

## **ABSTRACT**

**Of the thesis for the academic master's degree in the speciality:  
6M073100 – "Life safety of and environmental protection"**

**Theme of the master's thesis:  
«Highly effective capillary-porous controlled heat exchange dust and gas  
catchers»**

**Galiyev Ramil Aytbaevich**

Now the main problems of combined heat and power plants are: physical wear of the capital and pollution of atmospheric air, placement the zoloshlakovykh of waste.

The analysis of existing problems in the field of dust collection and dust suppression allowed to formulate the purpose of the work, which consists of:

1. Studying ways of dealing with dust, improving them and choosing measures to reduce dustiness.

2. Investigation of the foam properties and characteristics of surfactant solutions used for dust suppression, to develop ways to improve them, as well as to increase the efficiency of trapping gas bubbles of fine dust particles.

3. To identify the general patterns of the influence of methods for activating solutions of surfactants and foams (electric, magnetic and thermal) on the properties and the process of generating foam, allowing to increase the effectiveness of dust preparation.

4. Determine the most effective way to reduce the content of coal dust in thermal power plants and develop a framework for its use.

To achieve this goal, a number of tasks were identified, namely:

- analysis of the current state and the main problems of the Almaty CHPP-2;
- analysis of environmental indicators of CHPP-2;
- ways of a reconstruction of nodes of a discharge of belt conveyors;
- the optimal method of dust collection and dust suppression at the transfer points of the fuel conveyor belts;
- determination of environmental indicators of CHPP-2 after the introduction of foam suppression.

Object of a research is the Almaty combined heat and power plant 2.

The research method is a feasibility study for determining the effectiveness of foam suppression.

The theoretical basis of the study was the regulatory, regulatory and technical documents in the field of energy, ecology, technical reports and environmental reports of CHP-2, technical literature and works of foreign and Kazakhstan authors.

Key words: combined heat and power plant, foam generator, belt conveyor, environmental safety.

The thesis consists of an introduction, 5 sections, conclusion, list of used sources and applications. All sections are practical. The main content of the work is set out on 101 pages of typewritten text, illustrated with 7 tables and 39 figures.

The practical significance of the work lies in the fact that the results can be used in design, research and operational organizations in solving problems of prospective and environmentally safe development of the energy complex not only of ours, but also of other countries.

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(dissertation signature)

Galiyev R.A.