

# EVALUATION OF EMERGENCY RESPONSE MANAGEMENT AT PT XYZ

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## ABSTRACT

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PT XYZ is engaged in the oil and gas refinery industry including major hazard installations which have a high risk of major accidents such as fires and explosions in fuel storage tanks. Implementation of emergency response management, including policies, procedures, organization, training and communication that is implemented is important to anticipate an emergency situation at the refinery caused by various factors. The emergency response management system needs to be evaluated in accordance with existing standards as an effort to see whether or not the implementation of emergency response management has been optimal and the readiness of the emergency response team. This research is an evaluative research that is descriptive qualitative in nature, aims to find out the description of emergency response management and its conformity with the NFPA 1600 standard, then to determine the readiness of the emergency response team if an emergency occurs, especially fire during the implementation of the Major Emergency Drill which refers to the FEMA Incident Action Planning Guide . The results showed that emergency response management at PT XYZ conformity with the NFPA 1600 standard was 89.73%.

**Keywords:** *NFPA 1600, Preparedness, Emergency Response, Major Emergency Drill, FEMA Incident Action Planning.*

## INTRODUCTION

The refinery industry is increasingly advanced and continues to develop into the petrochemical and natural gas era, on the other hand the greater the risks and potential hazards that can occur, the development of oil and gas management knowledge and technology should be accompanied by increased protection for workers and for all company assets [1]. In pasal 21 PP RI number 36 of 2004 concerning Downstream Oil and Gas Business Activities it is stated that Business Entities in carrying out Processing business activities are obliged to guarantee occupational safety and health and environmental management [2]. In the last 4 (four) years, namely 2019-2022, the PT. XYZ oil refinery has experienced several fires. The highest case occurred in 2021, in which year the PT. XYZ oil refinery experienced 3 fires with very large fires [3]. The high potential risk of fire and explosion in the tank, so preparedness is the key to safety in facing an emergency threat. In order to minimize these various impacts or losses, so that the impact does not escalate to a higher organizational level, companies need to have an Emergency Management System that includes management of emergency situations and crisis management in stages so that they are able to deal with and overcome these risks effectively and efficiently. One form of corporate responsibility is implementing an emergency response and preparedness program.

As an effort to see whether or not the implementation of emergency response management has been optimal and the readiness of the emergency response team, because the response in dealing with an emergency greatly determines the timeframe and success of the response process. With these existing problems, it is necessary to have improvements related to the management of PT XYZ's emergency response management system, therefore the author conducted a study regarding evaluation of emergency response management at PT XYZ. The limitation of the problem in this research is to discuss the evaluation of PT XYZ emergency response management system based on NFPA 1600. This study emphasizes the 6th parameter of NFPA 1600, namely the Parameters of Training & Tests, the object of this study focuses on the readiness of the emergency response team.

Different from the research that has been done, namely Assessing the level of fulfillment implementation of the active protection system active protection system, and emergency response against fire hazards fire. Then compared with the standard applicable reference applicable reference standards[4]. The purpose of this research is to find out the description of emergency response management assessed using 7 parameters in the NFPA 1600 standard as a form of handling emergencies at PT XYZ and to determine the readiness of PT XYZ's emergency response team when carrying out handling and handling if an emergency occurs, especially fire in the implementation Major Emergency Drill. It is hoped that later this research can become input for companies in implementing fire emergency response preparedness so that employees and workers can maximize performance.

## MATERIALS AND METHODS

### Materials

The data sources used to solve the problems in this study consist of two data sources, namely primary data and secondary data. primary and secondary data. The data obtained is in the form of factual information in accordance with the conditions that occur. happened. The data is obtained by means of observation, interviews and documentation. then company data related to Emergency Guidelines, Organizational Governance and related journals.

