

**HAZARDOUS WASTE RESEARCH AND INFORMATION CENTER  
Illinois State Water Survey Division**

1808 Woodfield Drive  
Savoy, Illinois 61874



**HWRIC TN87-003**

**Overview of the MULTI-OPTION MODEL:  
A Computerized Waste Reduction Information  
and Advisory System**

Status Report

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*Illinois Department of Energy and Natural Resources*

## Overview of the MULTI-OPTION MODEL (MOM): A Computerized Waste Reduction Information and Advisory System

The Multi-Option Model (MOM) is an interactive computerized waste management tool originally developed by ICF Technology, Inc. for the Maryland Hazardous Facilities Siting Board and the USEPA. Its primary purpose is to assist generators and state technical assistance officials with the completion and analysis of technologies and methods for the reduction, reuse and treatment of solid and hazardous waste. Recently the Illinois Hazardous Waste Research and Information Center (HWRIC) contracted with ICF Technology, Inc. for further development of two components of the MOM.

As shown in Figure 1, the MOM is envisioned to consist of three components, a Waste Reduction Advisory System, a Treatment, Storage and Disposal Advisory System, and an interactive Waste Exchange service. The Waste Exchange component is not currently developed. The other two components exist but have only partially developed data bases and have had limited field evaluation. Additional development is being undertaken and suggestions for revisions are welcome.

### The Waste Reduction Advisory System

The Waste Reduction Advisory System (WRAS) currently consists of a Waste Reduction Audit Checklist (WRAC) developed for the Illinois HWRIC and an Information Base. These components and the general types of information they contain are illustrated in Figure 2. The WRAC consists of information on the seven waste reduction topics listed in Table 1. These topics range from low capital approaches to those that are more costly such as equipment or process modification, and cover options from the beginning of the industrial process through waste production and reuse. The information in the WRAC is intended to introduce the user to the full range of types of waste reduction alternatives that may be appropriate. More detailed waste reduction case studies are included in the following Information Base section of the WRAS.

For each topic in the WRAC the user is first asked if his/her company has ever tried that approach (for example, conducted a waste audit). If the user answers yes, the next screen asks general questions about the results. If that approach has not been tried, the user is asked to indicate the reasons why. The WRAC also contains a definition screen for each topic and a screen where a user can request additional information and/or technical assistance.

The WRAS Information Base contains descriptions of waste reduction applications from literature and documented case studies. Information is shown on potential waste reduction

measures tailored to either the unit processes (across industrial categories) or by a particular industry as selected by the user. The user is first shown several headline descriptions of the information. More details can be requested in associated abstracts and citations. Ultimately, the literature cited in the WRAS Information Base will be accumulated in a clearinghouse.

#### The Treatment, Storage and Disposal (TSD) Advisory System

Based on information specified by the user regarding waste type and facility location, the TSD component of the MOM model provides an array of waste management options and cost estimates. Guidance is given on:

- Applicable treatment technologies;
- Available facilities;
- Engineered costs for transportation, treatment, and disposal;
- Recycling opportunities; and
- Waste handling brokers.

Most of the information in the TSD data base on management options for wastes currently is for facilities and services in the northeastern states. The Illinois HWRIC-sponsored study enhanced the TSD system by adding a price query to allow waste management service price/cost comparisons. The engineered cost estimation component was also improved by accounting for economies of scale for the transport of less-than-truckload waste quantities.

#### Further Information

More information on this computerized waste reduction system can be obtained by writing or calling the following:

Illinois Hazardous Waste Research and Information Center  
1808 Woodfield Drive  
Savoy, Illinois 61874  
(217) 333-8940

