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ИССЛЕДОВАНИЕ ВОЗМОЖНОСТЕЙ ИСПОЛЬЗОВАНИЯ СЕТЕВОЙ МОДЕЛИ УПРАВЛЕНИЯ ДЛЯ ОБЕСПЕЧЕНИЯ ПОЖАРНОЙ БЕЗОПАСНОСТИ РАЙОНА

Чен Тао, профессор

тел. +86-13801304296, chentao.a@tsinghua.edu.cn

Чанг Женксинг

тел. +86-15901564061, czxing2008@163.com

Ву Лили

тел. +86-15652904755, wulili@gsafety.com

Киао Чен

тел. +86-18600230269, qiaochen@gsafety.com

Ли Жипенг

тел. +86-13693292143, lizhipeng@gsafety.com

Хуанг Куани

тел. +86-13581793789, huangquanyi@gsafety.com

Отдел инженерной физики, Институт Исследований Общественной Безопасности, Университет Цинхуа, Пекин, Китай, 100084

Основываясь на актуальной ситуации в области пожарной безопасности района Бинсити, создана адекватная система управления с целью обеспечения пожарной безопасности и гармоничного развития данного района. Предложен метод сетевого управления, который позволяет обеспечить стандартизацию и высокую эффективность пожарной безопасности района, реализованы соответствующие меры и внесены предложения по оптимизации практики управления безопасностью района. Результаты исследования могут быть использованы в районах, нуждающихся в стандартизации пожарной безопасности и повышении ее эффективности.

Ключевые слова: гражданская защита, район, пожарная безопасность, сетевое управление.

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RESEARCH ON GRID MANAGEMENT MODE FOR FIRE SAFETY OF COMMUNITY

Chen T., Chang Z.X., Wu L.L., Qiao C., Li Z.P., Huang Q.Y.

Purpose. Based on the actual situation of fire safety of community B in city A, setting up a set of fire management system suitable for the community to guarantee the fire safety for the community, and make the community service be more perfect and community develop harmoniously and stability.

Methods. Through investigating the current situation of fire safety of community B in city A, we find the existing problems, and put forward the method of grid management combining with the actual situation of the community, so as to achieve the standardization and high efficiency of the community fire safety. Grid management mode for the community fire safety is discussed and analyzed, and the corresponding countermeasures and Suggestions for optimizing the community fire safety management are put forward, and are applied to fire safety management practice of the community.

Findings. Through investigating the current situation of the community fire safety, the grid management mode is introduced to further optimize the fire safety management of the community and better protect the community fire safety.

Application field of research. The research results of this paper can be used in communities with fire safety accidents, communities with fire safety hazards, or communities which are to further standardize fire safety management and improve the work efficiency.

Conclusions. Through practice, grid management work for fire safety of community B in city A basically achieved «three all», namely, fire protection dynamic «all clear», fire hazards «all control», and popularization of fire protection knowledge «all-around».

Keywords: community, fire safety, grid management, three all.

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Introduction. With the rapid development of economy and society, the quality of people's material, spiritual and cultural lives has been greatly improved. Meanwhile, citizens have growing demands for social public security and there is a continuous increase in fire risks and pressure for risk prevention. Under such circumstance, threats and opportunities are faced in managing public fire safety. The public has more and more intense desires for social safety, with increasing appeals for the government to strengthen fire safety management. With the fast development of internet technologies, new media and tools have been upgraded. Thus, the public has the chances to participate in supervising administration and social safety.

Jobs about fire safety have been always crucial parts of urban emergency management. Over the past few years, public lives, living environment and supporting facilities have been progressively improved with the constant increase of productivity. Meanwhile, communities have tended to be centralized and enlarged. As urban residential communities become mature and perfect, new requirements have been proposed for fire safety. Some problems become increasingly prominent in streets and communities, such as uncontrolled fire safety and pipe leakage. In many areas, the constructions of fire protection facilities are severely postponed in communities, so it is impossible for satisfy the needs of guaranteeing community safety and blind spots exist in fire safety [1-3].

Grid management divides cities and communities into some grids, assigning responsibility to fire monitors in each grid and the local police station, refining the tasks to each grid, so as to achieve that each person is responsible for an area and quantifying the tasks. And dividing the specific area of each fire monitor and public security police station fire police in maps of every city and community to achieve realize linkage of areas and universal coverage, put an end to the situation that is out of control and oversight of management. Therefore, we take community B in city A as research object, and it is necessary to promote and popularize grid management mode for fire safety, comprehensively control the fire safety in communities, reduce management costs and increase the efficiency of fire and emergency management for the final purpose of improving public acceptability of and satisfaction with fire safety-management in managing urban fire safety [4].

