

BIO-MEDICAL WASTE MANAGEMENT

Performance of Bio-medical Waste Treatment Facilities in Central Zone

In central zone, eighteen Common Bio-medical Waste Treatment Facilities (CBWTFs) have been established. Out of eighteen, thirteen are operating in Madhya Pradesh, three in Rajasthan and two in Chhattisgarh. Two Common Bio-medical Waste Treatment Facilities facilities one at Udaipur and other at Ajmer in Rajasthan have been started recently. CBWTFs are having incinerator with other supporting facilities like autoclave, shredder, chemical treatment, deep burial etc. The Central Pollution Control Board Zonal Office Bhopal has carried out the monitoring of the facilities. Common observations and recommendations are given below.

- Short-term contract to operate CBWTF should be avoided. Minimum three years time period should be given to contractor for running the facility by the State Govt./ Nursing Home Association.
- In place of CBWTF, only incinerators are being operated in Medical Colleges at Jabalpur & Gwalior in the heart of city in residential areas. State pollution Control Board may take action to either get these close or shift the incinerators away from residential area with required infrastructure as per CPCB guidelines.
- Most of the CBWTFs are not having efficient ETP to treat the wastewater before discharging into drain / reusing in facility for horticulture or other purpose. They may be advised to modify the existing ETP/ install the efficient ETP to treat the wastewater.
- Presently none of Health Care facility in the cities in central zone has more than 10,000 beds, therefore, it is desirable to have only one CBWTF in one city, whereas Bhopal, Indore, Gwalior and Jabalpur have more than one CBWTF. Prescribed authority of the state may ensure not to allow more CBWTFs in a city.
- It was informed by the CBWTFs facilitator that some of the hospitals / nursing homes are not sending the Bio Medical Waste as per the Bio Medical Waste Rules. CBWTFs may inform the prescribed authority in writing, so that appropriate action could be taken against the defaulting hospitals/nursing homes by the concerned SPCB.
- During the monitoring of incinerators installed in inspected CBWTF, it was observed that the combustion efficiency varies from 19 to 92%. None of the incinerators are complying the prescribed norms. SPCB may be advised to instruct these facilities to maintain the appropriate

temperature before feeding the waste, so that the desired combustion efficiency of the incinerator may be achieved.

Monitoring of Bio-medical Waste Treatment Facilities in South Zone

In South region, 35 Common Biomedical Waste Treatment Facilities (CBWTF) have been set up in various cities of Andhra Pradesh (14 nos), Tamilnadu (11 nos), Karnataka (9 nos) and Kerala (1no) mainly by private agencies. Out of these, 3 were monitored during year 2006 and the observations are as belwr.

- Power back-up arrangement is not available at many CBWTFs
- Record keeping of waste is not as per guidelines in almost all facilities
- The waste received for treatment and disposal at the 'common sites' are either un-segregated or partially segregated.
- The wastes are not fed through conveyer
- Operation and maintenance of incinerators are not proper in most of the cases and the prescribed emission norms/standards are not complied
- No facility exists for auto recording of operational condition
- Stack monitoring facilities such as monitoring platform and porthole are not proper
- Ash disposal practices need improvements
- ETP though installed are not operated properly

Monitoring of Common Bio-medical Waste Treatment Facilities (CBMWTFs) in West Zone

In Gujarat state, 04 out of total 11 CBMWTFs were monitored for the verification of compliance of the incinerators. HCl in two out of four monitored incinerators have been observed to be exceeding the prescribed limit, whereas, PM and NOx were found to be compliant. The performance monitoring carried out at the ETPs reveal the compliance to the norms at the time of monitoring.

Monitoring of Common Bio-medical Waste Treatment Facilities (CBWTFs) in NCR Region

The CBWTFs operated by M/s SembRamky Environmental Management (P) Ltd. and located at Ghaziabad, UP has also been authorized by Delhi Pollution Control Committee to collect, transport and treat the bio-medical wastes from Delhi's Health Care Facilities (HCFs). In order to assess the capacities and

evaluate functioning of M/s SembRamky Environmental Management (P) Ltd. and the other two CBWTFs operational in Delhi (i.e. M/s Synergy Waste Management (P) Ltd. & M/s Bio-Care Technological Services) were inspected. Compliance to the provisions of Bio-medical Waste (Management & Handling) Rules, 1986 was assessed.

Monitoring of Common Bio-medical Waste Treatment Facilities in North Zone

Monitoring of common Biomedical Waste Treatment facilities at Punjab and Chandigarh were carried out by Central Pollution Control Board Zonal Office Lucknow during November 2006. Presently there are four common facilities in Punjab and one in Chandigarh. All these facilities have installed double chambered incinerator with Air pollution control system, autoclave, shredders and ETP. Out of four facilities three have adopted conveyer waste feeding system while one at Mohali is using mechanical batch lifting process for waste feeding. During inspection it was noticed that segregation of bio-medical waste in different Hospitals and maintenance of records of biomedical waste areas need improvement.

