

PACKAGE ID - 000174IBMPC00 DIAMOND

KWIC TITLE - Decision Impact Assessment Model

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LIMITATION CODE -UNL **AUDIENCE CODE** - UNL

COMPLETION DATE - 08/31/1991 **PUBLICATION DATE** - 02/01/1991

DESCRIPTION - DIAMOND represents the decision-making environment that utility planners and executives face. Users interact with the model after every year or two of simulation, which provides an opportunity to modify past decisions as well as to make new decisions. For example, construction of a power plant can be started one year, and if circumstances change, the plant can be accelerated, mothballed, cancelled, or continued as originally planned. Similarly, the marketing and financial incentives for demand-side management programs can be changed from year to year. This frequent user interaction with the model, an operational game, should build greater understanding and insights among utility planners about the risks associated with different types of resources.

PACKAGE CONTENTS - Media Directory; Software Abstract; User's Guide;
ORNL/CON-315;

SOURCE CODE INCLUDED? - No

MEDIA QUANTITY - 1 5.25 Diskette

METHOD OF SOLUTION - DIAMOND consists of four submodels: FUTURES, FORECAST, SIMULATON and DECISION. FUTURES defines a future environment in which the utility must plan and operate its system. FORECAST uses historical information from FUTURES and from Simulation to prepare simple forecasts of key variables, such as fossil-fuel prices, economic growth, electricity demands, and utility's surplus/deficit situation, to the end of the analysis period. DECISION is the heart of the model. In DECISION, the user interacts with the model and selects demand and supply resources to meet future load growth. The user sees historical results from FUTURES and SIMULATION and forecasts of future loads, electricity prices, and other factors from FORECAST. This information is combined with estimates of the construction times and costs and operating costs of alternative resources. The analyst can modify prior decisions on the basis of recent experience and new forecasts.

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METHOD OF SOLUTION - (CONT)

COMPUTER - IBM PC

OPERATING SYSTEMS - MS-DOS

PROGRAMMING LANGUAGES - C

SOFTWARE LIMITATIONS - None

SOURCE CODE AVAILABLE (Y/N) - N

UNIQUE FEATURES - The explicit treatment of uncertainty, frequent user interaction with the model, and ability to change prior decisions. The primary strength of the model is its representation of the decision-making environment that utility planners and executives face.

RELATED SOFTWARE - None

OTHER PROG/OPER SYS INFO - None

HARDWARE REQS - IBM compatible PC. A laser printer is preferable.

TIME REQUIREMENTS - 10-20 seconds for a 20 year simulation on a 286 PC.

REFERENCES - M. Gettings, E. Hirst, and E. Yourstone, 'DIAMOND: A Model of Incremental Decision Making for Resource Acquisition by Electric Utilities, ORNL/CON-315, February 1991.

ABSTRACT STATUS - Submitted August 1991.

SUBJECT CLASS CODE - D

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
D CODES
FORECASTING
DECISION MAKING
ELECTRIC UTILITIES
COMPUTERIZED SIMULATION
RESOURCE ASSESSMENT

EDB SUBJECT CATEGORIES -

990200 290200 296000

SPONSOR - DOE/CE

PACKAGE TYPE - AS - IS