

RING OF SECURITY REVIEW ON THE VITAL OBJECTS OF THE ELECTRICITY SUBFIELD

¹Nurul Farida, ²Muhamad Syauqillah

^{1,2} Prodi Kajian Terorisme Sekolah Strategik dan Global (SKSG) Universitas Indonesia

ARTICLE INFO

Keywords :

security system,
ring of security,
critical infrastructure in the
electricity sub-sector

ABSTRACT

Radicalism and extremism are a real threats to the Indonesians. The phenomenon of terrorism that has occurred in Indonesia does not necessarily occur but is a slow phenomenon and is preceded by stages of intolerance and radicalism and results in acts of terror in society. One of the goals of this group is to create chaos in society. They carry out attacks on vital objects. Therefore, the vital object security system is important. This paper discusses the review of security systems with the ring of security concept in critical infrastructure in the electricity sub-sector. The purpose of this paper is to find out how the security system is in this vital object and analyze its weaknesses so that recommendations are obtained as suggestions and input in the security system.

Email :
nurulfarida535@gmail.com
muhamadsyauqillah@ui.ac.id

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1. INTRODUCTION

The phenomenon of terrorism that occurs in Indonesia does not necessarily occur but is a phenomenon that is slowly and preceded by the stages of intolerance and radicalism. Intolerance is defined as a form of intolerance towards other individuals or groups having opinions that are not the same as themselves. One form of intolerance that can be found in society is the rampant spread of hateful narratives given to groups or individuals. Furthermore, if this intolerant attitude increases, radicalism will arise and radicalism will encourage someone to commit acts of terror. (Ulama'i, 2019).

The impact of acts of terrorism usually causes casualties, minor injuries, serious injuries, disability, or death. In addition, victims of terrorism also experience trauma and psychic fear both for the victims themselves and the victims and those around them. Acts of terrorism also disrupt people's economic activities. Even attacks on vital objects inflict large material losses (Pramana, 2022)

The events of September 11, 2011 that attacked New York City, precisely the attack on the WTC (*World Trade Center*) building made major changes to terrorism even more dangerous and led us to think that the principle of terrorism exists threatening the peace and security of the world globally. The dynamics of the development of global terrorism affect the dynamics of the development of terrorism in Indonesia. After the Bali Bombing tragedy, Indonesia has always been hit by acts of terrorism. Among others, the Bali II bombings, the bombings at the JW Mariot Hotel and the Ritz Calton that killed 9 people. Terrorism incidents in the form of a Bomb Explosion at the Cathedral church in Makasar, South Sulawesi on March 28, 2021, and the *Lone wolf* action carried out by Zakiah Aini on March 31, 2021 with the scene at the Indonesian National Police Headquarters (Mabes Polri).

In the history of terrorism in Indonesia, attacks on vital objects have occurred at Soekarno-Hatta airport. As quoted from the Media Pikiran Rakyat page, on April 23, 2003 a bomb exploded in terminal II of Soekarno Hatta Airport and injured 10 passengers. There was a bomb blast at a *fast food* restaurant at 6:45 a.m. Western Indonesia Time After investigation, the explosion came from a pipe containing a *low explosive* (Gift, 2021)*explosive*. The next terror incident was a suicide bombing at a bus stop in Transjakarta in Kampung Melayu. There were two explosions. The total death toll was 5 people, namely two people who were perpetrators and three policemen who were guarding in the area The bomb explosion in Kampung Melayu occurred on May 24 (twenty-four) 2017 (Okenews, 2017). For foreign countries, a terrorism attack hit a vital object, namely an attack on an oil refinery in Erbil City, north of Iraq on May 1, 2022 (CNN New Zealand, 2022)

From several examples of these events, it proves that a vital object is one of the places that are the targets of terrorism attacks. A place in the category of vital objects according to Presidential Decree number 63 of 2004 National Vital Objects are areas / locations, buildings / installations and / or businesses that concern the lives of many people, state interests and / or strategic sources of state income.

Attacks on vital objects have a modus operandi against the background of ideology. Terrorist groups attacking vital objects aim to gain media attention and of course the attention of the public. The terror they carry out is expected to make people afraid and panic, and disrupt conditions in a community. For example, if an electrical substation is successfully attacked by terrorists, of course, it will affect the distribution of electricity. Attacks on electrical installations/ companies can lead to *black outs*.

