

## Section III

### Training Plan

(For training operators of the De Montfort waste disposal unit)

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### 3.1 Training program planning and organization

A formal training program is mandatory for operators of the De Montfort waste disposal unit (DWDU). The training program should include all operators, irrespective of whether they are new or experienced.

The organization contracted to install and maintain the DWDUs, or any other organization responsible for training DWDU operators, should administer the training program, which could be held over a two-day period.

A one-day re-training program for all DWDU operators is required on a regular basis (at least once a year for one day) to ensure internalization of “Best Practices.”

Training materials include:

- *Managing Health Care Waste Disposal: Guidelines on How to Construct, Use, and Maintain the De Montfort Incinerator* which comprises Section I: The Waste Disposal Unit: Using the De Montfort Incinerator; Section II: Installation; Section III: Training Plan; and Section IV: Maintenance and Planning. Appendices with construction drawings are also included
- *An Operator’s Manual*, provided by the programme sponsor or through PATH<sup>1</sup>, and
- Trainer presentation materials, also provided by the program sponsor or through PATH<sup>2</sup>.

### 3.2 Participants, facilitators, and materials

Each operator training program should be limited to no more than 10 operators. All trainee operators are to be provided with an *Operator’s Manual* during the training program.

It is recommended that two facilitators conduct the Operator Training Program.

Each training program should be organized close to a location equipped with a functional DWDU built to specification, and equipped with the tools, equipment and materials required to correctly operate it. A supply of fuel, a stock of sharps as well as soft medical waste (sufficient for six burning sessions), and safety equipment should be available for demonstrations (A full list of tools and equipment is provided in the *Operator’s Manual*). It is also important to have simple classroom and projection facilities for presentation purposes.

All DWDU trainee operators attending a training program should be provided with protective clothing, an *Operator’s Manual*, which includes registers to keep records.

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<sup>1</sup> Program for Appropriate Technology in Health ([jilloyd@path.org](mailto:jilloyd@path.org))

<sup>2</sup> Program for Appropriate Technology in Health, for copies of the latest material, contact Mr. John Lloyd at PATH. Email [jilloyd@path.org](mailto:jilloyd@path.org).

### 3.3 Calendar for trainers of DWDU operators

Table 3.1 below provides trainers with the topics and training schedule to be followed when running an operator training program.

**Table 3.1 Training calendar and content**

<b>DAY 1</b>		
<b>Time</b>	<b>Topic</b>	<b>Location</b>
9:00 - 9:10	Registration	Classroom
9:10 - 9:30	Introduction to training	Classroom
9:30 - 10:00	Health care waste management	Classroom and visit to health facility
10:00 - 10:20	Safety	Classroom
10:20 - 10:30	<b>TEA</b>	
10:30 - 11:30	Introduction to DWDU and its parts	Site visit to DWDU
11:30 - 11:45	Management of waste in DWDU	Site visit to DWDU
11:45 - 12:15	Introduction to <i>Operator's Manual</i> and operator's tasks and responsibilities	Classroom
12:15 - 12:35	To burn or not to burn	Classroom and site visit
12:35 - 13:00	Review	Classroom
13:00 - 14:00	<b>Lunch</b>	
14:00 - 14:20	Preparing to incinerate	Site visit
14:20 - 14:50	Getting started	Site visit
14:50 - 15:50	Loading and destroying medical waste	Site visit
15:50 - 16:00	<b>TEA</b>	
16:00 - 16:30	Loading and destroying medical waste	Site visit
16:30 - 17:00	Burn down/ cool down	Site visit
<b>DAY 2</b>		
9:00 - 09:20	Cleaning, ash removal and operator maintenance responsibilities	Site visit
09:20 - 09:40	Record keeping and monthly reporting	Site visit
09:40 - 09:50	Security	Site visit
09:50 - 10:00	<b>TEA</b>	
10:00 - 13:00	Practical experience	Site visit
13:00 - 14:00	<b>Lunch</b>	
14:00 - 15:30	Practical experience	Site visit
15:30 - 15:40	<b>TEA</b>	
15:40 - 16:40	Review session	Classroom
16:40 - 17:10	Maintenance practices and Security	Classroom and site visit
17:10 - 17:40	Feedback on course and trainee information sheets	Classroom
17:40 - 18:00	<b>Closing remarks</b>	

### 3.4 Training program description

All classroom presentations will be supported by slides, which are provided in the “*Trainer presentation materials*”.

