

Research on the investigation of counter plans for the dioxin exposure from sewage sludge incinerators

Whole term

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(Purpose)

According to the regulations of labor safety and sanitation established on 25th April in 1988, the process of sewage sludge incineration (treatment, repair, inspection and disjoints) should be prepared to face the issue of dioxin exposure.

Dioxin concentration discharging from sewage sludge-incinerating-facilities was very low compared to a general waste-incinerating-facility; it is impossible to present scientific data that show dioxin characteristics when discussion with Labor standards Bureau is conducted before disjoining a sewage incinerator because there are limited data on dioxin concentration arranged systemically. In addition, the tasks such as operations, inspections and so on which are included in new regulations; and data on a counter plan for prevention of dioxin exposure and so on are not exactly prepared. Especially, local governments ordering disjoint activities, and private companies receiving those orders, are very sensitive to this issue. In this study, data on dioxin concentrations, counter plan for each work, disjoints process and etc. were summarized as a technical document.

(Contents)

A counter plan for the dioxin exposure was summarized for each situation such as repairing which accompanies operation of the facility, inspection, disjoints activities and etc. In addition, a procedure of disjoints activities of the sewage sludge incinerator, an applicable method of disjoints and etc. should have been understood. Therefore, the following contents were included in this study.

1) Investigation and summary

(1) Summary of the related regulations

(2) Investigation and summary of the maintenance of incineration and collection of sewage sludge, and summary of dioxin data

(3) Operational and inspecting activities, and a summary of a counter plan for the dioxin exposure during repairs accompanying disjoints activities

(4) Investigation and summary of a counter plan for the dioxin exposure during disjoints activities and its procedure

(5) Investigation and summary of the methods of disjoints.

2) Preparation of the technical document.

(Results)

1) Dioxin concentration in the sewage sludge-incinerating facility

Through the direct surveys by local governments and data analyzed by co-research companies (62 data on moving bed, 33 data on multi stage incinerators, 16 data on stoker incinerators, 7 data on furnace incinerators), the actual condition was understood.

2) Counter plan for the dioxin exposure

Different tasks such as operation, inspection etc. and repairs accompanying disjoints activities, constructions involving disjoints activities, a counter plan for the dioxin exposure were summarized. In addition, the work procedure and the disjoints methods which could be applied to sewage sludge incinerating facilities during the constructions involving disjoints activities of the sewage sludge incinerating facility were summarized.

3) Preparation of a technical document

In addition to above 1) and 2), as the appendix, related regulations, samples applied by the committee of a counter plan for dioxin, and an effective measurement plan etc. were supplemented

and a technical document was worked out.

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Keywords

Sewage sludge incinerating system, Dioxins, Measure for preventing exposure