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USER/PROGRAMMER GUIDE FOR UCMD100
SETPOINT MANIPULATION FROM MAGNETIC TAPE COORDINATE DATA

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ABSTRACT

This document describes program UCMD100 - an Applicon AGS/880 user command used to place drill bits on a geothermal drill bit head.

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1.0 INTRODUCTION

UCMD100 was designed primarily for use on geothermal drill bit designs on the Applicon graphics system. A program on the VAX 11/780 computer generates drill bit coordinates and creates an Applicon data file containing these coordinates. UCMD100 reads in this data and stores it in an Applicon drawing file. The data can then be used to place drill bits by an Applicon utility routine.

2.0 EXECUTION INSTRUCTIONS

UCMD100 can be executed from any AGS 880/3D activity having a Decwriter or a graphics display with a keyboard attached. The activity should have the pertinent drawing file loaded, and it should be placed in edit mode. The tape containing the data should be loaded on the tape drive.

2.1 Operating Procedure

To read a set of data and perform setpoint manipulation, enter:

UCMD100;GO;

2.2 Execution Messages

STOP UCMD100 indicates successful completion of setpoint manipulation.

2.3 Error Messages

DATA ERROR - the data is not in the proper format on the tape.

TAPE ASSIGN ERROR - the tape could not be assigned.

END OF DATA - an attempt was made to read past the end of the data on the magtape.

****NATURAL UNIT SETTING TOO LARGE**** - the natural unit setting is too large, and the UCMD will not work.

SETPPOINT ERROR - the data values are possibly too large or were not in the proper format on the magnetic tape.

3.0 UCMD100 PROGRAM DOCUMENTATION

3.1 Documentation Guidelines

This manual documents program UCMD100 per SAND77-0188, Software Documentation Guidelines and Procedures, dated March 1977.

3.2 Date of Documentation

June 1980

3.3 Name of Program

UCMD100

3.4 Name of Author of Program

Joseph J. Pruskowski - 2457

3.5 Name of Program Administrator

Joseph J. Pruskowski - 2457

3.6 Date Program was Completed

June 1980

3.7 Brief Description of Program

Four data values are read from magtape. The first three values are used to set V2 in setpoint. The other remaining value in the record is used to set C2 in setpoint. These values can now be used in a macro to perform component manipulation or any other function typical of setpoint values. The program rewinds the tape when it encounters an end of file.

3.8 Full Narrative Description of Program

The program first assigns a channel to magtape. If the tape drive is already in use, a TAPE ASSIGN ERROR will be posted. A record is read into a buffer in ASCII format and then decoded into four data fields. A subroutine is then called to determine the natural unit ratio setting, as this is used to convert dimensions to AGS units that can be used by the setpoint commands. Once the values are in AGS units, the setpoint values V2 and C2 are set. At each step error checking is involved, and an appropriate error message is output for the different error conditions.

3.9 Hardware Configuration Required

UCMD100 executes on an Applicon Graphics System using a Digital Equipment Corporation PDP-11 minicomputer.

3.10 Language Used

UCMD100 mainline is written in Fortran and compiled with

FORTTRAN-IV VOIC with an assembly language subroutine assembled with MACRO V06-03.

3.11 Operating System Used

UCMD100 executes in the edit mode environment of an Applicon AGS/880 operating system.

3.12 Type of Program

UCMD100 is a main program which calls an assembly language subroutine. It executes under the Applicon operating system as a user-activated routine.

3.13 Special Routines Used

Special routines used within UCMD100 are linked from the Applicon library module FOR881. In addition, various globals are obtained from COMMON to determine the natural unit setting.

3.14 Form of the Program

UCMD100 is an absolute load module formatted for execution on the AGS system by the utility LOVALL.

3.15 Files

Input: Data is input from magnetic tape in ASCII format, 800 BPI, odd parity, core dump, and 80 characters per record. Data is in the FORTRAN format 4F10.4.

Output: Is in the form of setpoint values V2 and C2 being set.

3.16 System Flowchart

See next page.

3.17 Program Listing

A current listing should be obtained from the 2424 Software Coordinator.

3.18 Backup Capability

The following DOS PIP directory shows all of the files necessary to rebuild UCMD100. Included in this list is a file named UCMD100.CMD. This file contains all of the DOS/BATCH commands to compile, assemble, and link the UCMD100 program. The current backup tape and version should be obtained from the Software Certificate.

DIRECTORY DNO: 300,350
UCMD100.FOR
100SUB.MAC
UCMD100.MAC
UCMD100.CMD

4.0 RECORD OF CHANGES

See Software Certificate.

5.0 KEY WORDS

UCMD100, drill bit design, geothermal drilling.

6.0 REFERENCES

1. Fortran User Command Interface Option AGS/881-I System Reference manual, Revision C, Applicon Incorporated, Burlington, Mass., Nov. 1978.
2. RSX-11M Version 3.1 Manual Set, Digital Equipment Corporation, Maynard, Mass., April 1978.
3. PDP-11 Processor Handbook, Digital Equipment Corporation, Maynard, Mass., 1978.

7.0 DISTRIBUTION

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