

Research on the modernization of grassroots emergency management capacity

——Based on the empirical study of the explosion of Jiayi Chemical Plant on 3.21 day

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Abstract. In order to reduce the harm of emergencies and safeguarding the safety of people's lives and property, this paper focus on the modernization of grassroots emergency management capabilities, so as to improve the ability of grassroots units to deal with emergencies. In the research process, the literature research method and case analysis method were used to analyze and summarize the development process and current situation of grassroots emergency management.

Keywords: Grassroots emergency management; Ability; Emergencies.

1. Introduction

As the first pass in dealing with all kinds of emergencies, whether the grass-roots units can eliminate the accident in the bud and control it before it becomes a disaster plays a pivotal role in the overall trend of the incident. In reality, due to the lack of personnel at the grassroots level, the disposal is not timely, the experience is not rich, and the equipment is not complete, and the best opportunity for accident disposal is missed. Therefore, through the study of grassroots emergency management capacity, we try to put forward ways and means to optimize and improve governance capacity, so as to broaden the direction for strengthening grassroots emergency response capacity. The emergency management capacity of grassroots units will be highlighted, and the key role in the early stage of the accident will be displayed, and the modernization of the national emergency management capacity will be promoted.

2. Literature review

Regarding the research on grassroots emergency governance capabilities, Hu Xiangming [1](2021) proposed that grassroots emergency governance capabilities cover emergency prevention, emergency response, emergency mobilization, emergency disposal, emergency rescue, emergency communication, emergency services, emergency support, etc. Ma Baocheng[2] (2021) pointed out that the basic emergency management capacity should be strengthened by strengthening the emergency management training of first responders and heads of grassroots units. Liang Haiyan[3](2022) used procedural law to analyze whether procedure or efficiency is given priority in the process of grassroots governance, and whether to rely on experience or procedural system to obtain enlightenment for improving the ability of grassroots governance. Li Huaqiang[4] (2022) discussed the current situation and existing problems of emergency capacity building in grassroots communities, and summarized and analyzed the components of emergency response capacity in grassroots communities.

In March 2003, the United States established FEMA, integrating military, police, firefighting, medical, civilian rescue organizations and other units, integrating the disaster relief system from the central to the local grassroots level. IEMS also emphasizes the all-round improvement of society's ability to respond to emergencies by enhancing the disaster resistance and self-rescue capabilities of

grassroots units[5]. United Kingdom scholar John • Twigg conducted an in-depth analysis of the prediction and early warning mechanism of grassroots community emergency management from three dimensions: assessment and forecasting, early warning and dissemination, and response. Japan's emergency response capability system is based on a well-developed information transmission system, and its disaster prevention communication network covers the whole country, and immediately after an accident, information is collected, classified, statistically analyzed, and sent to designated disaster prevention centers[6]. After analysis and judgment, the grassroots departments took emergency response measures and scientifically carried out emergency management.

To sum up, different scholars at home and abroad have analyzed and summarized the composition of grassroots emergency management capacity from the aspects of procedural experience, visit and research, disaster relief system, and emergency response system, while this paper analyzes the grassroots emergency management capacity through the accident handling process.

3. Analysis of the current situation of grassroots emergency management capacity -- taking the explosion accident of Jiayi Chemical Plant on 3.21 days as an example

The ability of grassroots emergency management refers to the ability of grassroots units to respond to emergencies, and grassroots units use their corresponding powers to respond to emergencies in a targeted manner and minimize the disaster of emergencies. Based on the stage of the emergency, this paper divides the grassroots emergency management capabilities, which are specifically summarized as the ability to prevent and prepare for accidents, the ability to monitor and warn during accidents, the ability to deal with and rescue accidents, and the ability to recover and rebuild after accidents. Combined with the research views of scholars, the emergency management ability of the grassroots is analyzed through four stages: before, during, and after the explosion accident of Jiayi Chemical Plant in 3.21 days.

3.1 Prevention and Preparedness

Be prepared, for the country's common way. Jiangsu Tianjiayi Chemical Co., Ltd. is located in the chemical industry park of Xiangshui County, Yancheng City, and the safety management organization of the chemical park carries out an overall safety risk assessment of the park every five years, and proposes countermeasures to eliminate, reduce and control safety risks; The Xiangshui County Emergency Management Bureau went deep into the enterprises in the park to carry out safety publicity and training activities, and further reduced the frequency of safety accidents through education and publicity; The Yancheng Fire and Rescue Detachment has formulated an emergency plan for the park and regularly conducts fire drills with the fire brigade of the park enterprises to simulate emergencies, and at the same time organizes forces and reserves materials and equipment in response to emergencies in the park.

3.2 Monitoring and early warning

After the accident, the Jiangsu Provincial Environmental Testing Center immediately dispatched a monitoring team to the site to carry out pollutant testing, monitor the contaminated water and soil at the site, and monitor the air quality at the accident site every two hours, and initially put forward a pollution control plan; In the early stage, the Jiangsu Provincial Fire and Rescue Corps used drones, ball control, 4G individual image transmission and other equipment to continuously monitor the overall situation of the scene and the internal environment of the accident, and then transmitted it to the on-site command center to provide real-time data and video resources for the commander to make decisions and deployments.

3.3 Disposal and rescue

Disposal and rescue is the main part of emergency management, which directly determines the direction of the development of the accident, whether the disaster is expanded or completely controlled; The four parts of early disposal, command and decision-making, coordination and linkage, and logistical support constitute the basic elements of handling and rescue, controlling the development of accidents, reducing losses, and greatly safeguarding the fundamental interests of the people.