Current situation and existing problems of community B. With the development of the country, fire protection must be constant. This should not be underestimated in the security and stability of society. We should work hard to ensure the fire safety management of the community, and provide the city community with better public fire protection services. The public should know more about fire safety knowledge. We should better coordinate the work of community fire safety and achieve the synchronous operation of disaster prevention and disaster reduction to ensure the safety of the public. Efforts should be made to improve the efficiency and security of community fire protection so as to create a harmonious and peaceful society for the people. According to the investigation, the current situation and existing problems of community B are as follows:

Firstly, there is a gap between the community firemen and the district fire brigade.

For many communities, they lack the strength of their own disaster relief, professional fire protection teams, and knowledge of fire protection. In the event of a disaster, people of the community often call for the fire brigade. However, there is a certain lag between the arrival of the fire brigade, and the best fire extinguishing period is missed, resulting in the expansion of losses. The lack of concentration and mobility of the community firemen results in little practical effect on disaster relief work. The problems district fire brigade is facing now are: the area of the district is too large, the monitoring points are skimp, the disaster relief coverage is not high, the relief force cannot arrive in the first time, and it is difficult to exert the biggest relief effect.

Secondly, the basic fire facilities in the community are too weak.

The fire facilities themselves are not complete, and there are many antiquated facilities. Fire hydrants, fire extinguishers, fireman uniform, water belts, water guns and so on are seriously inadequate, resulting in a serious lag in the construction of fire facilities.

Thirdly, failure to establish the awareness and concept of disaster prevention and relief.

The residents of the community are not sufficiently aware of disaster prevention and relief, and have little understanding of the corresponding fire protection common sense and ability. It lacks professional publicity and teaching staff in the community to organize the emergency measures such as fire protection and rescue, which leads to the general weak in the concept of fire protection among residents and the weak knowledge of self-help. How to save the general initial fire, how to escape in the fire scene, and how to safely use household appliances, these fire protection common sense knowledge has not been thoroughly popularized and promoted. What is more, not only is the fire protection common sense not understood, but the community fire protection work is not be supported. People lack the overall escape sense of mutual aid. Even worse, public fire protection facilities may be damaged, resulting in the inability of community firemen to use the facilities properly.

Fourthly, the danger of community fire is serious.

From current fire safety situation, the hazards of fire include: First, there is serious damage to the community fire protection facilities, which fails at the critical moment of the fire. Second, fire protection access planning lags behind the urban community planning, often blocked or blocked by concrete pier, so fire engines cannot enter. Thirdly, in recent years, the decorative materials used by the family are mostly combustible, resulting in a large increase in the fire load of the family unit area. Fourth, the residential districts were developed adjacently, which had large scale, resulting that population is concentrated, shopping centers, schools, kindergartens and other assembly occupancies and gas stations and other dangerous chemicals areas are concentrated, which increases the probability of fire.

Fifthly, the fire emergency command process has disadvantages.

The traditional fire alarm and fire protection procedures are based on the subjective experience of the alarm dispatcher and then mobilize the rescue force. Once misjudged, it will lead to the failure of the whole fire rescue work. And the way in which the dispatchers understand the damage is to rely on manual approach to implement, failing to give full play to the advantages of network technology and wireless communication, which causes the fire response speed slow, and masses satisfaction is not high.

Discussion on the grid management mode of fire safety of community B in City A.

City A has actively grabbed the national social management innovation pilot opportunities since 2010, and explored the social management innovation of fire protection work, extends the four level management system of the traditional «city, district, street, community» to the fifth level «Community Grid», and divides the 155 urban community into 1110 community grid, each grid has a full-time post administrator managing within the grid size[5].

(1) Based on the grid management, the basic level fire protection duties have been implemented.

Starting from the integration of resources, improving the system and strengthening linkage, we will solidify the work mechanism of community fire safety grid, and realize the normal management. Firstly, we integrate six types of personnel at the grassroots level. In the grid, the area fire supervisor, community police, community comprehensive management engineer, security defense firefighters, grid administrators, fire safety manager in grid unit are determined the basic fire work «six responsible persons», defining fire protection duties and tasks respectively, carrying out post, responsibility and quantitative management, and improving the joint control system of regional fire prevention. The second is to standardize the fire protection process. In the city grid management center, the establishment of grid fire basic information collection, fire emergency command and disposal, fire safety day-to-day inspections, fire hazards reporting and supervision system. Prepare and release the «guide» of grid fire control work, take centralized training, in the form of a meeting instead of training, the training will improve the ability of fire protection. The third is to strengthen the grid work docking. Establishing a regional contact system, each fire supervisor organizes the grid administrators to conduct fire inspection once a week, and the fire brigade convenes monthly community fire work meeting, supervises and comments on the completion of the fire work tasks. City grid management center incorporates the contents of firefighting work into the performance evaluation category of the grid staff, and implements the «monthly assessment, annual rewards and punishments», to promote the initiative of the grid staff in the fire control work [6-7].