### Methods

The type of research used in this study is evaluative research which is qualitative descriptive in nature, namely analyzing the data obtained in the form of words and adding the results of processing the data in the form of numbers or statistical figures to quantify the data. Qualitative descriptive research methods focus on problems on the basis of facts which are carried out by observing or observing, interviewing, and studying documents. This evaluative study uses the NFPA 1600 standard to see the suitability of each element in the indicators or factual parameters with the NFPA 1600 standard. The assumptions used for each element have the same weight, elements that are suitable get a value of 1 while those that do not comply get a value of 0.

## RESULTS AND DISCUSSION

From the table below it can be seen that based on the 224 elements in NFPA 1600 the implementation of PT.XYZ's emergency response management system is 201 elements (89.73%) according to the standard and 23 elements (10.27%) are not in accordance with the NFPA 1600 standard. Two of the seven parameters 100% met the NFPA 1600 standard but five of them still had slight deficiencies that needed to be corrected but did not have a serious impact on the emergency response management system.

**Table 1.** Recapitulation of Compliance with Emergency Response of PT XYZ Based on NFPA 1600

No	Parameters	Indicator	Elements	Suitability			
				Suitable		Not suitable	
				Number of elements	%	Number of elements	%
1	<i>Program Management</i>	7	35	30	85,71	5	14,29
2	<i>Planning</i>	5	49	45	91,84	4	8,16
3	<i>Implementation</i>	10	83	75	90,36	8	9,64
4	<i>Execution</i>	3	4	4	100	0	0
5	<i>Training &amp; Education</i>	7	14	14	100	0	0
6	<i>Exercise &amp; Tests</i>	5	22	19	86,36	3	13,64
7	<i>Program Maintenance &amp; Improvement</i>	3	17	14	82,35	3	17,65
Amount		40	224	201	89,73	23	10,27

### A. Parameter Program Management

This parameter contains indicators and elements of top leadership commitment before moving on to the next parameter. It contains seven indicators and thirty-five elements of conformity. The elements in this parameter are 30 elements with a percentage of 85.71%, the non-conformance of elements in this parameter is 5 elements with a percentage of 14.29%. In realizing the company's commitment, the Company's HSSE policy is used as a reference in various decisions, the board of directors of PT XYZ is committed to prioritizing HSSE aspects in all company operations such as setting quality objectives, building workplaces and jobs. The main director of PT XYZ also emphasized that there are three aspects of excellence that PT XYZ employees need to adhere to, namely:

1. HSSE Excellence : Ensure that all business activities must be target oriented to achieve Zero Accident, On Quality, On Schedule, dan On Budget, refinery maintenance to environmental management in accordance with applicable regulations.
2. Operation Excellence : It is hoped that the projects will run smoothly On Time, On Budget, On Spesification, On Regulation and On Return.

- Business Excellence : The petrochemical refinery business, which was originally a cost-centered entity, is now mandated to become a profit-centered entity or a profit maker

### B. Parameter Planning

Planning is a standard parameter for companies to carry out risk and hazard assessments before developing procedures. Contains five indicators and forty-nine elements regarding Risk Assessment and Resource Needs Assessment. The suitability of the elements in this parameter is 45 elements with a percentage of 91.84%, the discrepancy in the planning parameters is 4 elements with a percentage of 8.16%. PT XYZ determines 4 (four) types of emergency categories and 16 scenarios of types of emergencies that have the potential to threaten business continuity, jeopardize the supply of fuel or non-fuel in the long term, have the potential to cause a large number of victims, as well as damage or serious threats to the environment or loss to local communities.