3.4 Restoration and reconstruction

Post-disaster recovery and reconstruction involves the resettlement of the affected population, environmental governance in the disaster area, reconstruction of infrastructure, production restoration, and enhancement of disaster resistance, which is of great significance for people's livelihood, social stability, environmental protection, and disaster resistance. The accident caused serious damage to 89 houses, 863 households suffered general damage, the mayor of Yancheng City arranged a special person to assess the houses, for the seriously damaged houses and buildings are all demolished, residents can choose to resettle in accordance with the demolition and resettlement policy; For generally damaged houses, a professional construction team was organized to chase the door to carry out free repair and reinforcement, and compensate the people who were damaged in the accident.

4. Analysis of grassroots emergency management capacity

4.1 Lax implementation of safety supervision and inspection

The occurrence of this accident was not a random incident, but a result of the accumulation of problems in the enterprise due to lax implementation of multiple supervision and inspection. In this explosion, multiple departments did not implement the production supervision of the chemical park in place, did not conduct strict inspections on the existing problems in accordance with the rules and regulations, and did not re-inspect the rectification and implementation, which indirectly led to the occurrence of this accident.

4.2 The practicality of the emergency plan is not high and the specificity is not strong

The content of the emergency plan is not practical: the plan makes a relatively detailed division of the responsibilities and task division of each department, but the specific implementation of each department's participation in the disposal and rescue and the linkage with other departments are not clarified. At the same time, the rescue process has not been specifically sorted out, which is very likely to lead to a swarming situation at the rescue site, and this phenomenon is also reflected in the handling of this accident.

4.3 Low efficiency of disposal and rescue

During the on-site rescue process, it can be found that there are many core organization groups and a lack of more authoritative and unified organizational leaders. The public security department, medical and health organizations, power departments, communications departments, etc., are not smooth enough in cooperation with the fire rescue team, lack of dominance, and it is difficult to form a top-down flat rescue structure and exert the joint force of emergency management. In this case, the emergency management cooperation of various departments is fragmented, superficial and formal, and no common cooperation goals and intentions are established. Especially in the initial rescue stage of the accident, a large number of personnel from various departments poured into the accident site without forming an efficient rescue chain. The local hospital and the Red Cross should arrange ambulances to send the trapped people to the hospital for treatment as soon as possible after they are rescued from the scene; SF Group provides logistics support for the Jiangsu Provincial Fire Rescue

Corps in terms of logistics, etc., to form a complete emergency management structure and effectively exert the functions of various departments.

4.4 Recovery and reconstruction lack the ability to resist the same risks

Traditional post-disaster recovery and reconstruction mainly carry out work from the aspects of preventing secondary disasters, restoring social order, restoring public facilities, and restoring production and economy, ignoring the use of recovery and reconstruction as an opportunity to enhance the social disaster prevention and mitigation capabilities and enhance the overall social ability to resist risks. After the Jiayi Chemical Plant explosion on March 21, during the recovery and reconstruction phase, there was a lack of relevant departments to integrate the accident with the Internet and big data, and to make full use of information technology such as the Internet and big data to collect relevant data and information for grassroots emergency management, achieve full coverage of daily management and emergency dispatch, guide participation in future emergency rescue work, provide support for serving rescue decisions, and rationally dispatch emergency resources, and enhance society's disaster prevention and mitigation capabilities.

5. Countermeasures and suggestions for improving grassroots emergency management capabilities

5.1 Improve supervision and inspection

Emergency management departments should effectively assume the bottom-line responsibility for comprehensive supervision and management of hazardous chemicals, establish a daily supervision and law enforcement team, conduct special inspections on key units, and track the hidden dangers found in real time until they are completely resolved. Strengthen communication with enterprises, increase the participation of enterprises in investigating their own hidden dangers, and jointly supervise from both inside and outside. Emergency management and ecological environment departments should establish a supervision cooperation and joint law enforcement work mechanism, coordinate closely, realize timely, full and effective information sharing, form a working synergy, and jointly do a good job in the safety supervision of hazardous chemicals.

5.2 Enhance the practicality and pertinence of the plan

The preparation of emergency plans must be based on the results of risk or disaster analysis, and refer to the capacity requirements and current status of emergency resources and relevant laws and regulations. When preparing, we should also fully collect and refer to existing emergency plans, including emergency plans of superior departments and plans of related parties, so as to maximize the experience and ensure coordination with other relevant emergency plans. In the process of formulating emergency plans, the government and its departments should widely listen to the opinions of relevant departments, units and experts to ensure the pertinence of the plan goals and the practicality of the content.

5.3 Strengthen the coordination and linkage of grassroots departments, and unify command and mobilization

The occurrence of emergencies is often handled by multiple departments. Under the unified command of the party committee and the government, all departments work together. According to the specific circumstances of the emergency, exercise decision-making and command power, comprehensive dispatch power, department coordination power, etc. The fire department is responsible for accident handling and rescue, the public security department is responsible for surrounding alert, the medical and health department is responsible for personnel treatment and later disinfection, the power and communication department is responsible for power supply and communication guarantee, the media's public opinion guidance, etc. The role of each level in handling

emergencies is indispensable. The orderly development of the rescue site is inseparable from the efficient cooperation of various departments. The party committee and government units coordinate various grassroots departments, unify command and dispatch, and integrate the scattered into the whole, so as to give full play to the grassroots emergency management capabilities.

5.4 Establish a powerful information-based command platform

Use advanced technologies such as blockchain, Internet of Things, mobile applications, and big data to create an intelligent information-based emergency command platform that "connects up and down and collaborates horizontally". It can realize real-time perception, intelligent warning, rapid alarm response and scientific rescue, creating a new visual, collaborative and intelligent emergency management and command model. At the same time, it can record the handling measures of various emergencies to provide a basis for emergency management, thereby improving the emergency management capacity and level at the grassroots level.

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