Common Incinerators / Common Biomedical Waste Treatment Facilities at Punjab & Chandigarh

Name & address of facility	Equipment installed & their capacity	No of medical establishment Connected	No. of Beds covered	Total quantity of waste treated	APCS in Incinerator
Punjab					
SembRamky Environmental Management Pvt. Ltd., Ludhiana	Incinerator 200 Kg/hr Autoclave 500Ltrs/ batch Shredder (2) 400&50 kg/hr	1374	24461	2000-2300 kg/day	Yes
Rainbow Environments (A Unit of Raidical Builders India Pvt.Ltd.Mohali	Incinerator 65 Kg/hr Autoclave 50kg/ batch Shredder (2) 25&50 kg/hr	475	4320	600-800 kg./day	Yes
Bio-Medical Waste Treatment Plant Pvt. Ltd. Village-Pangoli, Pathankot.	Incinerator 200 Kg/hr Autoclave 75kg/ batch Shredder 100 kg/hr	171	1780	150 kg/day	Yes
Amritsar Health Care Systems, Village-Ibban kalan, Chabhal Road, Amritsar	Incinerator 100 Kg/hr Autoclave 150kg/ batch Shredder (3) 100, 50&50 kg/hr	300	3700	450-500 kg/day	Yes

Name & address of facility	Equipment installed & their capacity	No of medical establishment Connected	No. of Beds covered	Total quantity of waste treated	APCS in Incinerator
Total		2320	34261	3750	
Chandigarh					
PGI-Chandigarh	Incinerator (2) 200 Kg/hr	319 (+PGI)	1402	650 kg/day	No
Alliance Envirocare Company Pvt. Ltd. Plot no. 181/10, Industrial Area, Phase-1, Chandigarh.	PGI Incinerator is used. Autoclave: 40 kg per batch. Shtredder: 15kg/ hr	319	649	150 kg/day	Only non incinerable part is treated in the facility

In Chandigarh, PGI has installed incinerator for treatment of incinerable waste of PGI Chandigarh and 319 medical establishments in Chandigarh. Non-incinerable waste is treated in common facility (M/s Alliance Envirocare Company Pvt. Ltd.). The common facility has area constraint and need improvement in record keeping, wastewater treatment etc. The PGI incinerator need to upgrade air pollution control system and improve operation and maintenance of incinerator.

Stack Emission Monitoring of Incinerators Installed in Common Bio-medical Waste Treatment Facilities (CBWTFs) in NCR Region

In order to check the compliance of emission standards stipulated in the Bio-medical Waste (Management & Handling) Rules, 1998, the Central pollution Control Board carried out stack emission monitoring of incinerators installed at M/s SembRamky Environmental Management (P) Ltd. at Ghaziabad, UP, M/s Synergy Waste Management (P) Ltd., Delhi and M/s Bio-Care Technological Services, Delhi.

Evaluation of Draft Operational Guideline for Infection Management and Environment Plan for Community Health Centres, Sub-Centres & Primary Health Centres

Ministry of Health & Family Welfare (MoH&FW), Govt. of India has developed a Draft Operational Guidelines for Infection Management and Environment Plan under the Reproductive Health Programme (RCH) Phase II of the Govt. of India. This is a nation-wide programme under the National Rural Health Mission (NRHM). These documents were studied by CPCB and necessary comments and suggestions were forwarded to MoH&FW.

Monitoring of CBWTF at Gazipur, New Delhi to Assess Suitability as per the CPCB Guidelines on the Matter of Authorization by DPCC

Installation & operation of a Common Bio-medical Treatment Facility (CBWTF) at Gazipur, New Delhi was awarded by Directorate of Health Services, Govt. of India to a private firm. Technical inputs upon site visit were given to Delhi Pollution Control Committee in order to decide the suitability of the CBWTF site for collection, transportation and treatment of bio-medical wastes.

Evaluation of State of the Art Technology for Treatment of Bio-medical Waste

A proposal for use of "Plasma Pyrolysis Technology" for the treatment of bio-medical waste was received through Programme of Technology Information Forecasting and Assessment Council (TIFAC), Department of Science and Technology (DST), Govt. of India. The proposed technology has been developed by Facilitation Centre for Industrial Plasma Technology (FCIPT), under the Home Grown Technology (HGT). The suitability of the "Plasma Pyrolysis Technology" was discussed in 8th meeting of Expert Committee at CPCB, Delhi during April 2006. Finally, FCIPT was asked for some information in order to decide suitability of the proposed technology for treatment of bio-medical waste.