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# HUMAN APPROACH IN THE IMPLEMENTING HEALTH PROTOCOLS FOR WORKERS SAFETY IN THE ENGINEERING OF OIL AND GAS INDUSTRY DURING THE PANDEMIC COVID 19

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**Abstract;** The safety of workers in the oil and gas industry during the COVID-19 pandemic has become a serious public concern. It is known, the oil and gas industry is one of the sectors with a large number of workers who are positively infected with the Covid 19 virus. This has led to the implementation of several pillars of work safety for oil and gas industry workers. One of these pillars is the human approach. The human approach in implementing health protocols has a fairly effective role, especially for the safety of workers in operational systems or industrial engineering. A literature review that focuses on several important points, namely: (1) how is the safety of workers in the oil and gas industry engineering sector during the covid 19 pandemic? (2) What is the function of the human approach pillar in the application of worker safety health protocols in the oil and gas industry engineering sector during the COVID-19 pandemic? Several aspects must be considered in the engineering section of the oil and gas industry by identifying installations and equipment, safe work practices, change management, integrated management, environmental management, industrial health and hygiene, contractor management, operations management, and others. While the pillars of the human approach that are of concern in implementing the health protocol are coaching and training, work competence, supervision, ergonomics, building awareness and interaction in the fields of health, work safety, building a safety culture, and building safe behavior at work.

**Keywords:** Human approach, worker, industry, covid-19.

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## INTRODUCTION

The development of the oil and gas industry in Indonesia during the COVID-19 pandemic underwent many significant changes. The spread of the COVID-19 pandemic which was increasingly widespread in early 2020, prompted the government to make various efforts to break the chain of the spread of covid 19.

Government Regulation (PP) Number 21 of 2020 concerning Large-Scale Social Restrictions (PSBB) in the Context of Accelerating Handling of the Corona Virus Disease 2019 (COVID-19).) has been set on March 31, 2020 (BPK RI,18/07/2020). The Government Regulation (PP) was then used as a reference for Regional Governments in implementing PSBB regulations in their respective regions, although before the Government Regulation was issued several regions had implemented PSBB (Hakim,18/07/2020). In addition to referring to Government Regulation Number 21 of 2020, each Regional Government also implements PSBB based on the development of the situation of the spread of COVID-19 in the regions, so that the implementation of PSBB in each region has a different validity period.

The PSBB regulations that have an impact on limiting community activities and the use of public transportation services then have an impact on the demand and supply of fuel oil (BBM), this then results in a decrease in profits obtained by the oil and gas industry. The impact of covid 19 on the oil and gas industry can be identified in the average price of crude oil in Indonesia. Based on the calculation of the Indonesia Crude Price (ICP) formula, it shows that in March 2020 the ICP experienced a price suppression per barrel which was US\$ 34.23. This figure shows a decrease of US\$ 22.38 per barrel from US\$ 56.61 in February 2020 (Jenderal et al., 2020). ICP formula shows crude oil prices fell after Large-Scale Social Restrictions.

Although the COVID-19 pandemic has impacted the oil and gas industry sector, investment in this sector is still considered quite attractive. The Indonesian government is also committed to maintaining investment in the energy and mineral resources sector. The number of investment opportunities in the oil and gas sector is also still large in value, which is around US\$ 117 billion for the next four years or 2024. The optimism of the oil and gas industry to continue to exist and maintain investment with a sufficiently large value also considers the amount of investment in 2019 which is US\$ 12.5 billion, of which it then increased in the following years, especially in the upstream sector of the oil and gas industry. In addition, the downstream sector of the oil and gas industry also has a relatively large investment value of US\$ 3,223.39 million. Based on the records of the Global Competitiveness Index from 2017 to 2018, investment in the oil and gas industry sector in Indonesia is ranked 36 out of 173 countries (Jenderal et al., 2020). This indicates that operational activities in the oil and gas industry will continue and production will continue to be optimized during the COVID-19 pandemic.