### 3.5 Day 1: Agenda items

#### 3.5.1 Introduction (20 minutes: classroom)

Twenty minutes will be devoted to the introduction. It will begin with an “ice breaker” so that participants get to know each other and feel comfortable together. The facilitator will introduce the topic and talk of best practices. The brief outline of the workshop and other logistics will be shared with the participants, and the training course materials distributed.

#### 3.5.2 Health care waste management (30 minutes: classroom and visit around health facility)

This session will discuss how to plan Health Care Waste Management. It will examine the steps in the management process and the operator’s contribution to “responsible health care”. The following elements of waste management will be covered:

- The purpose and importance of good waste management practices.
- Mapping of waste generated within a district and collected at a waste disposal unit (WDU).
- Existing and planned waste segregation and packaging arrangements.
- Human resources and the tasks and responsibilities of the personnel with regard to waste management
- How waste is to be transported to the DWDU
- The alternative methods used to destroy waste, and the advantages and disadvantages.

#### 3.5.3 Safety (20 minutes: classroom)

This session will cover the importance of safety measures to minimize the risks to operators, health workers, the local community, the DWDU and the environment. The topics include:

- 1) Responsible conduct of operators
- 2) Cleanliness of the work area
- 3) Possible effects of toxic emissions on:
  - DWDU operators.
  - Local communities through inhalation exposure, but mainly through consumption of contaminated food.
  - Regional global environment, through the discharge of toxic and persistent chemicals.
- 4) Procedures for dealing with suspected contaminations.
- 5) Personal safety includes vaccinations against hepatitis B, routine hygiene and regular medical examinations.

BREAK (10 minutes)

#### 3.5.4 Introduction to the DWDU and its parts (60 minutes: site visit to DWDU)

The participants will learn about the DWDU. Each component will be defined and described. The participants will also learn about the tools and other related equipment. An experienced operator will demonstrate how to use the incinerator.

#### 3.5.5 Management of waste in the DWDU (15 minutes, site visit to DWDU)

For safe management of incoming waste, the DWDU operators need to follow the steps outlined in the *Operator's Manual*. The operator has to note down the type, quantity, and origin of the waste.

#### 3.5.6 Introduction to the *Operator's Manual* and the operator's tasks and responsibilities (30 minutes: classroom)

All trainee operators are entitled to receive an *Operator's Manual*. This session will outline the tasks of the operator, which include adhering to "Best Practices", minimizing risk and maintaining records.

#### 3.5.7 To burn or not to burn (20 minutes: classroom and site visit)

Only if the criteria listed in the *Operator's Manual* are met should the incinerator be lit. All the safety measures must be followed. Each of the 8 topics for consideration should be reviewed and checked.

#### 3.5.8 Review (25 minutes: classroom)

This session will cover the overall review of 1<sup>st</sup> day pre lunch sessions. The trainer will clarify the doubts and queries raised by the participants.

LUNCH BREAK (60 minutes)

#### 3.5.9 Preparation (20 minutes, site visit including checks and weighing)

During this session, the facilitator goes through the preparatory steps inclusive of the checklist of materials that must be available at the DWDU. S/he also stresses the fact that wet health care waste should not be burned, petrol (gasoline) should not be used, and protective clothing should be worn.

#### 3.5.10 Getting started (30 minutes: site visit group demonstration)

The trainee is taken step-by-step through the process of lighting up and stabilizing the temperature at 600°C.

#### 3.5.11 Loading and destroying medical waste (90 minutes: site visit group demonstration)

This one-hour session examines the "Best Practices" for loading and destroying medical waste. All the do's and don'ts with regard to the following are demonstrated:

- Rate of loading.
- Reading and sensing temperatures.

- Mixtures of waste.
- Safety and precautions.

### BREAK (10 minutes)

#### 3.5.12 Burn down/cool down (30 minutes: site visit group demonstration)

This session covers what needs to be done after the entire waste has been burned up, including the dos and don'ts and the procedures.

### 3.6 Day 2: Agenda items

The sessions on Day 2 are devoted to the post-burning activities, including clean-up, and the very important activity of record keeping and reporting.