Black Out is an event of simultaneous power outages in a large area. The electricity *black out* incident that occurred in Indonesia on August 4, 2019. The power blackout occurred from day to night and some even experienced power outages until the next day. This electric black out disrupts community activities. We can imagine that suddenly terrorists rushed to the centers of electrical installations and there would be a *black out* as told above. Chaos is bound to happen. Security disturbances arise as a result of chaos in society. The distribution of electricity has stopped and of course will paralyze activities in the community. For example, banking will be paralyzed, offices will be paralyzed, the Lisrik Fire System will become stagnant, people cannot do activities unable to watch TV, cannot communicate, supermarket transactions are disrupted, industri places, schools and shops will be disrupted. In other words, when the supply of electrical energy is disrupted, it will also interfere with community activities, especially activities based on digital systems. For example, online motorcycle taxis, KRL, MRT. Furthermore, power outages will disrupt digital-based economic activities, such as in supermarkets and the paralysis of automated teller machines (ATMs). Electricity is a very vital source of energy for human life (Kompas.com, 2010)

Vital objects in Indonesia are not removed from the potential for harassment by Indonesian terrorist groups have rules related to Standard *Operating Procedures* (SOP) for Securing Vital Objects and Regulations of the National Countermeasures Agency Terrorism on Guidelines for the protection of Facilities and Infrastructure of Strategic Vital Objects and Public facilities in the Prevention of non-Criminal Terrorism. Acts of crime and terrorism are very likely to attack national vital objects. This is a concern for us to be more vigilant and we are required to carry out security on these vital objects. Given the possibility of attacking vital objects by terrorist groups, security management is important because acts of violence, vandalism, and terrorism often occur around the world, of course, it also has the potential to happen in Indonesia

2. METHOD

In this study using a descriptive qualitative method, with a primary data collection method with an interview with one of the employees and security officers (security and security coordinator) at a vital object of the electricity subfield in the Jakarta area. We do primary data collection by datang directly objectvital it. The stages of research that we do are the author coming to the research site, then conducting interviews with the speakers, observing the area of vital objects in the field of electricity and documenting activities.

for secondary data the author takes data from journals, books and the internet. The formulation of the problem from this study is how the security system in the area of vital objects of the electricity subfield. The purpose of this study is to find out how the security system in the vital objects of the electricity subfield is analyzed with the concept of *ring of security* and provide input or recommendations.

3. RESULT AND DISCUSSION

A. Company Profile

The vital object of this electricity subfield is managed by a limited liability company which is one of the State-Owned Enterprises. Its task is to provide electricity supply in Indonesia. In the 19th century several Dutch sugar and tea companies/factories established power plants. Then when Indonesia fell into the hands of Japan, the management of this power plant also turned to the hands of the Japanese. After Japan surrendered to the Allies, the youths and electricity workers went to President Sukarno and proposed the idea of forming an Electricity and Gas Office. Furthermore, on January 1, 1961, the Electricity and Gas Office changed to BPU-PLN (General Leadership Agency of the State Electricity Company). Furthermore, in 1972 in accordance with Government Regulation No. 18, the status of the State Electricity Company (PLN) was established as a State Electricity General Company. (web.pln.co.id, 2023) The vital object area of the electricity subfield supplies electricity to the DKI Jakarta and Banten areas. The area is divided from several substations. This substation is an electrical installation that has a function to reduce the voltage of the Substation in Cawang, there are two types, namely Substations that use air insulation called conventional substations and GIS Substations (Gas Insulated Substation or Gas Insulated Switchgear) which use SF6 gas as an insulator (Wahyono, 2020)

This area is included in the category of national vital objects in the electricity subfield based on the Decree of the Minister of Energy and Mineral Resources of the Republic of Indonesia Number 159.K / 90 /

MEN / 2020 concerning Amendments to the Decree of the Minister of Energy and Mineral Resources on National Vital Objects of Energy and Mineral Resources.



Figure 1. Signpost that is a national vital object



Figure 2. West entrance



Figure 3. East entrance

B. Concept/Theory yang Used

Handiman (2010) security is a state that provides security from all potential crimes so that people get security, freedom from fear, anxiety, indecision, and get a sense of safety. Humans need security in

residential houses (housing complexes), security in the work environment, security on the way from home to work or public places, and security in places to store valuables.

a. Crime

According to the *National Crime Prevention Council* (2003), crime is a social problem in our society that affects thousands of people's lives every year. Serious crimes against people and property generate considerable fear within society. Crimes such as theft, burglary, rape and murder are serious threats to public safety. The resulting fear of evil itself can limit people's freedom of movement and prevent them from participating fully in society. In particular, some groups of people are more prone to crime and fear of crime, for example, the elderly, women, the elderly, adolescents, etc.

Various strategies were developed in order to combat complex crime problems. Various strategies were developed to design the environment to prevent crime from occurring. In designing an environment, architectural techniques and regional development are needed to create a sense of security in the community. A variety of different strategies are needed to deal with complex crime problems and minimize the fear of crime.

Society has turned to the police and the justice system to protect them from criminals and lawlessness. The indifference of the general public to self-protection arises mainly from the lack of knowledge about the means of protection. People think that they need additional costs to hire security services.

b. Security Unit (Security Guard)

Security in an area of industry and non-industry is carried out by other than the military, which is what we call a security unit (security guard). A security guard is a person (non-military element) who is in charge of securing an area. The legal basis related to the Security Unit (security guard) is Perka Polri No. 24 Yr. 2007 concerning the security management system of organizations, companies and or government agencies.