The oil and gas industry is a sector that provides the energy needed by various other sectors so that the operational activities of the oil and gas industry get permission to continue operating. Although the operations of the oil and gas

industry continue, the oil and gas industry is still required to comply with new rules as a form of adaptation to the COVID-19 pandemic situation, one of which is the regulation of the application of health protocols in the oil and gas industry. This is done as an effort to prevent the transmission of the COVID-19 virus and as a form of guarantee for the safety of workers or workers in the oil and gas industry. The Directorate General of Oil and Gas as one of the government agencies carries out several activities that are internal and external to prevent the spread of covid 19. One of these internal activities is to provide socialization about the risk of transmission of covid 19. In addition, the Ministry of Energy and Mineral Resources has also formed a Task Force for the Acceleration of Handling Covid 19. The Task Force team consists of employees within the Ministry of Energy and Mineral Resources (KESDM) and the Special Task Force for Oil and Gas (SKK Migas). Teams carry out tasks quickly, carefully, and in an integrated manner. The Covid 19 Task Force team also collaborates with organizational units within the Ministry of Energy and Mineral Resources and the Special Task Force for Oil and Gas. (Jenderal et al., 2020). Several forms of efforts to prevent the spread and transmission of COVID-19 infections carried out by the Ministry of Energy and Mineral Resources and the Special Task Force for Oil and Gas are also expected to be applied to oil and gas industry companies. This then requires supervision from the Ministry of Energy and Mineral Resources on the application of health protocol regulations in every oil and gas industry company.

Oil and gas industry workers are one of the parties most at risk for the transmission of covid 19. It was recorded that until July 2021 the number of workers in the upstream oil and gas industry infected with covid 19 was 21,456 workers, this information was informed directly by the Special Implementing Task Force. Upstream Oil and Gas Business Activities. Of the total cases, there were 20,833 cases of Covid 19 transmission among employees of Cooperation Contract Contractors (KKKS) and 623 employees of the Special Task Force for Oil and Gas (SKK Migas). Based on the total case data, it is known that 18,324 workers or 85.4% of cases recovered, consisting of 17,844 employees of Cooperation Contract Contractors (KKKS) and 480 employees of the Oil and Gas Special Task Force (SKK Migas). While the employees who are still being treated are 3,035 people or 14.1%, this number consists of 2,898 KKKS employees and 137 SKK Migas employees (Umah,19/07/2021).

The high number of cases of COVID-19 transmission in the oil and gas industry needs to be a major concern for the oil and gas industry to maintain the safety of its workers. In this case, the concern for worker safety is not only technical issues, operational activities of machine tools or industrial technology, but also work safety against the threat of the spread and transmission of COVID-19 in the

company's internal and external environment. oil and gas industry. . Based on data on workers infected with COVID-19, it is dominated by Cooperation Contract Contractors (KKKS). Many KKKS workers are engaged in oil and gas exploration and exploitation, in this case, the KKKS workers mostly handle engineering in the oil and gas industry. Based on the background of the problem, the authors are interested in identifying "The Human Approach in the Implementation of Worker Safety Health Protocols in Oil and Gas Industrial Engineering During the Covid 19 Pandemic".

### **METHOD**

The author also as a researcher researches cases in the oil and gas industry operating in Indonesia during the covid 19 pandemic. The researcher uses a qualitative descriptive research method with the type of library research. Researchers in collecting research data use secondary data obtained from several publications of information and data published by the Directorate General of Oil and Gas, then there are publications from the Special Task Force for Oil and Gas (SKK Migas). These publications are in the form of journals and bulletins published during the COVID-19 pandemic. The information data published by the two institutions is considered to represent information related to the operational conditions of the oil and gas industry during the COVID-19 pandemic. In addition, researchers also collect information from several sources. sources of mass media and the results of previous research that can be accounted for the validity of the data.

Qualitative research methods have characteristics that are quite different from quantitative research methods. In principle, qualitative research methods prioritize the interpretation or meaning of social phenomena or cases being studied (Norman K. Denzin dan Yvonna S. Lincoln, 2009). In the focus of this research, researchers are more likely to interpret phenomena that occur in the operational activities of the oil and gas industry. Researchers limit this phenomenon to the work safety of the industry that is most easily infected by COVID-19 when carrying out operational activities in the internal and external environment of the oil and gas industry. The subject of this research is more focused on workers who operate in the engineering field of the oil and gas industry, the reason is that the number of workers who are most infected with covid 19 is workers who handle the field of operational engineering of the oil and gas industry to explore and exploit oil and gas resources.