#### 3.6.1 Cleaning, ash removal, and operator maintenance responsibilities (20 minutes: site visit demonstration)

The session emphasizes the importance of wearing protective clothes, and checking procedures to ensure that all parts of the DWDU are operating correctly.

#### 3.6.2 Record keeping and monthly reporting (20 minutes: site visit)

The session discusses the content of the three reporting registers and the procedures for reporting.

#### 3.6.3 Security (10 minutes: site visit)

Security of the DWDU is reviewed.

### BREAK (10 minutes)

#### 3.6.4 Hands-on practical experience: Operating the DWDU (180 minutes: site visit)

- 1) Divide participants into 3 groups.
  - Group 1: Follows the procedures described in the *Operator's Manual* and operates the DWDU.
  - Group 2: Records each step of the procedure performed by Group 1 and identifies procedural errors.
  - Group 3: Records the smoke levels, gauge temperatures, loading rates, usage of fuel, and medical waste.
- 2) Reverse the roles of each group and repeat the procedures in the *Operator's Manual*.

### LUNCH (60 minutes)

#### 3.6.5 Hands-on practical experience: Continued (1.5 hours)

- 3) Reverse the roles of each group outlined above and repeat the procedures in the *Operator's Manual*.

## BREAK (10 minutes)

### 3.6.6 Review session: (60 minutes: classroom)

Group discussion: The working groups exchange experiences with regard to

- Actual operation of the DWDU.
- Procedures.

### 3.6.7 Maintenance practices and security (30 minutes: classroom and site visit)

- Likely defects to look for in the DWDU.
- Security measures and procedures.

### 3.6.8 Feedback and trainee information sheets (30 minutes: classroom)

In this session the trainer requests all participants to complete a feedback form (Form 1) and Trainee Information sheet (Form 2).

The facilitator thanks the participants and summarizes the training modules and proceedings.

## 3.7 Retraining of DWDU operators

If operators are well trained, more than half the job is done. Well-trained operators will adhere to “Best Practices”, thereby reducing emissions and risk. Operators do, however, need to be re-trained periodically. Retraining has two purposes: it serves to maintain motivation levels, and helps identify—and hopefully correct—poor practices.

Retraining of DWDU operators is recommended for one day annually.

A single facilitator can run the retraining programs.

Retraining programs also provide an opportunity to integrate a small number of new operators who have not participated in the earlier training.

Topics addressed under the re-training programs should broadly cover those presented in the initial DWDU training program. There should however be greater emphasis on sharing experiences and learning. The likely content of a retraining program is outlined below:

- Review of steps in the *Operator’s Manual*.
- Demonstration by operators of “Best Practices.”
- Review of DWDU faults, defects, and problems encountered.
- Review of operational shortcomings observed since previous training.

**Form 1: Training Feedback**

**DWDU Training feedback Sheet**

**(DO NOT WRITE YOUR NAME ON THIS SHEET)**

I. ORGANISATION

	Opinion	Comments
<b>Directions/arrangements to reach the location/venue of the training program</b>	<input type="checkbox"/> Clear <input type="checkbox"/> Manageable <input type="checkbox"/> Difficult	
<b>Did the program begin at the correct time on both days?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> Yes – only on one day <input type="checkbox"/> No	
<b>Lecture schedule was followed as planned</b>	<input type="checkbox"/> Yes <input type="checkbox"/> Some minor changes <input type="checkbox"/> Not followed	
<b>On site visits were followed as per schedule</b>	<input type="checkbox"/> Yes <input type="checkbox"/> Some minor changes <input type="checkbox"/> Not followed	
<b>Overnight accommodation provided, <u>if any</u></b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Unsatisfactory	
<b>Arrangement for lunch, snacks, etc.</b>	<input type="checkbox"/> Good <input type="checkbox"/> Adequate <input type="checkbox"/> Unsatisfactory	

II. FACILITIES

	Your rating	Comments
<b>Facilities at the classroom including audiovisual aids</b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Unsatisfactory	
<b>Electricity availability during the program</b>	<input type="checkbox"/> Always available <input type="checkbox"/> Occasional power failure <input type="checkbox"/> Frequent power failures	