"Security guard is a unit or group of officers formed by agencies / business entities to carry out security in order to organize self-defense security in their work environment"

So based on the Perka Polri we can conclude that the security unit (security guard) is a form of community-based, *non-profit-based* security management system carried out by other than the TNI to serve the community, its task is to carry out security in business or industrial premises. In order to improve the ability of the security forces, it is necessary to develop the capacity of security personnel through training and training.

c. Risk management

Risk management is a way of managing hazards and risks by understanding and identifying threats and vulnerabilities of threats to a crime. Risk management will provide input on security improvements and the development of security plans. The stages in risk management are identifying threats, identifying what is needed for security and identifying measures to reduce risk. (NaCTSO, 2017)

In the first, the stage of identifying threats aims to understand the intentions and abilities of criminals. We must know the developments about the acts of terrorism that occur in the media, what is interesting to be targeted by them, study and make procedures for handling terrorism attacks, what strategic locations interest them in committing crimes, study plans, technical expertise and threat levels. (NaCTSO, 2017)

The second stage, identifying vulnerabilities and determining what is needed to carry out protection. A certain place or person is said to be vulnerable to being a target of terrorism when it has more appeal to terrorist groups. Target – a potential target of attracting terrorists to commit crimes.

- 1.) The target people, in Indonesia, the main targets of terrorists are state officials, TNI/Polri law enforcement officers and people who are different from them. They are considered infidels who run the thagut system so they deserve to be killed.
- 2.) Physical targets, buildings that are vulnerable to attack by terrorists, for example, government offices, offices of ministries and institutions, police headquarters, hotel facilities, vital objects, houses of worship or entertainment venues. This is because the places are places where infidels must be exterminated. Furthermore, vital objects also have the potential to be attacked because if they succeed in attacking vital objects, it will cause chaos and fear of the community, this is part of the purpose of their action.
- 3.) Non-physical targets in the form of electronic and non-electronic data

After knowing the vulnerability in the above, we can develop a strategy for how to protect and rescue flow in the event of an attack. From these things we can anticipate and how to overcome if a problem arises. Considering the level of vulnerability, for example, by limiting access to a place, limiting access in

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and out of vehicles, tighter security on certain documents, tighter security at certain times, increasing vigilance when you see suspicious things. The third stage is to determine and identify measures to reduce risks. An integrated approach to security is essential, encompassing thinking about physical security, information security and personnel security (i.e. good hiring and employment practices. The fourth stage is to review the existing security system. (NaCTSO, 2017)

d. Ring Of Security Concept

The success of a crime is influenced by the maturity of the planning carried out by the evildoer. Crime prevention efforts need to be planned from the beginning of building planning. The steps that need to be taken to carry out *Surveillance Detection* activities are: (NaCTSO, 2017)

1. *Physical security*
 - a. Building design, in building a building it is necessary to make a strong and sturdy building design. To increase security, the construction of a place needs to be equipped with barriers in the form of fences. In addition, it is also necessary to choose materials that are of good strength. Buildings are made with strong and sturdy construction.
 - b. *Approximately Uncontrolled Areas* are possible areas that are not controlled by surveillance cameras or escape the observation of security personnel, such as toilets.
 - c. *Portals Vehicles & Pedestrians*, i.e. access to get in and out for motor vehicles, cars and for pedestrians
 - d. *Barriers* or barriers can be barbed fences, high parapets, barbed wire, portals and so on that can hinder a person's entry into a territory.
 - e. *Access by uncleared personnel* is access to in and out of people who are not employees, for example a drink delivery person
2. *Technical Security* includes three things, namely: a) whether or not there are security officers who have the responsibility of securing a place, whether the number is sufficient or not, what expertise possessed, b) equipment used, e.g. CCTV, bats, watchtowers, alarms, handitakly, and alarms, 3) Security techniques and procedures focus on how the system Supervision carried out by the security unit in an area, how is the procedure for people coming and going from an area.
3. *Information Security*, is the outermost part of a security system which is a place where activities or activities take place that are important info for security in an area, including regular or irregular activities and also mass media news (internet, newspapers, television)

e. Route Analysis

An approach that is applied in doing analisa and determining the path so that people feel safe and secure when traveling is called a trip analysis (Route Analysis). Route analysis has three components, namely

- 1) *Area Predictable Travel (APT)* is a travel path used by people from one place to another, for example from home to work and vice versa from office to home. In traveling, safety will be more guaranteed if you use various lanes or do not pass through the same route at the same time during continuous. A safe path is a short (fast) path and the road is not damaged.
- 2) *Attack site*, is a jalur that is always passed by a person when traveling to and from a place. The so-called *attack side* is an area close to the entrance or exit.
- 3) *Critical area (CA)* is a critical area passed by a person who is likely to have a crime attack.