The technique of checking the validity of the research data is done by using the source triangulation technique. As for the analysis of research data, researchers used data analysis techniques from Miles and Huberman (1984). The steps of data

analysis are (1) Data collection, (2) Data reduction, (3) Data presentation, (4) Conclusion: Drawing/verifying (Sugiyono, 2013). Researchers conducted data analysis during data mining research took place. In this case, the researcher analyzes the information data obtained from secondary data information sources, namely journals, bulletins, research results that have been in seminars, and mass media that present the latest information.

## **RESULT AND DISCUSSION**

### **Oil and Gas Industry Operation and Price Fluctuations Commodities During Covid 19**

Operational activities of the oil and gas industry in Indonesia during the COVID-19 pandemic continued, despite a decline in industrial operational activities. The decline in oil and gas industry operational activities during the COVID-19 period was caused by several inhibiting factors, namely: First, changes in the number of personnel or industrial workers who tend to be less active, this is a result of the barriers to mobilization experienced by workers to come to industrial locations. which is getting harder. Industrial workers must meet the licensing requirements to be able to come to industrial locations and pay attention to the quarantine time that has been set in each region. Second, industrial equipment used for operational activities tends to experience delays in delivery, this is due to the longer travel time of material transportation, especially materials imported from abroad. Third, related to regulatory changes that must be applied in the industry which have an impact on equipment/facility performance inspections that are taking longer due to the policy of implementing Work From Home (WFH), then bringing in workers from outside the region and even from abroad will be increasingly difficult to obtain because permits business trips are also getting more difficult. The obstacles faced by the oil and gas industry also have an impact on the decline in oil prices (SKK Migas, 2020).

The performance of the upstream oil and gas industry since 2020 during the COVID-19 pandemic has seen some operational activities experiencing delays. These include: (1) the postponement of the planned closure of the Banyu Urip and Tangguh fields, (2) the postponement of drilling, rework, and well maintenance activities in the Malacca Strait EMP; single Mont'dor; Medco Rimau, Natuna, and South Sumatra; Seagull Resources, Petrochina; POD Arung Nowra; etc. Then the COVID-19 pandemic has the potential to delay the Merakes project which is onstream until 2021, and several projects that will be onstream in 2020, a reduction in the 2020 lifting outlook from 755,000 bopd (State Budget Target) to 714,000 bopd for oil and 6,670 MMscfd (State Budget Target) to 5,556 MMscfd for gas. In addition, the impact of the decline in oil and gas industry operations on

state revenues & Rec: Outlook Gross Revenue decreased from US\$ 32 billion to US\$ 17.8 billion (SKK Migas, 2020). The existence of operational delays in industrial activities and several performance programs seems to have a major impact on industrial production results, this can be seen from the internal side of the industry. On the external side, the industry also has a significant impact on the amount of supply and demand for oil and gas, including restrictions on the operating hours of public transportation, and restrictions on community activities in the economic field.

The impact of the COVID-19 pandemic situation on the decline in oil prices and the resulting profits has become a problem that has received the attention of many parties, both from the government and oil and gas industry companies. In the analysis of the surplus-value experienced by the oil and gas industry during the pandemic, it can be seen from two aspects, namely the value of commodities and prices. Using the theoretical perspective of Karl Marx states that the value of commodities is the total amount of labor time used to produce goods, in this context is producing oil and natural gas. While the price is the proportion between the demand and supply of commodities produced by the industry, the price is usually in the nominal form attached to the commodity, while the price of the commodity itself is related to the amount of demand and supply (Syukur, 2018).

The price of oil and gas commodities produced by the industry is also determined based on the proportion of demand and supply. Oil and gas prices which naturally can be formed based on the proportion of demand and supply become the main focus in fluctuations or fluctuations in commodity prices in the market. This fact is currently happening to oil and gas commodities circulating in the market. Conditions during the COVID-19 pandemic, oil prices fell from normal prices, the decline in prices was caused by the decline in consumer demand in the market, while oil production was still in optimal quantities.