III. PROGRAM CONTENT

	Your Rating	Comments
<b>Lectures on <i>Managing Health Care Waste Disposal: Guidelines on How to Construct, Use, and Maintain the De Montfort Incinerator</i></b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not clear	
<b>Lecture on Introduction to Operator's Manual and operator's tasks &amp; responsibilities</b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not clear	
<b>Overhead presentation</b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not clear	
<b>Site sessions</b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not clear	
<b>Revision</b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not clear	
<b>Quality of material and manuals</b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not clear	
<b>Quality of facilitation and knowledge of the resource person</b>	<input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Poor	
<b>Number of tools at the workshop</b>	<input type="checkbox"/> Sufficient <input type="checkbox"/> Not sufficient	
<b>Language for communication at the program</b>	<input type="checkbox"/> I could easily understand <input type="checkbox"/> I had difficulty (comment) <input type="checkbox"/> Used local language	

IV. OVERALL OPINIONS

<b>YOUR OVERALL EVALUATION OF THIS PROGRAM</b>	<input type="checkbox"/> Excellent <input type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> OK <input type="checkbox"/> Poor
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Your Signature:

Date:

Place:

**Form 2: Trainee Information Sheet**

**TRAINEE INFORMATION SHEET (INFORMATION ON TRAINEE AND HEALTH CENTER)**

Health facility assigned to	Position/Responsibilities	Program dates
		Place:
		Start Date: Duration:

**To be filled by participant (tick ✓ wherever applicable)**

Name of the participant				Optional Age (years)	
Designation	<input type="checkbox"/> Chief	<input type="checkbox"/> Supervisor	<input type="checkbox"/> Operator	<input type="checkbox"/> Staff	Gender: <input type="checkbox"/> M <input type="checkbox"/> F
Qualification	<input type="checkbox"/> Post Graduate	<input type="checkbox"/> Graduate	<input type="checkbox"/> Diploma	<input type="checkbox"/> Trained on the job	
Type of Health Facility	<input type="checkbox"/> Private Business	<input type="checkbox"/> Not for Profit NGO	<input type="checkbox"/> Government		
Contact details (Personal Address)	Number & Street				
	City/Town			District	
	State		Country		Pin <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	Telephone			Fax Number	
	Web				
Experience in Health Sector	Overall Experience in Health Sector <input type="text"/> <input type="text"/> Years				
	Type of experience <input type="checkbox"/> House keeping – Collection and disposal, <input type="checkbox"/> Management systems - waste destruction, <input type="checkbox"/> Maintenance and operation of waste destruction facilities				
Were you aware of these before this training program	<input type="checkbox"/> Effects of Dioxins <input type="checkbox"/> Best/safe practices - destruction of medical waste <input type="checkbox"/> Record keeping and monthly reporting of medical waste generated in health facility				
Practice used for medical waste destruction at your facility	<input type="checkbox"/> Open air / open pit burning		<input type="checkbox"/> Landfill		
	<input type="checkbox"/> Incinerator		<input type="checkbox"/> DeMontfort Waste Disposal Unit		
	<input type="checkbox"/> Any other methods _____				
Total medical waste generated at your facility (average annual)	<input type="checkbox"/> < 100 kg <input type="checkbox"/> 500 kg <input type="checkbox"/> 1000 kg <input type="checkbox"/> 3000 kg <input type="checkbox"/> > 5000 kg <input type="checkbox"/> Any Other number: _____				
Hazardous medical waste generated at your facility (average annual)	<input type="checkbox"/> < 10 kg <input type="checkbox"/> 50 kg <input type="checkbox"/> 100 kg <input type="checkbox"/> 1000 kg <input type="checkbox"/> > 2000 kg <input type="checkbox"/> <input type="checkbox"/> Any Other number: _____				
Is your health facility a member of any medical waste related association?	<input type="checkbox"/> Yes. <input type="checkbox"/> No. If yes, specify name of association: <input type="checkbox"/> Don't know				
Contact of others who want to attend training. (use separate sheet if required)	Name				
	Number & Street				
	City/Town			District	
	State		Country		Pin <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	Telephone			Mobile Phone	
How did you learn about this program?	<input type="checkbox"/> First information <input type="checkbox"/> IT Power India Pvt. Ltd. <input type="checkbox"/> Colleague <input type="checkbox"/> Employer <input type="checkbox"/> Other:				
In what language would you like to receive the training material?	<input type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Spanish <input type="checkbox"/> Other Language:				