The organization and utilization of local civil defense resources under nuclear attack are essential elements of civil defense planning. Existing and proposed local CD operating systems should, therefore, be evaluated to establish their effectiveness under nuclear attack and to provide bases for decisions on distribution of effort among system components or subsystems; to assure optimum allocation of resources; and to provide a means for testing alternative operating procedures and principles.

A computer-based model for the evaluation of local CD operating system effectiveness is presently under development. The model consists of three major components: Local Damage Assessment Model (LDAM); Countermeasures Operations Model (CMOM); and Countermeasure Effectiveness Evaluation Program (CMEEP).

Assessment of weapons effects is made by the assessment model in time increments by unit area (e. g., ZIP code areas) for prompt effects (blast, thermal pulse) and persistent effects (fire spread, fallout radiation).

Resulting changes in resourcesare recorded in a Target Area Description File (TADF) and an Inventory Status File (ISF). Of those files, the first contains general information on the situation in each unit area; the second includes details on particular items concerning personnel, facilities, equipment, goods, and materials.

Utilizing the available resources, the operations model simulates the integrated activities of seven counter measure systemms: fire-fighting, engineering, rescue, medical, welfare, transportation, and supply.

In addition to those organized operations, the model has provisions to account for population self-help, for example, in combating spot fires and remedial movement. Changes in the target area situation and the availability of resources resulting from countermeasure operations are reflected in the Target Area Description and Inventory Status Files.

Based on those file entries, the countermeasure (CM) effectiveness evaluation determines the effectiveness of CM operations expressed in Figures of Merit for each CM system.

A methodology and prototype for the total Local CD Operating Systems Evaluation Model have been developed. For the LDAM the detailed design and computer program have been developed and documented.