Regarding the profits obtained by the industry, there is also a link between the value and price of the commodities produced by the industry. In Karl Marx's view, it is stated that the commodities that have been produced by industry are sold based on their original value, while the profits derived from the sale of commodities are based on their value or it can be said that the sale of commodities also takes into account the amount of labor time used. (Syukur, 2018). If you identify the profits obtained from the oil and gas sector, it can be seen from the sale of oil and gas then reduced by the amount of capital used for production, the capital is also related to the working time used in producing goods. While working time is directly related to the wages the company must pay to workers.

Adopting Karl Marx's thinking about production and consumption activities, Karl Marx explained that production is the starting point of economic reality, while



consumption is the starting point of its realization. Thus it can be concluded that value is determined from the level of production and is not suddenly determined through consumption activities. While related to the accumulation of capital, Karl Marx explained that commodities are a means to get money or big profits, in this case, the formula for capital accumulation is formed, namely "*Money – Commodity – Money*" (Syukur, 2018). In the context of the oil and gas industry, to obtain commodities there must be capital, namely capital generated from investors. When it has sufficient capital, it can be used to produce commodities, from exploration exploitation – production – to distribution. Then from the sale of commodities, the owners of the oil and gas industry get high profits.

Surplus value is the profit obtained by the owner of capital in the process of production and reproduction so that in this case the owner of capital can multiply his capital. Karl Marx also divided two types of capital, namely constant capital (tools and materials of production that do not change in value in production) and variable capital (labor which can experience changes in value in production). Karl Marx also distinguished between labor and labor force. Labor is a work activity for the owner of capital, while labor is the work capacity purchased by the owner of capital because he has worked and has given results for the work done (Syukur, 2018). In the context of the oil and gas industry, the workforce in question is workers or contractors who work for the owners of capital, while the workforce is workers who are ready to be contracted and workers who are passive temporarily and can then be re-contracted. . must be applied by the oil and gas industry during covid 19.

Several efforts have been made by the oil and gas industry to deal with difficult times during the COVID-19 pandemic, including: (1) Coordination with Cooperation Contract Contractors (KKKS) regarding the review of the agreed work plan for 2020, (2) Conducting a thorough assessment comprehensive review of various oil price options to maintain economic conditions on the ground, (3) evaluate the postponement of the shutdown plan, (4) coordinate with relevant stakeholders (Ministry of Law and Human Rights, Ministry of Foreign Affairs). Ministries and Regional Governments) to be able to exclude the mobilization of goods and personnel in the upstream oil and gas industry during the covid 19 pandemic, (5) Ensure that there are no layoffs in the oil and gas industry (SKK Migas, 2020). In principle, to survive in the COVID-19 pandemic situation, it is necessary to cooperate with the oil and gas industry with various parties.

### **The Risk of Working in the Engineering of Oil and Gas Industry and Work Values during Covid 19**

Workers in the engineering sector of the oil and gas industry have a significant vulnerability to being infected with covid 19. The work environment both in the internal industry and in the external environment of the oil and gas industry has a high enough vulnerability to the spread and transmission of covid 19. This is when you look at the operational field of the oil and gas industry, both the environment internal and external are interconnected and cannot be separated, starting from exploration, exploitation, production, to distribution, all these elements are interconnected. In addition, every operational activity must be carried out by several workers in one team. Oil and gas industry workers on average work in industrial locations and it are very difficult if the operational work is carried out in a Work From Home (WFH) manner. What Work From Home (WFH) can do is work that is administrative and operational in the field of information technology that works using the internet network.

Workers who work in industrial engineering who master heavy technology for oil and gas production will certainly be more relevant to work in industrial locations directly, so workers seek to obtain travel permits to work in the workplace. Facing the COVID-19 pandemic situation which is quite risky to cause the spread and transmission of covid 19 to workers, it is necessary to have an agreement from the Commitment Making Officer (PPK) with the labor provider. The agreement includes an agreement to continue working, but with the addition of equipment that functions to support health and prevent the spread of covid 19. In addition, employers are also entitled to receive payments according to the contract and receive appropriate compensation when working in dangerous situations during the covid-19 pandemic (Dirjen Migas, et al., 2020). The agreement is a form of responsibility of oil and gas industry companies to workers employed in COVID-19 emergencies.