f. Results of Observation and Discussion

A crime can occur due to the intention of the perpetrator, the opportunity, the ability possessed by the perpetrator, and a poor security system. Othercrimes and terrorism, more generally, are rational people regardless of the methods and tactics used. They commit crimes because they want to achieve a certain goal. In the case of theft or robbery, what is to be obtained is financial gain. Whereas in the case of terrorism, what is to be achieved is political change or the application of a certain ideology (Pape, 2005) Based on this, an approach in criminology known as a situational approach, suggests that the way to prevent crime from occurring is to deter the perpetrators by making the perception of harm greater than the advantage of committing a crime (Hsu & Newman, 2016). According to the situational approach, this can be done by modifying an environment and existing opportunities (Clarke, 1995). In recent times design professionals have begun to recognize crime as a man-made danger that can be resisted through the *Ring of Security* approach being one of the security strategies that can be applied in the security of vital objects. The success of a security system depends on three things, namely physical security, *Technical Security*, and *Information security*.

The author paid a visit to the two PLN offices. The results of observations and interviews with three speakers obtained the following data.

Table 1. Physical Security

No	Aspects	Observations
1	building	Design of office buildings in the form of walls
2	CCTV	There are CCTV in various places, namely at the security guard post, at the entrance and exit, in the substation area, canteen, in the office space For toilets are areas that are not covered by CCTV
3	Security Guard Post	For the number of CCTV, the source does not know exactly how many. There are 2 security guard posts guarding the entrance and exit to the two PLN offices And there are 2 guard posts near the entrance to the substation and to the GIS substation
4	Fence	There is a fence surrounding this complex, the first fence is half a meter high, then there is another fence that is 3 meters high made of wire
5	Distance from highway	Along the highway, there is a sidewalk, then there is a short fence (half a meter), then there is a ditch, a vacant lot of 3 meters, a fence 3 meters high, then from the high fence to the substation parent there is a distance of 8 meters
6	gate	In this complex there are 2 gates,
7	In-and-out access	Access in and out of employees, guests, and vendors is through the gate. The gate is made of metal 2 meters high, then there is also a large portal for passing cars and a small portal for passing motorcyclists and pedestrians to pass
8	Guest Parking	For guests who bring vehicles, a park ir is provided near the security guard post
9	Substation region	The territory of the Substation is given a fence around the perimeter, a 4-meter-high fence is made of wire, the upper part has its barbed wire Access to the substation is always locked. Near the door ad a security guard post. To enter the substation area, you must show a <i>working permit</i> document and visitors are prohibited from entering this area, unless they have obtained permission and are given a red ID Card
10	Health protocols	Guests are checked for their body temperature, then asked to wash their hands or use a hand sanitizer, asked to show a negative antigen certificate if they are going to visit inside
11	Lighting	It is in accordance with the rules of the Ministry of Health Namely for office buildings with a minimum of 200 flux and for substation areas at least 100 flux
12	Fire	Extinguisher in the form of type C fire extinguisher At the stapam post there is 1 light fire extinguisher (APAR), in the office space there is also a light fire extinguisher (APAR) but the number is unknown No hydrant

The existence of a physical security system is expected to be an access *control* that aims to make it difficult to access crime targets and create a risk perception for criminals designed to reduce the chances of crime. This access control focuses on entry and exit points to buildings, parks, parking lots, and neighborhoods. Closing some entrances and opening others in strategic locations is one way to do it. This control aims to tighten *entry*, *exit* and *screening* paths and can be done in a natural way with spatial, mechanical definitions with fences, windows to organized consisting of security officers. crime. The existence of b superior – bphysical *security* is a barrier and can make it difficult for the perpetrator to commit his crimes.

1. *Technical Security*

- a) The security unit (security guard) is an *outsourced* employee of PT AMP. In the complex there are 4 security guard posts, each post is guarded by 3 security guards. Security guards are in charge with a 3-shift system, namely the first shift at 06.00 - 14.00, the second shift at 14.00 - 22.00 and the third shift at 22.00 - 06.00. The security guard is equipped with a batting device. Security forces (security guards) have received training in riot management, fire, natural disaster emergency response. These security guards are under the coordinator of one TNI personnel. The existence of security units and these tools is part of traditional security in the prevention of a crime (Crowe, 1991).

