

1978-1

I. Introduction

- A. Time Span:
November 16, 1978 - November 30, 1978

- B. Accomplishments:
 - 1) Interacted with the Conversational Monitor System.

 - 2) Interacted with the Panvalet System.

 - 3) Interacted with IBM/370 using FORTRAN IV high level language with both "G" and "H" compilers.

II. APPLICATIONS

A. Time Span

December 1, 1978 - December 31, 1978

B. Computer Programs: Maintenance

1) N.P.P.D.

This program is designed to generate data and graphs utilized in analyzing Bluff Stability data obtained from a proposed hydro-electric site near Omaha, Nebraska. The program sorts data and generates a plot using the "CalComp" Plotter. The generated plot and data are then studied for detection of critical movements. Sal Mazzola and I updated the routine so that the control file could contain more data entries.

2) Load - Flow and Transient Stability Studies

I assisted Richard Orpen in making updates to these programs. The changes involved restructuring the input and output formats.

3) RE-OP, FAULT-TREE PROGRAM

I drafted input forms for this program using the CalComp Plotter. "RE-OP" was purchased from MIT and involves studying the reliability of a system knowing the reliability of the components and that of spares and stand-bys.

III. PROGRAM DESIGN AND MAINTENANCE

A. Time Span

January 1, 1979 - May 16, 1979

B. Programs Designed

1) BEST OPENING FACE SUMMARY REPORTS

The Best Opening Face Program was developed by the National Forestry System department of the U.S. Department of Agriculture. The B.O.F. program was designed to improve the quality and yield of a wood processing plant. Specifications of the equipment used at the mill and log dimensions were used to determine the most optimal yield of product. The summary program I designed used the B.O.F. program to

run a series of logs with different dimensions through the optimization procedure, producing four summarized reports; 1) Piece Count. 2) Board Footage. 3) Cubic Footage. 4) By-Products.

Currently, a metric version of this system is being considered for use by countries using the metric system.

2) COST ALLOCATION STUDY

The Cost Allocation Study is a program which performs comprehensive cost of service and rate of return studies. The COST program may be used for successive allocation from system total to jurisdictions or geographical areas; from jurisdiction to service classifications; and from service classification to cost-causative components.

The bulk of input data required includes:

- (1) Title, Schedule, and Column Headings.
- (2) System Total Amounts.
- (3) External Allocation Factors.
- (4) Assigned Allocations.

The system total may be used in five different ways.

- (1) It may be entered by direct assignment.
- (2) If an external factor is to be applied, the system total is given along with a factor reference number which defines the appropriate allocation.
- (3) If an internal factor is to be applied, the system total is given along with a schedule reference and line reference number which instructs the program to allocate the line in the same manner as the referenced line.
- (4) The allocation may be a duplicate of another allocation.
- (5) Line allocation may be computed by multiplying each amount in a referenced line by a constant (percentage).

C. Programs Maintained

1) N.P.P.D.

Described in Section II.

2) FAULT-TREE

Described in Section II. Turned over to Tom Melanson.

3) BEST OPENING FACE AND BEST OPENING FACE SUMMARY SYSTEMS

Described in Section III B.

4) COST ALLOCATION STUDY

Described in Section III B.

5) DAMBREACH

The Dambreach program was purchased from the National Weather Service. It can be described as a flood-forecasting model.

6) H.E.C.

The Hydrologic Engineering Center, U.S. Army Corps of Engineers have developed a series of approximately 40 computer programs used in various types of hydrological studies.