(2) With the support of information platform, mastering the dynamic of regional fire protection and control is realized.

In accordance with the thought that «information sharing, real-time updates, professional use», establishing fire basic information system covering the whole city, to realize preliminarily the dynamic control of regional fire. Firstly, building the information sharing platform. The basic population information system is connected to the 119 command center and adding the fire service information subsystem, to set up a fire information exchange platform. Departments of public security, human resources and social security, civil affairs, justice, housing, disabled persons' federation carries out the association, comparison and inspection of collected information and fire service information, to form a detailed database which contains the basic information of main urban area of 103,7 square kilometers, a population of 1 338 000, more than 20 thousand buildings, and provide a powerful information support for the fire risk assessment, the focus of attention, fire rescue and other comprehensive prevention work. Secondly, innovating information gathering mechanism. The grid administrator collects relevant information according to the responsibility, and uses the community electronic communication 3G wireless terminal to upload to the population basic information system quickly, and exchange it to the basic fire information platform. The grid supervision center adopts the method of combining «gathering on the surface» and «checking on the spot», which not only realizes the accurate collection and dynamic updating of related information, but also avoids frequent information collection and repeated input. Thirdly, strengthening the professional use of information. By using GIS, presenting the basic information and distribution of «human, house and thing» on the electronic map of the command center, realizing determining fast and accurately the site and the best rescue line in fire fighting and rescue work, and grasping comprehensively the surrounding circumstances of the incident site and the detailed conditions of people in the incident building, to solve the problems which are base number is not

clear, the situation is unclear, information is not expedite of service management objects, such as the actual population, actual buildings, and focused groups and places [8].

(3) Aiming at integrated fire protection, effectively improving ability of resisting fire of the city.

Through the integration of resources, it realizes that fire monitor, fire protection, and fire protection promotion combine organically in the grid. Through the extensive use of information technology, we simplify the management process, realize the flattening command management of the front line, and improve the execution of the basic fire protection and control. The first is to implement the hidden trouble screening mechanism. Organize the grid related personnel to conduct fire inspection and register the book weekly in community and monthly in street office. During major holidays, periods of time and special governance, the grid management center shall give unified instructions to organize the grid administrators to conduct targeted fire control safety check. Connecting the fire hazard report complaint center with community electronic communication, timely investigate and treat the fire violations and fire hazards detected by the grid administrators. Second, realizing fire speed disposal. Equipping mini fire engines and fire protection bikes for the street office and the community, uniformly purchasing life and death insurance for the grid administrators, each duty squadron work together with community to perfect fire rescue plan and organize regular exhibition drills. After the grid administrator found out the fire, he reports the situation through the community electronic communication to command center at the first time, and coordinated the relevant personnel to carry out the initial fire control. Third, deepening daily fire protection publicity. Give full play to the advantage of the grid administrators close to the masses, print the grid fire service cards, and send them to the community residents through the grid administrators. Implement the fire protection publicity window project and set up fire control publicity column within the grid. According to population basic information system, comprehensively grasp the conditions of the single, people who live alone, the sick and other key personnel, supervise and urge the grid administrators come to take care of them one by one. Through the solid and meticulous propaganda, we effectively reverse the situation that special groups are vulnerable to fire accidents [9-10].

Practice of grid management of community fire safety in city A.

(1) Reinforcing «three foundations» of community fire safety management.

Firstly, reinforcing the foundation of organizational construction. According to principles that «street setting, scale moderate, seamless coverage, dynamic adjustment», dividing the 155 urban communities of city A into 1110 grids, and each grid is a new fire protection and control unit. The original four-level fire safety organization and management system which is «city-county-street office-community» is extended to the «grid» which is a new level, so as to achieve the refinement and dynamic fire management services.

Secondly, reinforcing the foundation of group prevention and treatment. The municipal government solves the establishment and guarantee of public welfare posts uniformly, in accordance with the "one member a grid" standard, recruits in public 1110 community grid administrators to undertake seven daily work including fire protection work. City public security bureau registers and establishes «eight members» volunteer team in accordance with the standard that community volunteer registration rate is 10 % of the population, in which, the number of comprehensive information officers and public security fire inspectors reaches 25 000 and 18 000 respectively, which effectively supplement the deficiency of public security personnel and firemen.

Thirdly, reinforcing the foundation of the construction of facilities. The municipal government regards implementing the fire protection planning as an important content of urban streets, communities and other basic infrastructure construction, and as the focus of public financial security, and the government establishes a synchronous growth mechanism.