In carrying out its duties, the security unit has Standard Operating Procedures, namely:

1. One squad is 3 people, and one of them is appointed as the guard squad leader.
 2. Each shift change performs a handover of an activity report containing a security state report.
 3. Mandatory identity checks on guests
 4. Immediately report incidents deemed suspicious or threats to the guard coordinator (there is one personnel from the TNI)
 5. Monitoring the development of the situation and making reports clearly, completely, and easily understood based on the chronology of events.
- b) Security is carried out for 24 hours and is also assisted by the presence of CCTV at various angles. The presence of CCTV makes us feel like we are being watched continuously. The existence of supervisors (CCTV) who never sleep finally makes potential criminals daunted and undoes their intention to take action. In some types of crimes, the application of CCTV has indeed proven to be effective. Ratcliffe, Taniguchi, and Taylor in their research on the impact of CCTV on crime rates found that the installation of CCTV in Philadelphia succeeded in reducing the general crime rate by 13%. Although the area affected by camera monitoring has decreased the crime rate, it is not with areas that are out of range. (Ratcliffe, Taniguchi, & Taylor, 2009)ⁱ

Gill and Spriggs in their assessment of the effectiveness of CCTV stated that the impact of CCTV is most felt by crimes against vehicles. The installation of CCTV in the vehicle parking area led to a very significant decrease in the number of motor vehicle thefts. However, Gill cautions, that the impact is not necessarily felt by the location and other types of crime given that the systems used will be very different. Similar reminders were also given by Stutzer and Zehnder through their research into the use of CCTV in counter-terrorism efforts. According to them, CCTV has indeed proven effective in preventing conventional crime. But that doesn't apply to the terrorists' trepidation. It was found that the effect of CCTV in the prevention of acts of terror was very small. The reason is because the prevention of terrorism perpetrators who are already on the ground is very difficult if only through camera surveillance. Then, it is very likely that the existence of CCTV will actually be used by the perpetrators to expand the publicity of the action. However, Stutzer and Zehnder added that the benefits of CCTV remain, especially in the post-terror investigation stage and the tracing of witnesses and evidence, or in other words in the forensic aspect. (Gill & Spriggs, 2005)ⁱⁱ (Stutzer & Zehnder, 2013)

- c) For incoming guests, an inspection is carried out according to *Standard Operating Procedures (SOP)*. The procedure for guests is to enter, be checked for body temperature, be directed to wash their hands or use a hand sanitizer, then ask for origin and destination, show a card personal identification, then checked luggage, filled out the guest book, identification card exchanged for Guest ID Card. There are two types of Guest ID Card cards, yes it is red for visits to the electricity substation area and yellow for visits to offices. For visits to the electricity substation area, it is accompanied by files related to licensing to the electricity substation area.

2. Information Security

If we look at its location, this PLN office complex is located in an area with quite heavy traffic and even tends to be congested at certain hours. It is located on the side of the highway, there are sidewalks along the road, the condition of the fence is not closed so that the substation is visible from the highway. In terms of security, this makes it easier for criminals to carry out eye eye activities. Perpetrators can map targets by walking along the sidewalk, or riding motorcycles and riding cars because the atmosphere there is very crowded, criminals can disguise themselves by mingling with lain riders.

Furthermore, based on the information we have obtained that at certain moments the guard is increased with the help of personnel from the TNI, namely at vulnerable times, for example before the announcement elections (or regional elections), when there are ASEAN GAMES matches, during Eid al-Fitr, during Christmas and New Year. The purpose of this additional personnel is expected to increase security from external interference. Anticipation of terrorist attacks can be done by improving security systems. Enhanced safety systems are security concerns, recognizing terrorist activities when conducting surveys, updates on issues that trigger terrorist attacks and objects – objects being targets of threats, it takes preparedness and increased public awareness to deal with terrorism by increasing layered defenses. Then, work with law enforcement officials and security forces to participate in realistic training on terrorism scenarios, and conduct communication education to the public about responding, fostering a culture of preparedness and resilience (Whitehouse.gov, 2018).

Mathew (2013) states that security will increase if there is good management of *access control* and layered defense. This access control means that there are restrictions on people entering an area. In this area of vital objects of the energy field, there are already restrictions on the entry and exit of people in the

territory. Physical security technology is in the form of technology in terms of lockdown. It can be in the form of conventional keys and padlocks or in the form of *keypads* or swipe cards, door locks, barriers, pengobang in the form of walls, fences, doors, and gates, alarm, 1 ampu and surveillance cameras (CCTV). As for the guest, the supervision or restriction is carried out with the visitor's iD card, from this ID Card will be a sign that he is a guest not an employee so that needs to be watched more closely.

Metthews (2013). stating about a second spec i.e. layered pertahanan is one of the efforts to improve security. Layered defense has three principles: broadness, depth and deterrence. This means that layered security makes security more widespread, Good prevention will increase security, prevention can minimize losses that occur from the act of a crime. Meanwhile, some things that can cause the emergence of a limitation of physical security are the chosen technique, the combination of several theories, time to be ineffective, bad weather, feelings of complacency, surveillance sometimes interferes with a person's privacy, and the presence of disrespect from some people who think the security system makes things complicated. Layered security is already used in securing vital objects of the electricity field. The first security is at the masuk door which is guarded by the security unit and to be able to enter the substation must go through one more door which is also guarded by security personnel. Security entering the office building is also through layered guarding, namely the front gate equipped with a portal and guarded by a security unit (security guard) and to enter the The workspace uses an electric access card in each employee.

