

STATUS OF BIO-HAZARDOUS WASTE MANAGEMENT IN THE OECS

Introduction

In recent years, the member states of the OECS have made great progress in improving their solid waste management practices. The islands of Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines, under the OECS Solid and Ship Generated Waste Management Project, are making a number of positive steps towards improving solid waste management practices. These include the establishment of management authorities or corporations, siting of new landfills, the development of waste diversion (reduction, recovery, reuse, recycling and composting) action plans and definition of equipment requirements. Most of the work completed to date has focused on the management of ordinary municipal wastes, that is, the non-hazardous solid waste stream generated by residential and ICI(industrial, commercial and institutional) sources including health-care facilities (hospitals, clinics, doctors offices, etc.). Under the recent extension of the regional component of the project, the OECS is expected to provide continued technical assistance to participating member states until October 31, 2002, the new completion date of the project. This extension period will certainly allow more time for the thorough development and implementation of Biomedical Waste Management Plans in participating OECS member states.

The Problem

Bio-hazardous waste forms a fair part of the waste stream of the OECS territories. For example, in St. Lucia the total combined amount of bio-hazardous waste being generated inclusive of condemned meats and quarantined foodstuffs is approximately 3.5 tonnes per week. Such wastes require proper handling and disposal because of environmental, aesthetic, and occupational concerns as well as risks to human health.

Throughout the OECS various Bio-hazardous waste generators have implemented adhoc waste management practices which are sometimes modeled after internationally accepted waste management practices. However, throughout the OECS, current waste management practices fall well short of these internationally accepted practices, resulting in unacceptable risks to human health through direct or indirect exposure to bio-hazardous wastes. Poor waste management practices include:

- improper packaging of Bio-hazardous waste;
- improper segregation of Bio-hazardous wastes;
- improper on-site waste handling and movement;
- improper on-site storage of Bio-hazardous wastes;
- improper off-site transportation of Bio-hazardous;
- improper treatment and disposal of Bio-hazardous wastes;
- poor in-house monitoring of current waste management practices.

What is Bio-hazardous Waste?

Part of the wastes from health care facilities is referred to as biomedical or Bio-hazardous. Bio-hazardous wastes can cause risks to human health by being potentially infectious. Bio-hazardous wastes can be classified accordingly:

- 1) Infectious Waste - wastes known or suspected to contain pathogens in sufficient quantities to cause disease. For example, laboratory cultures.
- 2) Pathological Waste - human tissues or fluids and anatomical parts.
- 3) Sharps - waste capable of causing cuts or puncture wounds. For example, needles, scalpels, slides.
- 4) Pharmaceutical Waste - includes expired, unused and contaminated pharmaceutical products including vaccines and sera.

Other non-biological hazardous health care waste is classified as genotoxic, chemical and radioactive. Bio-hazardous wastes not generated during regular healthcare activities, which require special care, are classified into two waste streams:

- a) Condemned Meats – include quantities of fish, meat and poultry deemed as not meeting national health requirements.
- b) Quarantined Foods – include plant produce material deemed as representing a risk to agriculture and/or the national ecosystem.

Approaching The Problem

The OECS Solid and Ship Generated Waste Management project comprises a number of national components, which are similar for each of the OECS Countries, and a regional component, which covers issues common to all. The regional component is implemented by the OECS through the Natural Resources Management Unit (NRMU) based in St.Lucia. The Governments of the OECS territories through the NRMU are currently in the process of establishing management systems for biomedical waste. The objective of this initiative is for hazardous health-care waste to be managed with the resultant significant reduction in health risks and with cost-effective systems and practices. The systems to be employed will be a comprehensive one with a “cradle to grave approach”. The emphasis will be on providing essential knowledge, establishing workable and sustainable procedures and providing training to operatives that will ensure ongoing maintenance to acceptable standards.

Treating Bio-hazardous Waste

Treatment and disposal practices vary across the OECS territories. Typically most Bio-hazardous waste is burned in open fires or in poorly functional, rudimentary incinerators. Other practices include landfilling with municipal solid wastes or burying waste on-site at the healthcare facilities. In the U.S.A and other developed countries autoclaving (steam sterilization) is now the preferred treatment technology as opposed to incineration. One such equipment is known as the Hydroclave. This equipment achieves high sterility by

vigorously mixing and fragmenting the waste inside a doubled walled hot vessel. The result is a very high sterility, dry, low odour waste with a volume reduction of about 85%. Such technology does not have to meet stringent emission regulations as there are no emissions and has a low operating and maintenance cost. This treatment technology is currently in use around the globe, from India to Mexico, Canada, Europe, and the U.S.A. It is hoped that OECS territories follow the path of St. Lucia and adopt such a simple and effective treatment technology.

Current Status

In **St. Lucia** development of a Bio-medical and other Biohazardous Wastes Management Plan has been completed. The Bio-medical waste treatment technology, namely the hydroclave, will be employed. The equipment is currently being sourced so as to allow full implementation of the plan by October 31, 2002.

In **Dominica, St. Kitts and Nevis, St. Vincent and the Grenadines** and **Grenada** the development of a Bio-medical waste management plan is well underway with full implementation expected by a similar date.

Conclusion

Effective management of solid waste including Bio-hazardous waste is not possible without the passage of proper legislation. In view of this the OECS territories have begun addressing such an important issue. In Grenada and St. Vincent and the Grenadines Shore Generated Waste Legislation has already been enacted. In the other territories such legislation along with legislation for Ship-Generated Waste is expected to be enacted before the end of the project.

With the full enactment of legislation in the territories and regulations specific to the handling of Bio-hazardous wastes the OECS-NRMU is positive that poor biomedical waste management practices will soon be a issue of the past as new approaches to biomedical waste management is fully implemented on a sustained basis in the territories.