In 2016, the construction expenditure of public fire protection facilities, personnel and information platforms of the two levels of finance in the community and the city reached 68,8 million yuan, which provided a strong guarantee for the foundation of the fire protection in the whole city.

(2) Perfecting «four systems» of community fire safety management.

Firstly, improving the basic information system of fire protection. Through the computers and community electronic communication, population, housing and other basic information is collected to the information platform. In the daily work, the grid administrator realizes the real-time collection and input of the basic information. Mastering the «three dynamic» which are the key people (such as the old and the sick, the mental patients, the construction site workers, and so on), the property rights and the nature of the use of the houses, and the basic situation of the public fire infrastructure in the grid (such as whether the fire hydrant is buried pressure, circle, damage, whether the fire channel is blocked, occupied, the building is full of fire facilities, and so on).

Secondly, improving the fire hazard prevention system. Playing the role of grid administrator, carrying out «double tour one day» in the area, that is, one and a half hours inspection respectively in the morning and afternoon in the grid, which includes fire safety inspection, fire safety reminder, as for risk and fire violations in the grid, supervising its rectification on the spot. If the on-site supervision and rectification is invalid, contacting the area firefighters, police of the primary police station through the community electronic communication, and then the fire police officers ordered the rectification of fire hazards and correct fire violations. In addition, the masses tell related information to the grid administrator or community comprehensive management station. After finding or receiving the information about the dangers, the community will go to coordinate and persuade then, if cannot solve, report it through the contradiction resolving system.

Thirdly, improving the fire protection knowledge publicity system. They are mainly the daily inspection publicity and home publicity. For example, in the remediation of residential quarters private car occupies the fire truck channel special action, the grid staff explain a wide range of publicity through posting notice, releasing information and going to residents' homes, when finding occupation of channel phenomenon, persuade, if invalid, report to the fire office or the police. In New Year's Day, the Spring Festival, Ching Ming, «May Day», National Day, and other important festivals, carrying out a wide range of targeted fire fighting and control, and fire escape and self-help knowledge of the fire propaganda activities to improve the ability of citizens to self-defense and self-help, and leading the masses in the grid to actively participate in fire work to enhance the level of public fire safety management, maintain fire safety in the grid together to achieve the purpose of building a harmonious community.

Fourthly, improving the fire emergency rescue system. With the help of information resources of city population basic information system of city A, enhancing the command, scheduling, decision-making, rescue efficiency of fire protection, and to achieve the quick and accurate location of the incident, and the quick preparation of the best rescue line, a comprehensive grasp of the surrounding situation, Master the details of the situation in the construction of the «two quick», «two all» the «four effectiveness» advantage. At the same time, equipping with the corresponding fire rescue equipment at the street «three centers» (convenience service center, comprehensive management complaint reporting center, grid management center), and the neighborhood committee «three stations» (convenience service station, comprehensive management complaint reporting station, grid management station). After receiving the alarm, the command center contacts and cooperates with the grid administrator in time, reaches the scene and exchanges situation in the first time, timely controls the initial fire, and does the coordination work after the arrival of the fire brigade [11-12].

Conclusions. Through practice, community fire safety grid management work of city A has basically achieved «three all», namely:

Firstly, fire protection dynamic «all clear». Through the information collection function of community electronic communication, finding out the actual number of houses in each grid, including safe evacuation condition, fire control facilities and fire rescue condition, so as to realize «manage fire according to houses». The basic status of municipal fire hydrant in the grid is obtained, and then number them and record the information into the national population basic information system, so as to facilitate fire department to maintain and use it. Finding out the specific

location of vulnerable people in the grid, so as to improve the pertinence of fire protection and rescue.

Secondly, fire hazards «all control». Take advantage of the characteristics of grid staff familiar with environment and people, mastering the fire hazard and fire protection illegal acts in the grid, and reporting to the fire hazard complaints center in real time to facilitate the inspection and treatment of fire control personnel. Mastering the activity routines of special objects such as mental patients in the grid and the activity routines of the elderly, children and other vulnerable groups, to implement the visit and help measures to prevent accidents. Mastering the fire safety features of the key periods, researching and formulating specific work measures to carry out fire safety inspection and inspection activities specifically.

Thirdly, popularization of fire protection knowledge «all-around». The grid staff is both a manager of the community work and a propagator for fire protection. Regularly organizing the grid administrators to carry out fire training to make them «fire protection encyclopedia». Installing some fixed fire billboards in each grid, and vigorously promoting fire safety knowledge. Grid staff specifically post some fire wall charts to remind residents not to install burglar mesh which prevents escape, not to park casually which affects fire-fighting and rescue, and not to use fire and power illegally, and so on.

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