If it is connected with the theory of *route analysis*, what is meant by *an attack site* is the path traveled by employees from their respective homes to the office. And the most potential area as *an attack site* is at the gate. Here it is very possible for criminals to carry out their actions. In addition, during office hours and office hours, activities at the gate are getting more crowded. Security guards must be more vigilant, because it is very likely that the perpetrator of the crime committed his crime during rush hour. Namely in the morning when the time comes to the office at 07.00-08.30 and in the afternoon when the office hours are 16.00 – 17.30.

From the security review, the targets of criminals are human targets and targets of vital objects, namely electrical substations. The distance between the front gate and the office area is about 50 m, while the distance of the substation from the outer fence is 20 m. The existence of physical restrictions in the form of portals, security guards, CCTV and the distance of targets that do not reach the highway is expected to reduce the chances of crime because the perpetrators cannot immediately touching to the target.

Drone attack

The threat of drone attacks on vital objects is real. An example is the attack on a vital object of the Aramco company's oil refinery facility in Saudi Arabia that resulted in fires at the Khurais and Abqaid refineries (CNN New Zealand, 2019). In Indonesia, attacks on vital objects using drones have never happened. But we still have to be aware of this threat. Drones are feared to be a means of delivering bombs. Drones & cameras can be used for spying activities (*espionage*). Based on Government Regulation Number 4 of 2018 concerning The Security of Airspace of the Republic of Indonesia, the area of vital objects of electricity is a *prohibited area*. The operation of *drones* is basically prohibited in the vital areas of electricity.

Mitigation measures against drone attacks are:

1. Banning the use of *drones* in areas of national vital objects of electricity
2. Conduct periodic checks of the area with the aim that there are no *drones* in the area of national vital objects.
3. Security officers carry out surveillance of the area, if there is a drone flying in the area, the security officer will take action to lower the *drone*. The tool used is a *jammer*. The *jammer* will randomize the frequency of the *drone's* signal so that the drone can no longer be controlled by the drone owner and can take over control of the *drone*.
4. Socialize to employees about the prohibition of drone use and increase *employee awareness*, if they see a *drone* passing by to immediately report to security officers.
5. If the *drone* is indicated to be carrying a bomb, the handling is the same as the handling of the bomb. The management of national vital objects reports to the TNI in order to get a more comprehensive assessment. The steps to deal with the bomb threat begin with localizing the location, then if there is really a bomb it will be defused, if it has exploded then the next process is the process of establishing the *status quo* for avoiding any aftershocks that could cause casualties again.

Based on the concept of Ring of Security, security in vital objects of electricity includes aspects of : 1) *physical security*, having an anti-drone device called a jammer, 2) *technical security aspects*, areas of vital objects of electricity apply the prohibition of the use of *drones* and coordinating with the Ministry of Transportation/ Air Transportation Service and the local Kohanudnas (National Air Defense Command) regarding the ban on operating drones in restricted airspace in over / at the location of the vital objects of

the electricity subfield and 3) aspects of *information security*, the management of the vital objects of the electricity subfield collaborates with the Air Force to provide socialization security threats due to the use of drones to employees.

In the field of mitigating the threat of drone use, the managers of national vital objects of the electricity subfield have begun to make the drone threat one of the possible terrorism threats. However, they do not yet have Standard Operating Procedures (SOPs) related to the prevention of acts of terrorism using drones / Unmanned Aerial Vehicles (UAVs). Therefore, it is important to immediately formulate and compile the SOP. Drone can be used as a means of collecting info from survey technology so that there needs to be regulations regarding the privacy context and it is necessary to control the frequency of drones to prevent *drones* which goes in and out of the national vital object area. *Drones* passing without permission will be subject to strict action in the form of lowering or vandalizing the *drone*.

Cyberattacks

Data from the State Cyber and Password Agency, April 2022 recorded that there have been 100 million cases of cyberattacks in Indonesia. Cyberattacks can attack a system at any time. Therefore, all Electronic System Operators are expected to improve system protection and handling of cyberattacks. (Kominfo, 2022) Prevention of cyber *attacks* is carried out by managing information technology infrastructure on company installations / networks and servers and managing security (*security patching*) information technology infrastructure in the company's installation/network and server.

Starting April 21, 2020, the company has carried out a transformation program with a digitalization agenda. This digitalization provides benefits, namely providing convenience to customers and the company. The benefits of digitization include : 1) making the process transparent, simple, and efficient, 2) maintenance easier and faster, 3) the system becoming more reliable, more thrifty and higher quality, and 4) realized budget efficiency. (PLN, 2022) However, this digitalization has the potential for cybersecurity disruptions, for example prone to data theft, *espionage*, information *control* takeover and *data sabotage*.

The cybersecurity mitigation measures taken are:

1) collaborating with BSSN in improving cyber. Both parties signed an MoU, which is expected to strengthen the security of the digital system being developed so that national energy security is realized. With this collaboration, BSSN can optimize its main task to provide its main task of providing protection of information infrastructure (cyber field) on national vital objects. This is stated in Presidential Regulation No. 82 of 2022 concerning the protection of vital object infrastructure. This collaboration is expected to strengthen cybersecurity so as to minimize cyber threats.