**Table 2.** Type of Emergency

CODE	SCENARIO	ON SITE	OFF SITE	BUSINESS CONTINUITY	CRISIS
SKD 1	Fire/Explosion in Refinery Area	√	-	√	√
SKD 2	Pipeline Fire	-	√	√	√
SKD 3	Fire/Explosion at SPM/Tanker Ship	-	√	√	√
SKD 4	Power Failure	√	-	√	√
SKD 5	Hazardous and Toxic Gas Leakage in Process Area	√	-	-	-
SKD 6	Oil/Hazardous and Toxic (B3) Spill in Process Area	√	-	-	-
SKD 7	Oil/Gas Leak in Pipeline	-	√	-	√
SKD 8	Spills of Oil/Hazardous and Toxic Materials (B3) in Water Areas	-	√	√	√
SKD 9	Security Threats (Sabotage/Demonstration/Kidnapping/Bomb Threats)	√	√	-	-
SKD 10	Office Area Fire	-	√	-	√
SKD 11	Natural Disaster	√	-	√	√
SKD 12	IT Failure	√	-	√	√
SKD 13	Disease Outbreak/Medical Emergency	√	√	√	√
SKD 14	Mass Poisoning	√	√	√	√
SKD 15	Radioactive	√	-	√	√
SKD 16	Apartment Fire	-	√	-	-

### C. Parameter Implementation

This parameter consists of 10 indicators with 83 indicator elements and elements that can be applied by entities in preparing emergency response programs. PT XYZ has complied with 75 elements with a percentage of 90.68%, but there are still 8 elements with a percentage of 9.32% which are still not appropriate. For emergency response plans and PT. XYZ's business continuity, refer to the Incident Action Planning Process scheme made by FEMA [5] developed according to the needs of the company, namely:

- Collaborative Planning Team: Preparation of the team if there is a request for assistance from the operating unit to the head office.
- Understand the Situation: There was an escalation and immediately activated the crisis center.
- Determine Goal & Objective: The Leader of the Response Organization provides direction
- Plan Development: Discuss strategies according to existing data.
- Plan Preparation, Review & Approval: Implement countermeasures.
- Implementation & Maintenance: Monitor the status of handling emergency conditions.

Companies also need to prepare an Emergency Operations Center as a central place to manage emergency response operations to recovery from an incident. PT XYZ divides into 3 places, namely:

- Executive Room: to provide direction, both business and strategic, in emergency response efforts.

2. Operation & Communication Room: to provide direction, both business and strategic, in emergency response efforts.
3. Conference Room: disseminating emergency news to the public related to explanations of incident cases related to issues that were developing at the time of the incident and/or after the incident

To coordinate the effective use of available resources, PT XYZ creates an organizational management structure that helps consistency, encourages efficiency and provides direction during incident response operations. In general, the description of the coordination structure in the emergency organizational system is divided into two, there is a difference in Deputy Leader if an emergency occurs in the Refinery Unit area and Brown Area Deputy Leader is placed by the operational director whereas if an emergency occurs in the Green Area then the Deputy Leader is placed by the director infrastructure project.

