摘　要

随着最近这些年我国电力行业的迅猛崛起，原来火电厂的小机组已经满足不了我国的使用需求，因此火电机组的装机容量不断增加。目前大多数机组的装机容量为 600-1000MW。由于现如今煤炭消耗量的不断增加、煤炭运输能力严重不足以及火电厂要求尽量使用低品质煤炭的政等因素，非常多的大型电厂常常不可能只燃烧同一种煤炭，而是燃烧两种或两种以上的不同品质的掺混煤炭来降低能源消耗。

本文就大唐长春一热电厂 350MW 机组烟煤锅炉掺烧褐煤制粉系统防爆燃设计的实际问题展开了相关的研究。大唐长春一热锅炉制粉系统相对比来说结构比较简单，采用的是正压直吹设计，管路比较短，在制粉系统中也有相应的防止制粉系统爆燃的设计，比较合适进行掺烧褐煤燃烧发电。在其掺烧褐煤进行发电过程中，基于褐煤的水分和挥发分含量相比于其他煤种来说比较高，在制粉系统中容易产生爆燃，所以直接在锅炉 原有的设计煤种上进行掺烧褐煤会极大程度上影响锅炉的燃烧，甚至发生爆燃的危险。所以选择从锅炉的引风机入口抽取低温炉烟送到一次风机的出口来使制粉系统降低其末端含氧量到百分之十六以下。这样不仅仅可以大幅度降低掺烧褐煤发生爆燃的概率，同时又可以在很大程度上提高制粉系统的干燥出力，达到对制粉系统改造的目的。

通过电厂掺烧褐煤改造的相关实验，证明了电厂经过改造之后可以同时满足煤粉的干燥出力和掺烧褐煤之后的防爆问题，与此同时电厂的辅机耗电量降低，但煤耗率，经济性有了很大的提升。

关键词：掺烧褐煤 防爆燃 制粉系统

Abstract

With the rapid rise of China's power industry in recent years, the small units of

thermal power plants have not been able to meet the demand of China, so the installed capacity of thermal power units is increasing. At present, the installed capacity of most units is 600-1000MW. Due to the increasing consumption of coal, the serious shortage of coal transportation capacity, and the political factors that require low-quality coal in thermal power plants, many large-scale power plants often cannot burn only the same type of coal, but burn two or two. Mixing different types of coal to reduce energy consumption.

This paper has carried out related research on the practical problems of the explosion-proof design of the lignite-making system of the 350MW unit bituminous coal-fired boiler in Datang Changchun No.1 Thermal Power Plant. The Datang Changchun Heat Boiler Pulverizing System is relatively simple in structure. It uses a positive pressure direct blow design, and the pipeline is relatively short. In the milling system, there is also a corresponding design to prevent the deflagration of the milling system. Burning lignite combustion to generate electricity. In the process of power generation by mixing lignite, the moisture and volatile matter content of lignite is higher than that of other coals, and it is easy to generate deflagration in the milling system, so it is directly carried out on the original design coal of the boiler. The burning of lignite will greatly affect the combustion of the boiler and even the risk of deflagration. Therefore, it is chosen to take the low-temperature furnace smoke from the inlet of the boiler's induced draft fan and send it to the outlet of the primary fan to reduce the oxygen content of the end of the milling system to less than 16%. This not only can greatly reduce the probability of deflagration of the blended lignite, but also can greatly improve the drying output of the milling system, and achieve the purpose of the transformation of the milling system.

Through experiments related to the reformation of lignite blended in power plants, it is proved that the power plant can meet the drying output of pulverized coal and the explosion-proof problem after burning lignite. At the same time, the power consumption of the auxiliary equipment of the power plant is reduced, but the coal consumption rate and economy Sex has been greatly improved.

Key words: **Blended lignite; Explosion-proof burning; Powder system;**

第 1 章 绪　论

1.1 选题的背景和意义

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