2) have a special team tasked with controlling cyberattacks. The task of this team is to detect and analyze as early as possible the devices identified by cyberattacks. Cybersecurity mitigation is carried out by means of early detection and analisa to possibly occur against devices identified as cyberattacks, then if suspicious things happen then Strict measures were taken by closing the company's internet and intranet networks. Furthermore, the eradication and restoration of cyber-attacked information technology systems is carried out. The IT team also has the task of updating company applications, especially strengthening the security system.

3) Individual prevention efforts are carried out by applying regulations to employees to maintain the confidentiality of passwords, employees must not share *passwords* with anyone. The use of the account and password must be by the person concerned. Employees who abuse will be sanctioned.

4) Organizational prevention efforts are carried out with the use of *firewalls* and the use of corporate intranets. *This firewall* has a function as the first bulwark from cyberattacks such as the duties of security officers (security guards). *This firewall* is configured with certain criteria according to the needs of the company. In the area of vital objects of the electricity subfield, a *firewall* has been installed to prevent the entry of viruses or break-ins. The company uses an intranet to minimize cyberattacks carried out over the internet.

Based on the concept of *Ring of Security*, the security system in this obvitnas includes:

1. *Physical security*, including employees who have the ability in the IT field who are in charge of monitoring cyberattacks.
2. *Technical security* includes early detection of devices suspected of being exposed to cyberattacks, the use of *firewalls* on corporate networks.
3. *Information security*, including socialization and orders to employees to maintain the confidentiality of *company passwords*, accounts, *emails* and applications.

4. CONCLUSION

The incident of attacking vital objects that have occurred in Indonesia opens our eyes that vital objects are one of the potential targets of criminals. Therefore, it is important to pay attention to the security system in the area of vital objects of the electricity subfield. With the *Ring of Security* review, the author concludes that this area already has good physical security, *technical security* and *information security* because it already has security elements that can hinder the occurrence of crime.

However, the author feels that the guarding at the entrance, especially the inspection of guests, is not optimal. In terms of controlling the control in and out of guests, security guards are not careful in checking guests. An example that I experienced myself was that the security guard did not check my identity. This is one of the weak points that can be exploited by criminals because they are not checked for their identity cards and are not checked for facial compatibility with identity cards.

The recommendation of the author is 1) the security guard should not easily believe the recognition of guests. Security guards must be more strict and meticulous in checking visitors (guests) so that there is no infiltration that can adversely affect the security of the national vital object complex of the electricity subfield, and 2) increase security In peak hours, namely in the morning during datang hours to the office at 07.00-08.30 and in the afternoon during office hours at 16.00 - 17.30, 3) Increase security when in times of office certain, for example during religious holidays, when there are important events (e.g. G20, PON, elections, presidential elections, etc.), 4) Formulating Standar Operasional Prosedur handling acts of terrorism that occur through cyberattacks and *drone* attacks, making SOPs is carried out by involving relevant ministries / agencies / agencies, 5) Increasing employee capacity in terms of handling terrorism attacks using *drones* and cyber attacks