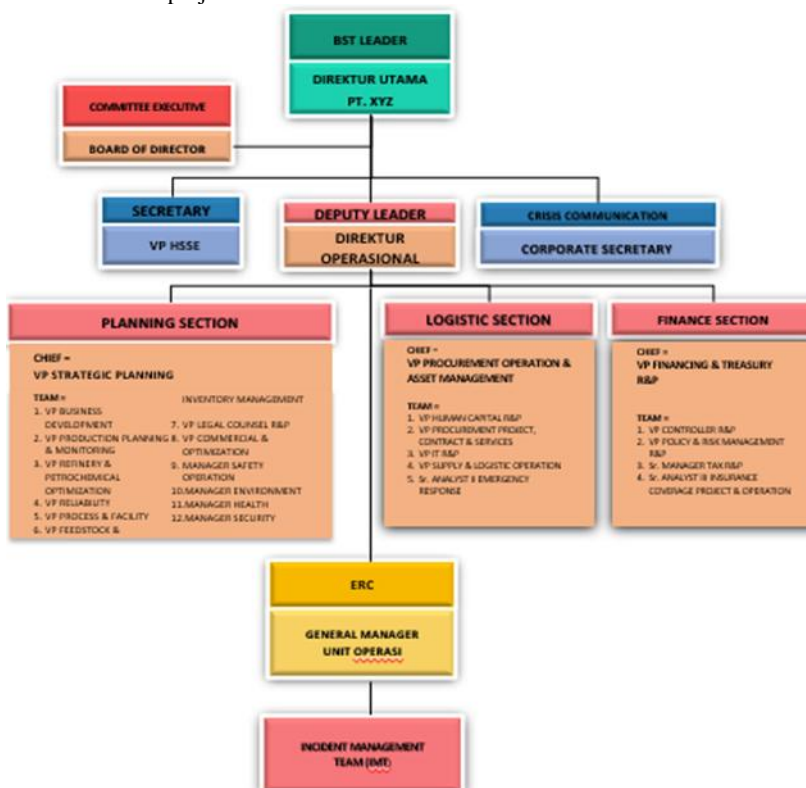


Figure 1. Emergency Response Organizational Structure Chart

Management of level 2 emergencies is centered at the Pusat Komando Pengendalian (PUSKODAL) where this PUSKODAL is the BST coordination center and reporting center during emergency control and response activities. This PUSKODAL must be equipped with reliable emergency monitoring infrastructure, so as to enable interaction with emergency handling authorities in the field. To support the smooth running of the Level 2 Emergency Management Team's work, PUSKODAL is equipped with adequate and up to date facilities and infrastructure so that response, communication, administration, and assistance deployment activities can take place effectively.

PUSKODAL room conditions must meet the needs when dealing with emergencies. Among them PUSKODAL must be safe from disasters, then the need for a good internet network and the availability of information processing equipment (radio, PC or computer, telephone, fax) to support communication between each member of the Emergency Response Team. Tables and chairs at PUSKODAL are equipped with microphones and organization tags. PUSKODAL must also be equipped with screens (projector, whiteboard, LCD/plasma screen, graphics) office equipment for documentation (notebook, pencil, pen, blackboard). Archives of emergency response documents need to be stored on a shelf/cabinet at PUSKODAL in the form of easily accessible hard files and soft files. These documents include: Standard emergency response forms, procedures for refinery unit or project activities, technical safety requirements, emergency plans and procedures, maps or maps, demographic data, evacuation plans, environmental data, emergency contact numbers.

#### D. Parameter Execution

This parameter is the incident identification process, then the stages of reporting and initial notification and activation of the emergency management system. Consisting of 3 indicators with 4 elements, PT XYZ on this parameter has met 100% compliance, where procedures have been established for initial reporting of an incident or situation and protocols have been established for warnings and notifications. During an emergency situation analysis

is also carried out properly so that the activation of the emergency control center either virtually or directly can coordinate with the incident command and other authorities to respond quickly. PT XYZ determines the level of emergency is divided into 3 categories namely:

1. Level I: occur at the location of the operating unit/project where these conditions can still be handled by ERT and IMT
2. Level II: emergencies that occur cannot be handled so that central assistance is needed in terms of controlling business operational activities by BST
3. Level III: an emergency that occurs cannot be handled even though it has been controlled by BST, it requires higher coordination, namely CMT

After an incident occurs, the highest leadership at the ERC Operations Unit level and BST Leader (according to the level of the incident that occurred) will receive the incident report and will assess the situation and make the necessary notifications to activate the Response Team using the action plan approach as follows:

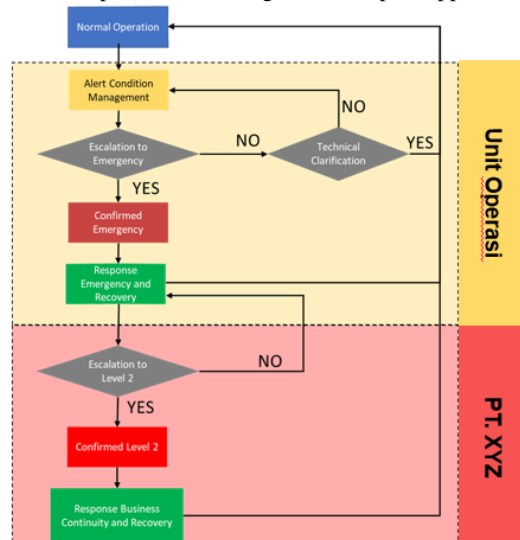


Figure 2. Coordination flow up to level II emergency

The Emergency Response Team at the Operations Unit or Project incident location is called the Incident Management Team (IMT) to contact and coordinate with the Emergency Response Commander (ERC) regarding the development of the condition and may request an escalation to an Emergency Condition Status. ERC as the highest leader of the Emergency Response Team (ERT) coordinates with the Incident Commander (IC) regarding the development of the condition and also communicates with the Deputy Leader regarding the development of the condition and requests to escalate it to a Level II Emergency Condition Status. Deputy Leader and Business Support Team (BST) considered the takeover and approved the ERC request by evaluating the ability of resources to control and handle emergency conditions.

Determination of Emergency Level II Conditions based on the development of the response process, considering the potential impacts that could lead to business continuity, and pressure from Stakeholders (Government or mass media developments, disrupting the company's business continuity and other considerations, both technical and strategic). After BST is declared active, the levels of response to emergency conditions and business continuity at PT. XYZ refer to the following hierarchy:

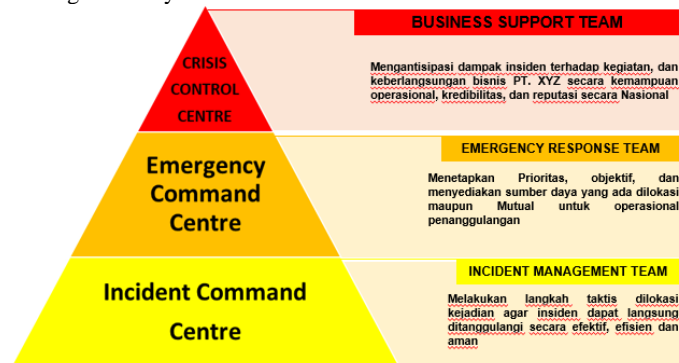


Figure 3. Hierarchy of Emergency Response Organization Response PT XYZ

**E. Parameter Training & Education**

Parameters in the preparation of disaster management curriculum and training systems, consisting of 7 indicators with 14 elements in this parameter PT XYZ has fulfilled 100%. The following are the competencies that PT XYZ employees need to fulfill in dealing with emergencies:

**Table 3.** List of Fire & Emergency Response Competency

<i>Technical Competency</i>	<b>Behavioral Indicators</b>	<b>Training</b>
<i>Fire &amp; Emergency Response</i>	<ol style="list-style-type: none"> <li>1. Able to understand the basic principles of fire and emergency response, prevention and control of fires and emergencies as well as applicable guidelines for handling</li> <li>2. Able to carry out initial level fire suppression/control with portable equipment</li> <li>3. Able to carry out First Aid in Accidents (First Aid)</li> <li>4. Able to report fire &amp; emergency events immediately</li> </ol>	<i>Basic Fire Fighting</i>
<i>Fire &amp; Emergency Response</i>	<ol style="list-style-type: none"> <li>1. Able to understand the principles of fire fighting/fighting with structural fire fighting</li> <li>2. Able to understand the principle of operation and maintenance of fire protection system</li> <li>3. Capable of extinguishing/controlling fires with structural fire fighting</li> <li>4. Able to carry out evacuation and assistance during fire &amp; emergency response</li> </ol>	<i>Advanced Fire Fighting</i>
		<i>Emergency Response Team</i>
		<i>Fire Prevention &amp; Protection</i>
		<i>First Aider Level 1</i>
		<i>Oil Spill Response IMO Level I</i>
		<i>On Scene Commander (OSC)</i>
		Ahli Pemadam Kebakaran Kelas A
		Ahli Pemadam Kebakaran Kelas B
		Ahli Pemadam Kebakaran Kelas C
		Sertifikasi Fireman Level 1
Sertifikasi Fireman Level 2		
<i>Basic Insurance</i>		
<i>Fire &amp; Emergency Response</i>	<ol style="list-style-type: none"> <li>1. Able to evaluate and prepare guidelines and procedures for handling fire &amp; emergency</li> <li>2. Able to prepare emergency preparedness, pre-fire planning, fire drill/emergency drill</li> <li>3. Able to carry out analysis and take into account the escalation of events and develop coping strategies</li> <li>4. Able to become a coordinator in the implementation of fire &amp; emergency management</li> </ol>	<i>Incident Command System (ICS)</i>
		<i>Oil Spill Response IMO Level II</i>
		<i>First Aider Level 2</i>
		<i>HSE Refinery Academy</i>
		<i>Water Rescue</i>
		<i>Emergency Response Team</i>
		<i>Pembekalan IFRC</i>
		<i>Industrial Vertical Rescue</i>
		<i>Advance Insurance</i>
		<i>Fire Design Engineering Level 1</i>
<i>Fire Design Engineering Level 2</i>		
<i>Tank Fire</i>		
<i>Fire &amp; Emergency Response</i>	<ol style="list-style-type: none"> <li>1. Be able to become a reference related to Fire &amp; Emergency Response and be able to carry out analysis and determine strategies for dealing with fire &amp; emergency on a corporate scale</li> <li>2. Able to develop fire &amp; emergency response systems and equipment</li> <li>3. Able to establish a fire &amp; emergency coaching program for the corporate scale</li> <li>4. Able to coordinate fire &amp; emergency response corporately and external institutions</li> </ol>	Manajemen Krisis & Simulasi PKD

**F. Parameter Exercise & Test**

This parameter is a practice-based methodological standard to program evaluation. There are 5 indicators with 22 elements, PT XYZ has complied with 19 elements with a percentage of 86.36% but there are still 3 elements with a percentage of 13.64% that have not been fulfilled. The scenario in an emergency drill level 2 involves 5 incidents in

one drill, namely: fire, cyber security, victim evacuation, oil spill, and demonstration. The scenario begins with the ongoing process of unloading from the ship to TK-204. During a patrol around TK-204 the OM operator saw the drone from the east and immediately there was an explosion accompanied by fire at TK-204. The increase in escalation to level 2 was caused by multiple tank fires which resulted in depleting the foam stock and requiring additional submersible pumps due to insufficient water supply to carry out High Capacity Foam Monitoring (HCFM), where the HCFM is used for cooling and offensive 3 tanks simultaneously.

Based on the results of the author's observations during the implementation of the Major Emergency Drill, it can be seen how prepared the Business Support Team (BST) or the level 2 emergency response team of PT. XYZ when viewed from its suitability to carry out roles and responsibilities in the event of an emergency in general the BST Team has data and can report conditions relevant to their duties and responsibilities, including preparing drafts for press release needs and support needs to maintain oil flows in relation to BCP well implemented and delivered. When the drill is carried out there is very little or even no interactive relationship between one part and the other between the Operation, Planning, Logistics and Finance Sections, where each part should have a connection. However, all sections have focused on the implementation of their respective duties and responsibilities. The following are the results of observations of each section in the emergency response team of PT. XYZ:

1. BST Leader: During a major emergency drill, the BST Leader cannot be present at PUSKODAL, so he appoints an operational director, namely Deputy Leader, to activate and lead BST during an emergency. The BST Leader does not appoint officials under him to communicate with stakeholders so that communication with stakeholders is taken over by the deputy leader. During the emergency management process, the BST Leader only receives reports from the deputy leader or asks how far the countermeasures are updated to the deputy leader to ensure that all work plans, priority systems, coordination and communication of all parties, both internal and external, run well, effectively and efficiently.
2. Deputy Leader: When the escalation rises to level 2 the deputy leads and thoroughly coordinates the response aspects and reports every development to the BST Leader. The deputy leader actively communicates and coordinates directly with the ERC regarding the response process in the unit, the deputy also actively coordinates and requests updates to each BST section, turns off all functions under his control, understands and is able to carry out his duties in handling emergencies. The deputy leader as a whole is ready to face an emergency, seen from how the deputy leader responds during the Major Emergency Drill emergency response process. The deputy leader has carried out his duties properly providing input or determining strategies in terms of countermeasures and the Business Continuity Plan.
3. Secretary: At the time of the Major Emergency Drill Level II, the secretary, namely VP HSSE, accompanied the Deputy Leader who at that time was leading the way to control the emergency at level 2. The Secretary had helped monitor the forum to update information to the BST Leader, as well as provide input related to handling emergencies. The secretary ensures that the HSSE team can help back up the absence of other sections in an emergency. The secretary had prepared an administrative document, namely the declare form for Emergency level II, but the secretary failed to remind the deputy leader that the Declare and Undeclared forms had to be signed at the right time, resulting in administrative delays in the statement. The Secretary has also been actively coordinating with the BST Team relating to countermeasures infrastructure. However, during countermeasures, the secretary focuses on listening to coordination between sections. So that the secretary does not ask for updates, provides input and technical advice related to cooling, foam chambers, to the HCFM used, PFP, the pumps needed for cooling, only focusing on submersible pumps and foam.
4. Planning Section: The planning section is ready with data related to anticipating stock and production disruptions. Because it was ready with the required data, the planning section responded quickly to questions from the deputy leader. The active planning section is diligent in communicating asking for updates on the status of countermeasures in the unit then providing technical advice in anticipation of stock and production disruptions. The planning section also actively coordinates with other sections, especially the corsec as a crisis communication regarding fuel stocks and oil spills for the delivery of press releases to the media, so that there are no mistakes that result in a bad reputation for the company. However, the planning section still has not provided technical advice related to equipment reliability and coordinating the procurement of goods in countermeasures because it feels that it has been handled directly by the logistics section. Not also providing advice and referrals for Medivac handling and coordinating with RSPP or other referral hospitals.
5. Logistic Section: There needs to be further direction for the team from the logistics section regarding their duties and responsibilities during an emergency, because none of its members were present at PUSKODAL at the time the Major Emergency Drill Level II was carried out so that when emergency response for the Logistics section was backed up by the HSSE Emergency Response function . The HSSE Emergency Response function can respond quickly to incidents and can help with good management, such as finding equipment, foam, main power. Then actively continue to coordinate regarding the delivery of aid, stock foam and equipment.
6. Finance Section: There needs to be further direction for the team from the finance section regarding their duties and responsibilities during an emergency, because none of its members were present at PT XYZ's PUSKODAL during the Major Emergency Drill Level II so that when handling an emergency for the finance section it was backed up by the HSSE function Emergency Response. However, the Emergency Response function team was seen as lacking knowledge regarding cost analysis, the emergency response team only understood insurance policies, loss analysis for the insurance claim process.

7. Crisis Communication: When an emergency rises to level II, crisis communication begins to compile and prepare a script to be used by the deputy leader for press releases to the media and also to prepare a draft report to be given to the BST leader to be submitted to stakeholders. There is no coordination regarding the delivery of goods with the logistics section. Crisis communication also does not carry out communication relations with government agencies and related institutions (POLRI, BASARNAS), so that all external relations are initiated and carried out by the deputy leader.
8. Committee Executive: During an emergency, because none of its members were present at PUSKODAL when the Major Emergency Drill Level II was conducted, so when responding to an emergency, the executive committee only received reports from the deputy leader or asked the deputy leader how far the response was. The Executive Committee does not provide advice and input regarding the business continuity plan, nor does it communicate with stakeholders.

