APAE Memo No. 162

15

IBM 650 COMPUTER
PROGRAM NUMBER 655
COLLATION OF ROC CODE OUTPUT

ALCO PRODUCTS, INC.
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PROGRAM NUMBER 655

COLLATION OF ROC CODE OUTPUT

AEC CONTRACT #AT(30-3)-326

Issued December 19, 1958

By

C. J. Stueck

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I. DESCRIPTION

Using the output of programs 653 and 654, each card of which contains the dose information for one dose point at one energy, program 655 produces the sum of the dose values of all energies for one dose point.

Three cards are punched:

1. Contains the sum of the dose values of all energies for one dose point of 653 output.

2. Contains the sum of the dose values of all energies for one dose point of 654 output.

3. Contains the sum of the dose values of all energies for one dose point of 653 and 654 output combined.

II. PROGRAM DETAILS

II-1. Input Format For The 650

No card preparation is necessary.

II-2. Output Format For The 650

All output is in floating point form.

The first card contains the sum of the dose values of all energies for one dose point of 653 output.

col.	
1-10	653PPPP000
11-30	zeros
31-40	D_1
41-50	D_1*
51-60	D_2
61-70	D_2*
71-80	xx00000000

The second card contains the sum of the dose values of all energies for one dose point of 654 output.

col.	1-10	654 PPPP 000
	11-20	μ_s Z
	21-30	B(b)
	31-40	D_1
	41-50	D_1*
	51-60	D_2
	61-70	D_2*
	71-80	xx 0000 0000

The third card contains the sum of the dose values of all energies for one dose point of 653 and 654 output combined.

col.	1-10	653 PPPP 654
	11-20	μ_s Z
	21-30	B(b)
	31-40	D_1
	41-50	D_1*
	51-60	D_2
	61-70	D_2*
	71-80	xx 0000 0000

In all of the above examples, PPPP is the case number, xx is the dose point index, and the other quantities are defined in section IV-1 of APAE Memo 142, entitled "Primary Shielding Calculations on the IBM 650 (Roc Codes)".

II-3. Operating Instructions

Sort any number of specified 653 and 654 output sets all together on:

	Cols.
sub-minor	8
minor	1-3
intermediate	71-72
major	4-7

Remove last card of program deck and place after last card of 653-654 input.

II-3.1. Input Deck

Input deck consists of:

1. Program 655 deck (minus last card)

2. Sorted input deck
3. Last card of program 655 deck

II-3.2. Machine Operators Guide

1. 533 Read-Punch Unit

   (a) Ready read feed with input deck.
   (b) Ready punch feed with blanks.

2. 650 Console

   (a) Set programmed switch to STOP
   (b) Set half cycle switch to RUN
   (c) Set control switch to RUN
   (d) Set display switch to PROGRAM REGISTER
   (e) Set overflow switch to STOP
   (f) Set error switch to STOP

3. Set (70 1951 xxxx) in storage entry switches.

4. Press computer-reset key

5. Press program-start key

6. When read hopper empties, press end of file key.

Upon completion of problem the computer will stop with (69 1952 8000) in the program register and blanks in the distributor.

To restart problem (00 0000 0150)

II-3.3. Programmed Stops

Program Register	Interpretation
(01 2222 0455)	Sequence, cols 4-7
(01 3333 0175)	Sequence, cols 71-72
(01 4444 0379)	Sequence, cols 1-3

II-3.4. Calculation Time

$Time_{(seconds)} = 10$ (Total number of dose points)

II-3.5. Resorting Cards

To put the input cards back in their original order, sort:

	cols
sub-minor	71-72
minor	8
intermediate	1-3
major	4-7