

AUTOMATION SYSTEM OF ENVIRONMENTAL ACTIVITIES OF INDUSTRIAL ENTERPRISES

Authors: Skarga-Bandurova I.S., Ryazantsev O.I., Krytska Ya.O., Siriak R.V. Korotkevych V.G.

Basic characteristics, essence of the development

The information system (IS) was developed to meet the terms of the current legislation and to support information and analytical processes of waste inventory at enterprises by tracking the amount of used substances and materials. The process of inventory is held at the location of objects.

The IS task is to analyse the enterprise environmental activities, to store data about raw materials, materials, waste and emissions and to automate the related processes.

Patentable and competitive results

The system enables to:

- Input and store data for state registration and certification of waste at the enterprise.
- Create and edit guides.
- Keep accounts of planned levels of emissions and calculate the predicted values for support of decisions concerning compliance with environmental standards and limits.
- Control the production cycle of any type of waste, from its formation to the stage of disposal or discharge into the atmosphere.
- Report the results of environmental activities in accordance with the law of Ukraine.
- Prepare documentation for obtaining environmental permits and limits.

Comparison with world analogues

While creating the IS, there were taken into account advantages and disadvantages of existing systems that are designed and implemented in various countries, including the EU and the USA: Workplace Hazardous Materials Information System, Actio Regulator, Mine Waste Inventory work package, An extranet waste inventory application, Hazardous Waste Self Audit Programs.

Economic attractiveness of the development for market promotion, implementation, parameters, price

System development was conducted according to Resolution of the CMU № 2034 “On Adoption of the Procedure of State Accounting and Classification of Wastes”. Accounting, inventory and documentation maintenance in the IS fully meet the regulatory framework and requirements of the current legislation of Ukraine.

Branches, ministries, departments, enterprises and organizations where the development results are going to be implemented

The product is designed for automated accounting and waste inventory at enterprises of all forms of ownership.

Development readiness level - (100%)

Implementation results

The user interface is designed in the form of web pages. At the top of the page there is a navigation menu, in the central part – a content block, divided into parts according to the page type. Examples of the form and report are given in Fig. 1, 2.

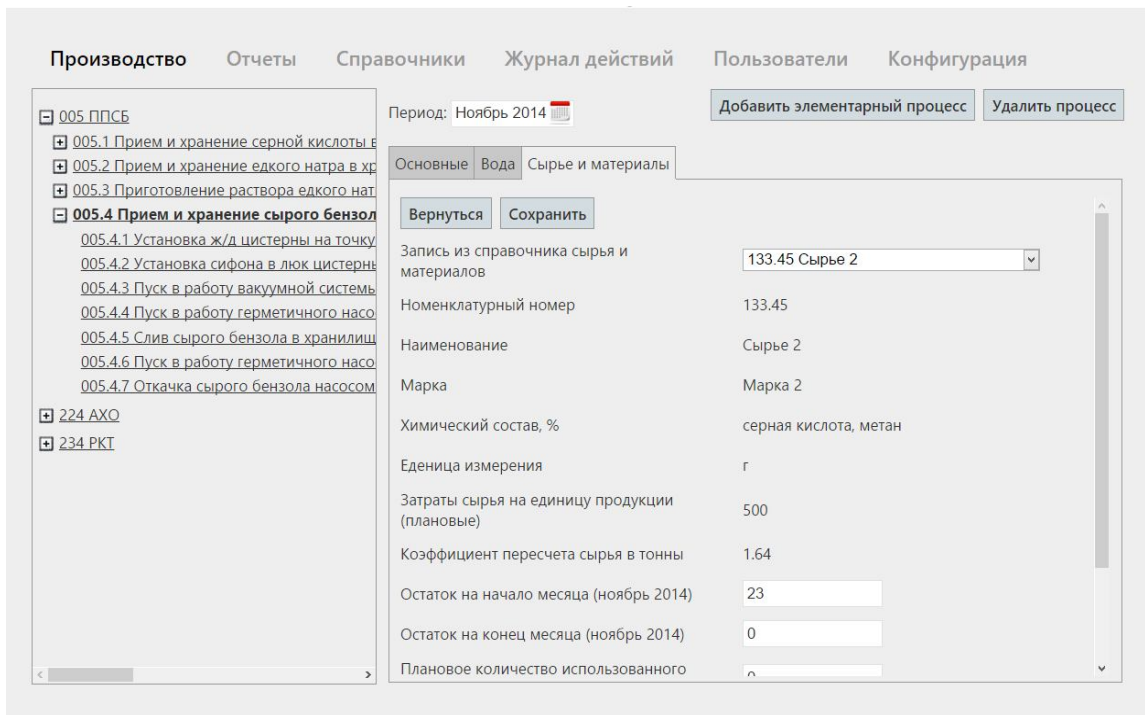


Figure 1 - Example of filling in “Production” page

The left side of “Production” page has a tree structure; the first level corresponds to existing departments, the next level – technological processes within departments, the last level – elementary processes within the technological process.

Ф12-Т11.2 Поток отходов.xls [Compatibility Mode] - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW LOAD TEST TEAM

N47 X ✓ fx

1 **Поток отходов**

2

3 Таблица № 11.2

4 Безпосередньо підприємством-утворювачем відходів

5 № з/п Код відходу (за Червоним та Жовтим переліком постанов КМУ від 13.07.2000 № 1120 та від 12.09.1997 № 1016) Код відходів за ДС 005-96 Назва відходів Потужності для тимчасового зберігання відходів (тонн) Зберігається на початку року (тонн) Зібрано протягом року від інших організацій (тонн) Утворено підприємством протягом року (тонн) Здійснено перевезь (тонн) Оброблено (тонн) Передано іншій організації на знешкодження Передано іншій організації на утилізацію Передано іншій організації на видалення або захоронення Утилізовано (тонн) Видалено (тонн) Знешкоджено (тонн) Захоронено (тонн) Залишилось на кінець року (тонн)

6 A B C D 1 2 3 4 5 6 7 8 9 10 11 12 13 14

7 24.21 123.43 Отходы производства 3,5-ДНБК (сметки) 10.00 100.00 25.00 321.00 72.00 17.00 18.00 18.00 18.00 56.00 164.00 120.00 24.00 28.00

8 48.77 116.77 Стеклобой 200.00 70.00 10.00 16.00 11.00 5.00 3.00 4.00 11.00 13.00 21.00 5.00 34.00

9 45.77 123.12 Отходы пластмасс 10.00 260.00 13.00 22.00 26.00 12.00 7.00 7.00 4.00 28.00 8.00 26.00 5.00 210.00

Лист1 100%

Figure 2 – Example of “Waste Stream” report