



SHORT COURSE ON SOLID WASTES
COLLECTION AND DISPOSAL

Damascus, 20-30 May 1968

EMRO 134

Lecture No.20

Plant and Equipment Maintenance

Object: to furnish the most efficient equipment to the operating organizations at the lowest cost.

A. Equipment Selection

1. Must be rugged, able to withstand the wear and tear to which it is subjected
2. Low initial cost not the only criterion
3. Must include amortization, operating and maintenance costs over the life of the equipment
4. Cost of replacing must also be considered
5. Must be reliable - give uninterrupted service
 - a. High costs of overtime for repairs
 - b. Loss of goodwill when service is disrupted
6. Should be as simple and practical as possible

B. Equipment Maintenance

1. Must be based on advanced planning
 - a. When is the best time to withdraw from service
 - b. Preventive maintenance
 - (1) Preventive maintenance based on routine regular (daily and monthly) inspections
 - (2) Make minor repairs immediately
 - (3) Complete periodic overhaul -- do not wait for the unit to break down -- repair on schedule

2. Avoid major repairs and replacement
3. Backlogs of work must be avoided
- C. Stand-By Facilities
 1. Peak loads
 2. Breakdowns
 - a. Some materials handled cause rapid deterioration of equipment
 3. Storage
 4. Alternate methods
- D. Plant maintenance (incinerators)
 1. By nature very dusty, dirty and odor-producing
 2. Require more than normal routine care to provide a satisfactory appearance
 3. Estimates range 10-15% of total cost of operation for maintenance and repairs
 4. Furnace maintenance
 - a. Routine frequent inspections
 - b. Removal of slag and clinkers
 - c. Lubrication of grates, etc.
 - d. Repair and replacement of grate components
 - e. Relining and repair of refractories
 5. Maintenance of crane
 - a. Lubrication
 - b. Routine inspection
 - (1) Cable
 - (2) Bucket
 - (3) Trolley
 - (4) Electrical equipment
 6. Building maintenance
 - a. Interior
 - (1) Cleaning
 - (2) Repainting
 - (3) Refinishing, floors, tile, etc.

- b. Exterior
 - (1) Maintenance of the grounds
 - (2) Maintenance of the access roads
- 7. Shop facilities -- spare parts on hand
 - a. Machine shop
 - b. Welding shop
 - c. Electric shop
- E. Safety precautions
 - 1. High temperatures
 - 2. Deep openings
 - 3. Heavy equipment
 - 4. Dusty environment
 - 5. Electrical wiring
 - 6. Sharp objects