OPPORTUNITY OF CHANGE OF USE OF OBJECT ON DESTRUCTION OF LEWISITE IN KAMBARKA (UDMURTIA)

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1 Introduction

The Object on destruction of lewisite in Kambarka (Udmurtia) began work in 2006. According to the Program of the CWD in the Russian Federation, the ending of works on destruction of lewisite on object is planned in 2009. Neutralization of tanks of storage and waste products can be prolonged till 2010-2011. Thus, the CWD in Kambarka is necessary to consider the problem about possible change of use the object.

2 Discussion

Under the Program of the CWD the equipment and technical devices and systems of object in Kambarka will be used about 2-3 years. At the same time because of high risk of object on it the most modern equipment, in particular, for the control of toxic substances and a safety of object is used.

After the ending of works on the CWD the main equipment for destruction of lewisite should be demounted, neutralized and utilized. However monitoring systems of object, the additional equipment can be used for other purposes and processes. Terms of operation of the equipment (2-3 years) allow their such use as the industrial resource will not be completed.

In this connection to USA and the Russian Federation causes interest the further use of objects of the CWD after work on destruction of the weapon as these objects are equipped with a modern technological infrastructure, the high degree of protection of the personnel and a high level of protection of an environment from influence of manufacture is supposed. Objects also are equipped with modern laboratories (stationary and mobile) and the appropriate control equipment for work with toxic and dangerous substances. In tab. 1 available data on offers on changes of use of some objects of the CWD after the ending of works on destruction of CW for the Russian Federation and USA [1] are given. Industrial buildings and rooms, a technological infrastructure of object are of interest for subsequent use (boiler-

house; gas-, water- lines, transport ways, the industrial water drain, system of ventilation etc.), additional and control systems.

Table 1. Offers on use of objects of the CWD after end of works on destruction of CW

The country	The object of CWD	Offers on use
USA	Toole, Utah	Petrochemical manufacture. Neutralization of usual kinds of old arms
	Umatilla, Oregon	Industrial manufacture. Neutralization of waste products
Russian Federation	Gorny, Saratov oblast	Chemical manufacture of various production from reactionary weights of destruction of lewisite
	Schuchye, Kurgan oblast	Neutralization of waste products

Character of manufactures after change of use of objects the of CWD, with the purpose of reduction of expenses for re-equipment, reduction of terms of change of use of object and, hence, for reduction of additional involved means for change of a structure of object, can be to relatives to the basic processes of object on the CWD. According to it, after works on the CWD, on considered objects the following manufactures can be placed with use:

- chemical processes;
- petrochemical processes;
- processes neutralization of toxic industrial wastes;
- processes of processing and recycling of industrial wastes and secondary raw materials.

Industrial infrastructure of object of the CWD in Kambarka it is created under chemical ways of neutralization of highly toxic substances, thermal methods of neutralization of waste products. In this connection for reduction of expenses for change of use of object, replacement of the equipment, reduction of time of works, it is expedient, that character of new manufacture became close to initial. For such purposes for object change of use under neutralization, processing and recycling of industrial wastes, processing of secondary raw materials can be offered. In tab. 2 possible technologies on processing waste products which can be organized on object in Kambarka after destruction of lewisite are given. As for destruction of lewisite on object the technology of an incomplete cycle is used, on object can be realized processes on processing, recyclings and to neutralization of formed reactionary masses and arsenic containing salts. In [2] some kinds of production

which can be received at recycling reactionary masses of destruction of lewisite are given.

The object of the CWD can be used and under other kind of manufactures, but the given offer sees preferable since:

- does not demand essential changes in a technological infrastructure of objects;
- the personnel of object can consist, basically, from local population since not processes of neutralization and recycling of waste products do not assume difficult technologies;
- object is located near to transport communications of region;
- the actual problems of region connected to neutralization and recycling of industrial wastes will be solved;
- available on objects of the equipment for the control of toxic emissions in an environment allows to carry out monitoring of work of object for prevention of the possible negative consequences connected to processes of neutralization of toxic waste products.

Table 2. The brief characteristic of process of the CWD on object in Kambarka and offers on use of object after end of works on destruction of CW

The characteristic of processes on object of the CWD	Chemical decomposition of CW in water solutions; evaporation of water-salt solutions of reactionary masses; thermal methods of neutralization of waste products
Offers on use of object of the CWD	1. Recycling and neutralization of formed reactionary masses of destruction of lewisite. 2. Neutralization and processing of liquid and pastelike waste products of the manufactures containing heavy metals, with reception: - building materials; - pigments for manufacture of varnishes and paints; - chemical compounds of some metals; - means of processing of water; - industrial concentrates of nonferrous metals. 3. Neutralization mercury - containing of waste products with reception of waste products of low toxicity for a burial place. 4. Thermal neutralization of some industrial organic waste products. 5. Manufacturing of concentrates of rare metals from waste products of some processes

3 Conclusion

From the carried out analysis follows, that after work on destruction of lewisite the object in Kambarka can be used for other purposes. Terms of operation of the equipment and monitoring systems of object allow to consider such plans. One of possible directions of further use of object can be neutralization of toxic industrial wastes and processing arsenic containing reactionary masses of destruction of lewisite.

References

[1] Petrov V.G., Trubachev A.V. Change of use of objects on destruction of the chemical weapon in the Udmurt Republic for neutralization of industrial wastes// Izhevsk: Publ. IAM UrB RAS, 2009.-39 p.(Rus.)

[2] Petrov V.G., Khan V.P., Trubachev A.V., Chechina A.A. Decisions adopted in connection with the storage of arsenic-containing products formed as the result of lewisite destruction// Proc. of NBC 2003 Int. Symposium.- Jyvaskyla, Finland, 2003,- P. 197- 210.