If the COVID-19 pandemic situation has more of a major negative impact on the workers of the oil and gas industry and considering the regulations that have been imposed by the Regional Government which cannot be rejected, the work must be stopped, in addition, the contractors are required to obtain appropriate replacement costs. and appropriate for the demobilization of industrial workers (Dirjen Migas, et al., 2020). This step was taken to ensure the safety of oil and gas industry workers during the COVID-19 pandemic. The dispensation given to workers for demobilization is also very important to note, it also concerns the economic welfare of workers who are directly or indirectly affected by the COVID-19 pandemic situation. It is not only industrial companies that experience a decline in profits, but workers will also definitely get an impact in terms of their economic welfare so the nominal dispensation given to workers must also be appropriate and by the efforts of industrial workers.



Dalam konteks masyarakat pekerja di industri minyak dan gas selama pandemi COVID-19, memiliki relevansi dengan teori nilai kerja Karl Marx yang dikutip oleh Turner (1998) dan kemudian dikutip dalam buku yang ditulis oleh M. Syukur (2018), explained that the theory of work value can be divided into five main points, namely:

- a. The exchange rate of commodities can be affected by the quantity of labor, in this case, such as the hours worked by the workers, another term Marx calls simple average labor.
- b. Work skills generated by workers are accumulated as jobs multiplied.
- c. The value of a commodity may differ based on the availability of technology. Marx saw that the value of commodities is largely determined by the labor time used to produce commodities under normal production time.
- d. In the capitalist understanding, labor is a commodity that has an exchange value. Labor time is used to produce goods, and from it has the consequence of reproducing goods.
- e. Commodity fetishism can occur because public trust in the products it produces has attributes from a social aspect, so it can encourage interaction between people.

In the context of workers in the oil and gas industry during the COVID-19 pandemic, workers' working hours are under regulatory control from the industry and the central and local governments, the situation and conditions of the COVID-19 pandemic which is feared to pose a high risk for workers receive high attention in determining agreement to hire workers. In this case, it can be said that the working hours during the pandemic are uncertain, but the industry has determined the number of working hours for its workers not only by taking into account the production needs of goods, but also many things into consideration. especially about worker safety.

The work skills of contractors in the context of the oil and gas industry during the COVID-19 pandemic were also found to have accumulated as double jobs. New innovative strategies to optimize industrial operational activities and as an effort to reduce the impact of covid 19 are the work skills of workers (contractors). As for the availability of technology used for oil and gas production during the COVID-19 pandemic, many arrived late and even delayed arrivals, especially technology imported from abroad, this then had an impact on the number of working hours of workers (contractors) which increased. , then it affects the value of the commodity (oil and gas) itself.

Labor in the oil and gas industry sector can also be assessed as a commodity that has an exchange value. Labor providers (contractors) who are tied to industry owners also have an exchange rate, where the oil and gas industry can buy contractor services to work in the oil and gas industry. Even when there is a high risk that contractors have to face in carrying out industrial activities in the field, they must also be given appropriate dispensation or replacement costs. In addition, although oil and gas commodities have a significant impact on market demand, they are still in demand by consumers. Because consumers still have a high dependence on these two commodities and there is no other alternative energy.

### **Human Approach in the Implementing Health Protocols for Workers Safety**

Worker safety is one of the things that need to be considered by the organizers of the oil and gas industry. In principle, work safety has three main pillars, namely engineering work safety, work safety according to procedures, and work safety from human intervention. In the first pillar, namely engineering or operational safety, the safety of workers this first pillar focuses on safety during operational activities. The operational safety applied must be risk-based in operation. Several aspects that need to be implemented in operational safety are (1) Installation and equipment, (2) Safe work practices, (3) Change management, (4) Mechanical integration (design, construction, and maintenance), (5) Environmental management, including industrial health and hygiene management, (6) Contractor management, (7) Operational safety management and others (Ramli, 2011). Based on several aspects that need to be implemented in operational safety, efforts to prevent the spread and transmission of COVID-19 in the oil and gas industry are integrated into all these aspects.

