found more than 1 year with a frequency value of 1, so the risk level can be corrected to be small.

The Erection Tower work has a moderate level of risk in accordance with the regulations that have been made, it turns out that in the field there have been no work accidents found more than 1 year with a frequency value of 1, so the risk level can be corrected to be small.

Table 1. Work Accident of SUTET Construction Project 275 kV Gumawang – Lampung 1 (Section 7) .

No.	Job Description	Accident Happened	
		Yes	No
1	Mobilization of Tools		√
2	Foundation Work		√
3	Erection Tower Works		√

The application of the Construction Safety Management System (OSMS) in the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development Project has been carried out properly, there are no work accidents when the project is running so that it can be categorized as zero accidents.

CONCLUSION AND SUGGESTION

Conclusion

Based on research conducted on construction safety risk control analysis (OSMS) on the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development Project, it was concluded that:

1. In the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development Project, the results of the identification of potential hazards are as follows:
 - a. **Tool and Material Mobilization Work:** potential danger of traffic accidents, potential danger of heavy equipment accidents, potential danger of being injured due to improper operation of heavy equipment.
 - b. **Foundation Work:** the potential danger of landslides due to the distance between

diggers being too close, the potential danger of landslide excavation slopes, the potential danger of unsafe piles of excavated material, the potential danger of work accidents due to improperly operated equipment, and the potential danger of being crushed by stone materials and the potential danger of being rolled into the foundation.

- c. **Erection Tower Works:** the potential danger of accidents due to being stranded during the climbing process, the potential danger of hand injuries due to being pinched by the tower iron at the time of installation, the potential danger of injuries being hit by iron cutting tools, the potential danger of iron-stuck wounds, and the potential danger of accidents or injuries due to being crushed by the iron tower during the raid.
2. The risk level value of the SUTET 275 kV Gumawang – Lampung 1 (Section 7) Development Project is as follows.
 - a. **Tool and Material Mobilization Work,** has a moderate risk level value with a risk value of 6.
 - b. **Foundation Work,** has a small risk level value with a risk value of 6.
 - c. **Erection Tower Work,** has a medium risk level value with a risk value of 6.

Suggestions

The suggestions for improvement of the problems found in the 275 kV Gumawang – Lampung 1 (Section 7) SUTET Development Project are as follows.

1. Improving the implementation of the Construction Safety Management System (OSMS) that is already running on the project by updating the latest

OSMS regulations, namely the Minister of Public Works Regulation Number: 10 / PRT / M / 2021 and adding several programs related to OHS to achieve zero fatal accidents at the project site

2. Conducting socialization about the importance of Occupational Safety and Health (OHS).
3. Regular safety briefings are held so that workers understand and are more aware of the importance of Occupational Safety and Health (OHS) in construction projects.

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REFERENCES

1. Depnaker. 1970. Undang-Undang RI Nomor 1 Tahun 1970 tentang Keselamatan Kerja. Departemen Tenaga Kerja RI. Jakarta.
2. International Labour Organization. 2018. Meningkatkan Keselamatan dan Kesehatan Pekerjaan Muda. Organisasi Perburuhan Internasional. Jakarta
3. Menteri Pekerjaan Umum Republik Indonesia Nomor: 10/PRT/M/2021. Pedoman Sistem Manajemen Keselamatan Kerja (SMKK) Konstruksi Bidang pekerjaan Umum. Kementrian Pekerjaan Umum Republik Indonesia. Jakarta.
4. PT. PLN (Persero) UIP SUMBAGSEL. 2017. Pembangunan SUTET 275 kV
5. Quadruple Zebra Gumawang – Lampung 1 Section 7 (Paket GGL-07)

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