

EMISSION OF DIOXIN AND LIKES FROM INCINERATION FACILITIES FOR MUNICIPAL SOLID WASTE IN JAPAN

Masaru Tanaka, Yasuhiro Kashiwagi, Saeko Yoshizawa

Department of Environmental & Civil Engineering,
Okayama University, 3-1-1, Tsushima Naka,
Okayama City, 700-8530 Japan

Since 1980's, there has been public awareness about adverse health effects of dioxin and likes (Dioxins). Moreover due to industrial development, the Dioxins discharges to the environment have become more severe. In order to take counter measures against Dioxins, in December 1990, Ministry of Health and Welfare, Japan issued the guideline stipulating variety of measures to prevent Dioxins emission to the maximum possible extent. Further in 1997, the measures to tackle emergency situation for Dioxins outbreak were devised. The measures were so set that the Dioxins exposure would not exceed TDI (10pg-TEQ/kg/day) through on site especially for waste incineration facilities; the hot spots for Dioxins emissions. In addition, permanent measures were also devised to reduce nation wide Dioxins emissions. Subsequently, *Concerning Special Measures against Dioxins Law* were originated and finally come in force in 2002. Basically, this law stipulates the permissible environmental standard for Dioxins in air, water, soil and solid waste to be disposal. In addition effluent standards for thermal processing of waste has brought into place. Thus it can be seen that over the years, the standards for Dioxins emission have become stringent. On the other hand, public opposition for installation of thermal processing plant has also become sever due to the public perception toward Dioxins emission. This has result in the installation, operation and maintenance of thermal processing plant for lower Dioxins emission, however at very high cost without giving due consideration to the risks involved in it. Therefore at this juncture, it has become necessary to rationalize the policy based on the risks involved. Against this backdrop the investigations are carries out to estimate dioxin emission based on theoretical conditions. In this method the dioxin content of waste are

estimated. And further theoretical amount of dioxin that would be emitted was estimated. The procedure is validated for Okayama city. Further, the exercise is extended to estimate the Dioxins emission on national bases. The year with the most discharges of Dioxins of Okayama-city is 1972, and the quantity of discharge is 431g-TEQ/year. Total discharge in 2002 is 0.151g-TEQ/year. So, the Dioxins emission in 2002 is a one-2800th of the one in 1972. The year with the most discharges of Dioxins of Japan is 1978, and the quantity of discharge is 135,000g-TEQ/year. Total discharge in 2002 is 656g-TEQ/year. Thus, the Dioxins emission in 2002 is a one-200th of the one in 1972. Therefore, it is said that Dioxins is well controlled now.