

Safety Problems and Solutions of agro-electricians in Line Maintenance

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Abstract

With the development of economy, the electricity industry has reached a high level of development stage, nuclear power and UHV transmission has become the focus of the society. In the electricity industry, the safe operation of the power grid is the focus of society. Transmission and distribution lines are usually destroyed by natural factors such as plants and geological hazards, so there are a series of faults in transmission and distribution lines. In the distribution lines, agro-electricians usually maintain the lines after problems occur, so the construction safety of the agro-electricians has become the focus of the problem. In this paper, we discuss the faults of distribution line and the safety of agro-electricians under the influence of natural factors.

Keywords

Line maintenance, agro-electrician, natural factors.

1. Introduction

With the development of electricity industry, the status of rural electricians in power enterprises is getting higher and higher. They are directly responsible for the operation and maintenance of the lines. Since implementing the "four-to-household" policy for more than ten years, lines have always been a difficult point in the management of rural power supply and utilization. In 2016, there were 49 electric power accidents, which cause 86 deaths in China, including 33 electric power production accidents, which cause 39 deaths, 16 electric power construction accidents, which cause 47 deaths. In 2016, there were more than 10 serious electric power accidents and 42 deaths in China. In 2016, there were 5 electric power accidents caused by natural disasters, with 65 deaths. In this regard, the author made a comprehensive investigation on the security management of rural power supply and utilization, analyzed three aspects of problems existing in the operation and maintenance of rural power lines, and put forward some constructive solutions and measures from different angles.

2. Reasons for Accidents in Operation and Maintenance of Agricultural electricity system

2.1 Township electrician Group has few staff but too much work

At present, there are generally 2 to 3 people in a township electrician group, who responsible for the power supply management of the whole villages. It contains at least several thousand to tens of thousands of users. A lot of work makes staff tired and this causes construction accidents. Their work includes publicizing to the mass the relevant electric power laws and regulations, such as the Electricity Law, the Regulations on Electricity Supply and Use, and the Regulations on the Protection of Electric Power Facilities, managing and inspecting the planned, economical and safe use of electricity by the villagers in under their jurisdiction, mastering the method of electric shock rescue, and regularly inspecting and repairing of high and low voltage lines and equipment.

2.2 The comprehensive quality of some agro-electricians is poor

At present, most of the agro-electrician are over 45 years old. Due to the shortcomings of the recruitment mechanism in the past few years, most of the agro-electrician have low educational background, high average age and low cultural quality. The poor construction technique and poor comprehensive quality are also important factors for frequent accidents of agro-electrician.

2.3 =Geological hazards occur frequently.

Due to the influence of greenhouse effect in recent years, climatic conditions in some areas have changed. For example, more rainfall leads to more mountain torrents, more landslides and other bad situations lead to more line faults. Thus, the difficulties of agro-electricians repairing and the times are increased. As a result, the number of construction accidents of agro-electricians has increased.

2.4 =Increased in vegetation coverage

With the implementation of policies such as afforestation and conversion of farmland to forestry, the vegetation coverage in rural areas has increased rapidly. With the rapid growth of trees and bamboo, the distance between the traverse and the ground line and the vegetation does not meet the minimum distance of the traverse and trees. Therefore, agro-electricians need to "cut down the green", thus increasing the safety risk of agro-electricians.

2.5 Temperature and toxic animals

Agro-electricians work all year round, mostly in high-temperature fields. As a result, some agro-electricians suffer from heatstroke but can not get timely rescue, which results in serious accidents. In addition, the poisonous snake, insect, rat and ant in nature will also endanger the personal safety of agro-electricians.

3. Solutions.

3.1 Improve the comprehensive quality of the agro-electricians.

Agro-electricians should be selected through examinations and their practical abilities should be paid attention to. Only undergraduates and specialists with college or higher education can be employed as agro-electricians. College degree or above can be recruited to serve as agro-electricians. Secondly, young people under the age of 25 should be recruited to increase the vitality of teamwork. Train the staffs on professional morality and technique knowledge regularly, establish and improve training mechanism, define safety responsibilities.

3.2 Upgrade construction equipment

At present, the equipment used by agro-electricians is too old and relatively out-dated. For example, agricultural electricians usually use manual saws and choppers to chop and foot climbing. These worn-out equipments lead to low construction efficiency and long construction time, which may also lead to construction accidents.

Electric power companies can distribute electric saws and other advanced equipment to agro-electricians to improve construction efficiency and reduce construction time. In addition, according to the construction environment of agro-electrician, the jumpers should be designed for agro-electricians, so as to reduce construction accidents.

3.3 Increase the number of agro-electricians

At present, the number of the agro-electricians is limited and the average age is relatively old. Enterprises such as State Grid South Grid should recruit more college graduates with certain construction ability to join the team of agro-electricians and strengthen the team construction.

3.4 Attach importance to knowledge of safety management training to ensure safety in production

Safety production is the eternal theme of electric power enterprises. Without safety production, enterprises can not develop healthily, continuously and steadily. We will strengthen the training of agro-electricians in their knowledge of safety production, and train them first and then take up their

posts for newly recruited agro-electricians. After they enter the post, organize agro-electricians to carry out effective special operation training and safety knowledge training examination. To further improve the professional qualities and skills of the agro-electricians team. Achieve the safe production and sustainable operation of the power grid construction, in order to effectively prevent the occurrence of various types of accidents.

3.5 Implement multi-person construction system

At present, most of the agro-electricians work independently during construction under their respective jurisdiction, resulting in agro-electricians can not be timely rescue when the safety accidents occurs. For this problem, power supply enterprises can implement multi-person construction system. So when lines or other power supply breakdown, all the members of the agro-electricians team will go out to repair the fault together to reduce the frequency of accidents.

3.6 Establish professional maintenance team

Based on the phenomenon that the comprehensive quality of most agro-electricians is low, a professional maintenance team can be established to maintain some faults beyond the scope of ordinary agro-electricians.

3.7 Reduce line maintenance in extreme weather conditions

When natural disasters such as earthquakes, debris flows and mountain torrents occur, the personal safety of agro-electricians should be taken into account. When the construction environment is relatively safe, the line can be maintained. In addition, we should complete the maintenance work of the line such as chopping before the summer arrival to reducing the occurrence of safety accidents.

4. Conclusion

Agro-electricians are the important part of power supply enterprises, as the main force of line operation and maintenance. Its construction safety should be the focus of attention of power supply companies. It is believed that with the efforts of all sectors of society, the construction safety problems of agro-electric construction will be further solved.

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