Figure 1:  
MULTI OPTION MODEL  
FOR WASTE REDUCTION

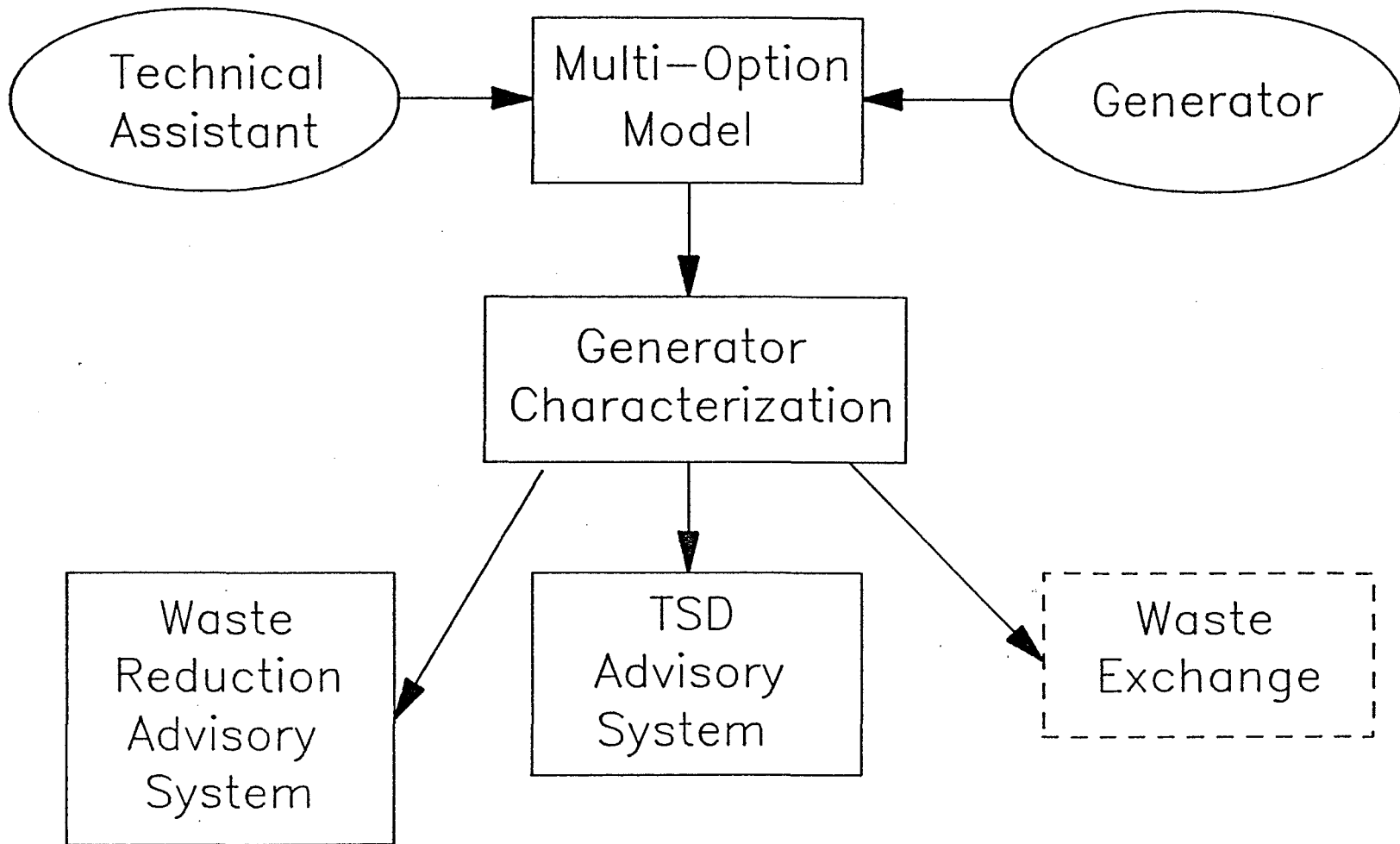
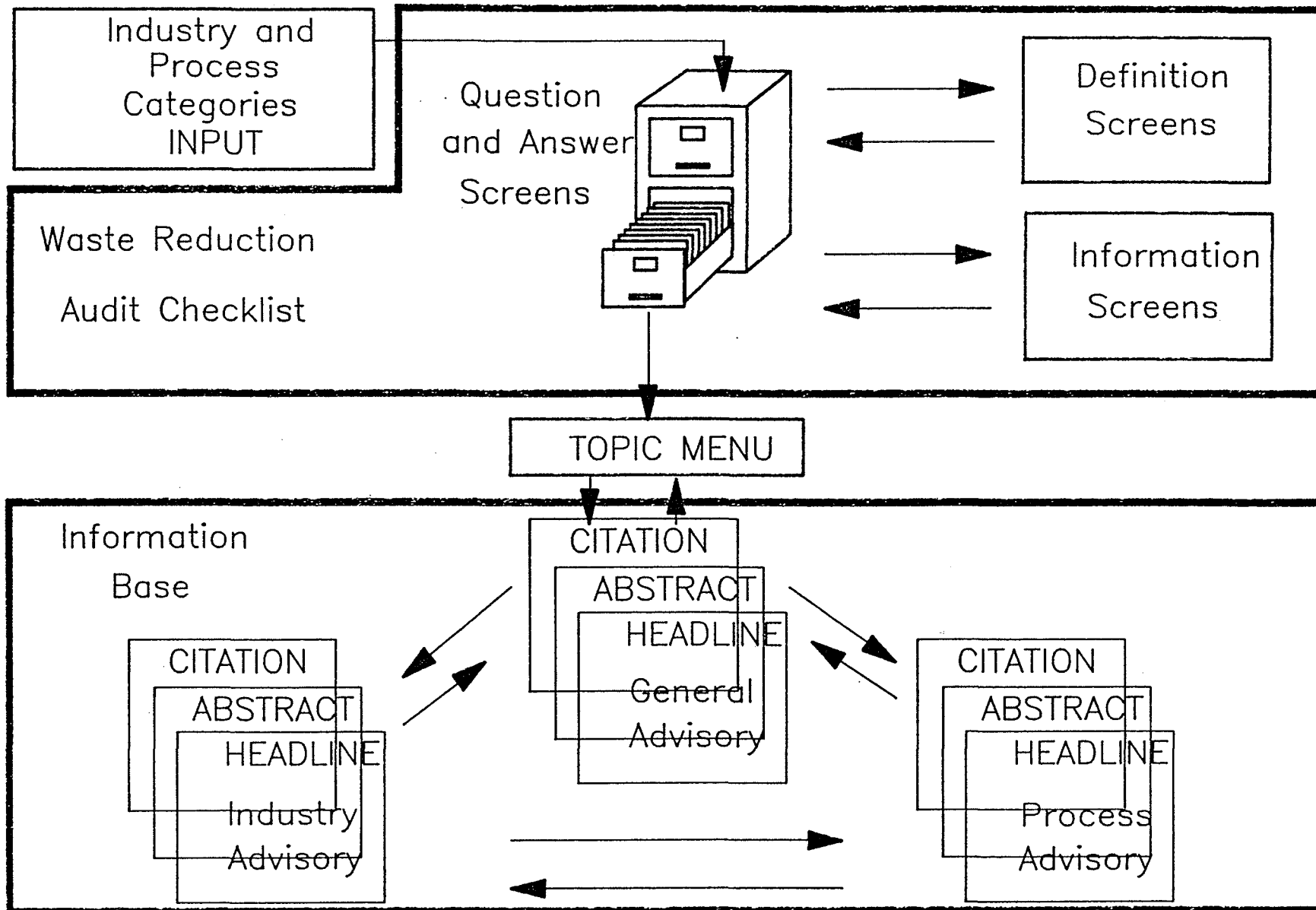


Figure 2:  
WASTE REDUCTION ADVISORY SYSTEM



# Table 1: TOPICS IN THE WASTE REDUCTION AUDIT CHECKLIST

1. Management Strategies
2. Waste Audit
3. Good Operating Practices
4. Raw Material Substitution/Product Reformulation
5. Equipment/Process Modification/Replacement
6. Wastewater Reduction
7. Resource Recovery

Figure 3:  
TSD Advisory System