PT. XYZ already has PUSKODAL but the capacity of the room cannot accommodate BST as a whole so during an emergency level 2 the room used as PUSKODAL is the board of directors meeting room, where the room has a larger capacity and can accommodate BST. The board of directors' meeting room which during an emergency was used as PUSKODAL already has adequate facilities and is properly available in accordance with the guidelines made. Communication systems such as the internet are sufficient for communication to the scene of the incident or each BST member. The internet network used for Ms Teams connection is adequate and running well, there are no problems. The desk telephone is also adequate, equipped with important telephone numbers pasted on the table, incoming voices can also be heard clearly. The lighting from the lamps is good, the noise from the speakers and the surroundings are well supported by a soundproof room, and the comfort of the room is suitable and good for the BST team.

The desktop at PUSKODAL has been used to display the CCTV unit, submerged area unit and connected to the PUSKODAL Unit so that BST can monitor the response process in the unit live. Screen capabilities are good and there are no distractions. Flip charts are available as needed along with writing tools, but the flip chart is too small so the writing from the Log Keeper cannot be read if it is not close to the flip chart. On each table there is a guide in the form of duties and responsibilities during an emergency, there is also a nameplate for each section. However, the absence of vests for the BST team when Emergency Level 2 occurred resulted in many officials not being seated according to their roles. The vest can be stored at PUSKODAL in anticipation of the user losing or being left behind.

The drawback of using the board of directors' meeting room as PUSKODAL is that when an emergency occurs, the facilities needed when a level II emergency is not on standby, so it takes time to make PUSKODAL ready for use. Therefore, the room for PUSKODAL needs to be determined (not moving) with sufficient capacity, so that all the necessary supporting facilities can be determined.

#### **G. Parameter Program Maintenance & Improvement**

These parameters are steps in program development by conducting program reviews, corrective actions, and sustainable development. This parameter consists of 3 indicators with 17 elements, PT XYZ has fulfilled 14 elements with a conformity percentage of 82.35% but there is still a discrepancy in this element of 17.65%. Efforts to improve and improve this program are carried out to overcome deficiencies, update, and improve the program so that actions to be taken next can be carried out on an ongoing basis through the use of program reviews and corrective action processes but corrective actions are documented from the training activities that have been carried out, documents, notes, and reports given to management for review took too long to deliver so the follow-up took quite a long time.

### **CONCLUSION**

Of the 7 (seven) parameters in NFPA 1600 PT XYZ in implementing the emergency response management system (89.73%) complied with the NFPA 1600 standard and (10.27%) did not meet the NFPA 1600 standard. Two of the seven parameters are the Execution parameter, Training & Education has 100% met the NFPA 1600 standard but five parameters including the Program Management, Planning, Implementation, Exercise & Tests, Program Maintenance & Improvement parameters still have deficiencies that need to be corrected. PT XYZ defines 16 scenarios of types of emergencies. PT XYZ also determines 3 categories of emergencies, namely Level 1, Level 2, and Level 3 emergencies. control of business operational activities by the Business Support Team (BST). For PT XYZ's emergency management plan and business continuity, refer to the Incident Action Planning Process scheme.

When the Major Emergency Drill was carried out, all sections were focused on carrying out their respective duties and responsibilities, but there was very little interactive relationship between one section and the other, between the Operations, Planning, Logistics and Finance Sections, where each section should have a link. Scenario drills have been made as realistic and realistic as possible in accordance with the occurrence of emergencies that have existed but there is still a lack of awareness of officials regarding emergency response organizations to attend drills so that there is still taking over of duties and responsibilities for officials who are not present. The matters that need to be evaluated so that in the future the officials responsible for BST can carry out their duties even more optimally



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