The second pillar in efforts to maintain worker safety is the management system. In this election, the management system has a very important role in supporting the success of Occupational Safety and Health (K3) for industrial workers. In principle, the management system includes several elements, including policies, documentation, and controls. Then on the third pillar, namely the pillar of the human approach. This pillar of the human approach is most widely used to realize Occupational Safety and Health (K3) for workers in the industry (Ramli, 2011). There are several aspects of using the pillars of the human approach, including::

- a. Coaching and training
- b. Job competence
- c. Supervision (Occupational Safety and Health through controlling)
- d. Ergonomics (Human relations with work tools)
- e. Give attention and involvement in Occupational Health and Safety

- f. Building a safety culture
- g. Build safe behavior at work (Ramli, 2011).

Regarding the work safety of oil and gas industry workers, the Director of Oil and Gas Planning and Development urged contractors to form a COVID-19 prevention task force that can coordinate with the Directorate General of Oil and Gas, and other parties. The Task Forces are also encouraged to coordinate with local governments to the lowest level before the implementation of oil and gas industry operational activities in the field, such as when a natural gas distribution network for households is built (jargas). In addition, it is necessary to use health monitoring cards for industrial workers, check body temperature regularly, maintain distance between workers, disinfect site offices, workplaces in the field, and include rest areas for workers. Workers have responsibility for their respective health conditions and must report to the COVID-19 Prevention Task Force team if symptoms of COVID-19 transmission are found (Dirjen Migas, et al., 2020). The health protocol rules that have been set by the government are then used in the work culture of the oil and gas industry. The industry must socialize and control the implementation of health protocol regulations for workers.

Under normal conditions before the covid 19 pandemic, the management of Occupational Safety and Health and Environmental Protection (K3LL) in the oil and gas industry refers to the provisions of the Work Procedures Guidelines (PTK) 005/2018 regarding the management of K3LL in the upstream activities of the oil and gas industry. The Work Procedure Guidelines (CAR) divide the handling into three categories of conditions, namely: normal, urgent, emergency, and crises. Specifically, in handling covid 19, the Special Oil and Gas Task Force (SKK Migas) follows and adjusts to the health protocols that have been set by the government and the Ministry of Energy and Mineral Resources (ESDM) as an effort to prevent the spread of the coronavirus. covid 19 to workers (SKK Migas, 2020).

When information that the COVID-19 pandemic had spread in Indonesian territory, the screening of the oil and gas industry's operational activities was tightened with a circular issued to all workers in the industry. The circular contains restrictions on several things, such as Work From Home (WFH), social restrictions, reduction of face-to-face meetings, and repatriation of workers who have symptoms of being infected with COVID-19, such as fever and cough. As an effort to break the chain of the spread of COVID-19, the Work From Home (WFH) policy was implemented for all employees in the Special Task Force for Oil and Gas (SKK Migas). As for the upstream operational activities of the oil and gas industry, there are still employees who are directly employed in the field every day according to the picket schedule. This is given the need for optimization and supervision of upstream oil and gas operations. In addition, the Health Working Group consisting of doctors

and health experts in the upstream oil and gas industry maintains intense communication with Cooperation Contract Contractors (KKKS) who employ foreigners in the upstream oil and gas industry, this is done to prevent the spread and spread of covid 19 (SKK Migas, 2020).

## CONCLUSION

The COVID-19 pandemic has had a significant impact on the operational activities of the oil and gas industry, both upstream and downstream. This impact can be seen in several ways, including the decline in oil prices, restrictions on operating hours, to the Occupational Safety and Health (K3) of workers in the oil and gas industry. The existence of a fairly large impact on the oil and gas industry sector, the parties who oversee industrial operations carry out various strategic ways, including to continue to optimize oil and gas production, it is necessary to have investors and contractors who are willing to continue to work together in optimizing production. oil and gas, including the existence of a new strategy in the distribution of oil and gas production. Regarding Occupational Safety and Health (K3) for oil and gas industry workers, policymakers formed a Task Force (Satgas) for the oil and gas industry to handle the prevention of the spread and transmission of covid 19. In addition, several new regulations integrated with the implementation of health protocols have been implemented. in the work environment of the oil and gas industry during the covid 19 pandemic.

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