

Management of Hazardous and Toxic Wastes using IZAT Software at PT. PJB UP Gresik

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Abstract: This paper will describe the application of IZAT software to reduce B3 waste, regarding to Indonesia Government Regulation No. 101 of 2014 on the Management of Hazardous and Toxic Wastes defines Hazardous and Toxic Substances. The IZAT software designed and use by PT PJB Gresik Power Plant, Gresik, Indonesia to reduced B3 waste as shown in Figure 1. The software is based on Android which was developed and used by the K3 Field PT PJB UP Gresik to monitor K3 infrastructure, including fire extinguisher. Using this application, fire extinguisher that has approached the expiration date can be taken and used for internal fire fighting training activities. Therefore, it can reduce the volume of B3 waste from expired dry chemicals. The utilization of IZAT application can reduce B3 waste and provide additional saving to PT. PJB UP Gresik. It exhibit the great spirit of green in PT. PJB UP Gresik. In future, The method can be applied to reduce waste in others material and increase saving

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I. Introduction

Indonesia Government Regulation No. 101 of 2014 on the Management of Hazardous and Toxic Wastes defines Hazardous and Toxic Substances (B3) as substances, energy, or other components due to their properties, concentrations or quantities, either directly or indirectly can pollute and damage the environment, danger to human and other living beings [1]. Waste of the industrial processes are residue from unused material, the production process, used equipment, drift apparatus, etc [2]. Waste in the industry can be categorized into two types, the first type is non-hazardous and non-toxic waste, the second type is toxic and hazardous waste [3]. Both types have different method of waste management. In PT. PJB UP Gresik and others companies, the second type of waste must be reuse as new purpose, or separated between the recyclable material and non-recyclable material. For materials that cannot be recycled, it can be stored in a storage medium or used as a blend material to create a new product [4].

The process of production, services and office system in PT. PJB UP Gresik produce two types of waste. The PT. PJB UP Gresik non-hazardous and non-toxic waste, i.e. plastic waste and paper waste etc. And the toxic and hazardous waste, i.e. engine oil, glass wool and battery waste etc [5]. PT PJB UP Gresik produces B3 Waste from the production process and its supporting processes. The waste has been managed in accordance with applicable laws and regulations. B3 Waste Management is carried out by storing in the warehouse / TPS (Temporary Storage Place) B3 Waste. According to PP 101 of 2014 that every producer of B3 waste is required to reduce B3 waste.

One of the B3 waste reduction programs that carried out by PT PJB UP Gresik is the reduction of expired dry chemical by utilize the IZAT (Zero Accident Assistant Application) application software. This paper will describe the application of IZAT software to reduce B3 waste, regarding to Indonesia Government Regulation No. 101 of 2014 on the Management of Hazardous and Toxic Wastes defines Hazardous and Toxic Substances.

II. Material And Methods

The IZAT software designed and use by PT PJB Gresik Power Plant, Gresik, Indonesia to reduced B3 waste as shown in Figure 1. The software is based on Android which was developed and used by the K3 Field PT PJB UP Gresik to monitor K3 infrastructure, including fire extinguisher. Using this application, fire extinguisher that has approached the expiration date can be taken and used for internal fire fighting training activities. Therefore, it can reduce the volume of B3 waste from expired dry chemicals.



Figure 1. IZAT Application software

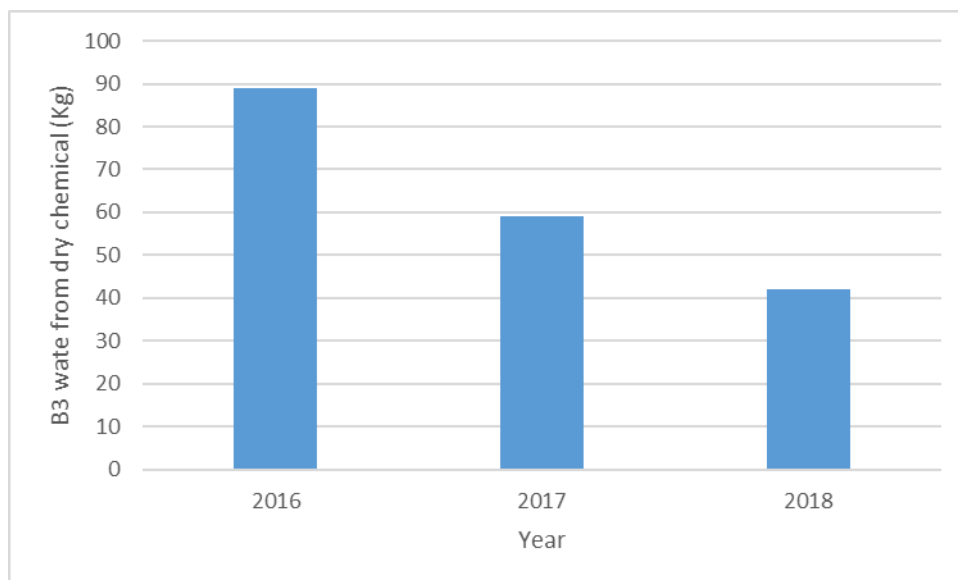
Implementation of this software start from May 2016. the K3 officer inspect the fire extinguisher regularly using the IZAT Application data base, as shown in Figure 2. Based on the application, the K3 officer can find out which fire extinguisher will expire and use it for fire fighting training. Therefore, the dry chemical of fire extinguisher can be reuse before it become B3 waste.



Figure 2. K3 officer inspect the fire extinguisher regularly using the IZAT Application data base

III. Results and Discussions

Since the implementation of IZAT in 2016, the amount of B3 waste reduced significantly as shown in Figure 3. Figure 3 shows the amount of B3 waste from dry chemical of fire extinguisher is 89 Kg, 59 Kg and 42 Kg for correlated year 2016, 2017 and 2018, respectively. The utilization of IZAT application in 2017 can reduce B3 waste about 59 Kg and it can convert into savings equal to Rp.686,000. In term of amount of reducing B3 waste, it may small quantity, however it exhibit the great spirit of green in PT. PJB UP Gresik. The method can be applied in others material to avoid B3 waste and the amount saving will increase proportionally.



IV. Conclusion

The utilization of IZAT application can reduce B3 waste and provide additional saving to PT. PJB UP Gresik. It exhibit the great spirit of green in PT. PJB UP Gresik. In future, The method can be applied to reduce waste in others material and increase saving .

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