REFERENCE

- [1] PT PLN, Center for Education and Training. (n.d.). *Handout on Working Permit*.
- [2] holmes, G. F. (1994). *Criminology: Theory, Research and Policy*. California: Wadsworth Publishing.
- [3] Priyanto, S. (2006). *Security and Terrorism Systems in Indonesia" Analysis of the 2000 Philippine Ambassador's Residence Bombing, the 2002 Bali Bombing, the JW Mariot Hotel Lobby Bol, 2003, and the 2004 Astralia Embassy Gate Bombing*. Depok: University of Indonesia.
- [4] Wuryandari, G. (2018). *Module on Preventing Terrorism in Indonesia*. Jakarta: LIPI and BNPT.
- [5] Author, T. (2013). *Substation Semester 3*. Jakarta: Ministry of Education and Culture of the Republic of Indonesia.
- [6] President of the Republic of Indonesia. (2004, August 5). Presidential Decree of the Republic of Indonesia Number 63 of 2004 concerning The Security of Vital Objects. Pp. 1-3.
- [7] Head of the National Counterterrorism Agency. (2020, November 16). REGULATION OF THE NATIONAL COUNTERTERRORISM AGENCY NUMBER 3 OF 2020 CONCERNING GUIDELINES FOR THE PROTECTION OF STRATEGIC VITAL OBJECT INFRASTRUCTURE AND PUBLIC FACILITIES IN THE PREVENTION OF TERRORISM CRIMES. Pp. 1-40.
- [8] Minister of Energy and Mineral Resources. (2020, September 3). About National Vital Objects of Energy and Mineral Resources. Pp. 1-70.
- [9] Indonesia, M. E. (2020, September 3). Decree of the Minister of Energy and Mineral Resources of the Republic of Indonesia Number: 159.K / 90 / Mem / 2020 Date: September 3, 2020 concerning Amendments to the Decree of the Minister of Energy and Mineral Resources Number 77 K / 90 / Mem / 2019 concerning National Vital Objects of the Field (Me. pp. 1-70.
- [10] Association of Chief Police Officer And Police Scotland. (2017). *Counter Terrorism Protective Security Advice Hotel and Restaurant*. London: National Crime Terrorism Security Office.
- [11] Honeywell Process Solution. (2012). www.hwill.co/ or. Retrieved 12 24, 2021, from www.honeywellprocess.com.
- [12] Fielding, A. H. (2015). Physical security for Industrial Assets: Growing threats emand an integrated strategy. *Intech, A Publication of the International Society of Automation*, 1-5.
- [13] Cameron Sumpter, d. (2019). Testing Transitions: Extremist Prisoners Re- Entering Indonesian Society. *Studies in Conflict & Terrorism*, 1-20.
- [14] Priyanto, S. (2020 Volume 7 Issue 1 Januarai-June). Preventing of Terrorism Attacks by Identifying Terroorist Activities. *International Journal of Smart Security Technologies*.
- [15] Mathewa, B. R. (2001). Physical Security: Controlled Access and layeredDefense. *Aurebach Publications*, 1-10.
- [16] Ratcliffe, J. H., Taniguchi, T., & Taylor, R. B. (2009). The Crime Reduction Effects of Public CCTV Cameras: A Multi-Method Spatial Approach. *Justice Quarterly*, 26(4), 743-770.
- [17] Gill, M., & Spriggs, A. (2005). *Assessing the Impact of CCTV*. London: Home Office Research, Development and Statistics Directorate.

- [18] Stutzer, A., & Zehnder, M. (2013). Is camera surveillance an effective measure of counterterrorism? *Defence and Peace Economics*, 24(1), 1-14.
- [19] Ulama'i, N. M. (2019). Narsi Hate Speech in Regional Head Elections (Pilkada). *Journal of Da'wah Science*, 85-106.
- [20] Gift, H. (2021, April 27). *Bagikanberita.com*. Retrieved from Grief Hits Indonesian Flight, Bomb Blast at Soekarno Hatta Airport, 10 People Injured on April 27, 2003: <https://bagikanberita.pikiran-rakyat.com/internasional/pr-681833817/duka-melanda-penerbangan-indonesia-ledakan-bom-di-bandara-soekarno-hatta-10-orang-terluka-di-27-april-2003>
- [21] Okenews. (2017, December 22). *nasional.okezone.com*. Retrieved from Flashback to the Kampung Melayu Bombing That Attracted the World's Attention: <https://nasional.okezone.com/read/2017/12/22/337/1834590/kilas-balik-bom-kampung-melayu-yang-menyedot-perhatian-dunia>
- [22] CNN Indonesia. (2022, May 02). *CNN Indonesia.com*. Retrieved from Oil Refinery in Iraq Exploded BY Missile Attack: <https://www.cnnindonesia.com/ekonomi/20220502104301-85-792300/kilang-minyak-di-irak-meledak-diserang-rudal>
- [23] Pramana, J. (2022). Criminological Aspects of Countering Terrorism in Indonesia. *Retentum Journal Volume 3 Number 1*, 26-34.
- [24] Kompas.com. (2010, December 2). *Kompas.com*. Retrieved from Kaleidoscope 2019 : Electric Blackout After 22 Years: <https://money.kompas.com/read/2019/12/02/074816026/kaleidoskop-2019-blackout-listrik-setelah-22-tahun?page=all>
- [25] web.pln.co.id. (2023, February 1). *web.pln.co.id*. Retrieved from Company Profile: <https://web.pln.co.id/tentang-kami/profil-perusahaan>
- [26] Wahyono, A. (2020). *Basic Electrical and Electronics*. Jakarta: Bumi Aksara.
- [27] CNN Indonesia. (2019, September 14). *cnnindonesia.com*. Retrieved from Drone Attack Burns Two Saudi Aramco Facilities: <https://www.cnnindonesia.com/internasional/20190914153530-120-430494/serangan-drone-bakar-dua-fasilitas-saudi-aramco>
- [28] Kominfo. (2022, September 22). *aptika.kominfo.go.id*. Retrieved from Anticipation Together Improve Systems and Prevent Cyberattacks: <https://aptika.kominfo.go.id/2022/09/antisipasi-bersama-tingkatkan-sistem-dan-cegah-serangan-siber/>
- [29] PLN. (2022, June 1). *web.pln.co.id*. Retrieved from Digitalization PLN Boosts Efficiency up to Rp 10.85 Trillion: <https://web.pln.co.id/media/2022/06/digitalisasi-pln-dorong-efisiensi-hingga-rp-1085-triliun> (n.d.).
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