automated cross-section program and is intended to operate with the Atomics International microscopic neutron cross-section tape.

8. Related and Auxiliary Programs:

   a. PRISM requires the neutron microscopic cross-section binary master tape generated by the MOMUS code.

   b. PRISM is closely related to GRAVE, the group-averaging code and will be incorporated therein.

   c. Required cross-section input data can be prepared by the MALINDA code.

9. Status: In production.

10. *References:*

   [1]B. D. O'Reilly, D. W. Roeder and V. Luco, "PRISM, A FORTRAN Code for the Preparation of Multigroup Inelastic and Elastic Scattering Transfer Matrices," NAA-SR-MEMO-9055, (September, 1964).

   [2]R. A. Blaine, "MOMUS, A Program to Construct, Up-Date and Modify the Neutron Microscopic Cross Section Master Tape," NAA-SR-MEMO-8823, (August, 1963).

   [3]D. W. Roeder, "MALINDA: Manipulation and Listing of Nuclear Data," NAA-SR-MEMO-10008, (June, 1964).

11. Machine Requirements: 32 K, IBM 7094

12. Programing Languages Used: FORTRAN II (95%) and FAP (5%)

13. Operating System or Monitor under which Program is Executed:
   Standard IBM FORTRAN monitor.

14. Any other Programing or Operating Information or Restrictions: None.

15. Material Available:

   a. PRISM source deck (2000 cards)

   b. ABSTRACT

   c. PRISM document

R. A. Blaine

Supervisor, Nuclear Code Unit
Mathematics and Computer
   Applications Group
Atomics International
Box 309
Canoga Park, California

CCA - 105

1. Name of Code: MOMUS and Atomics International Microscopic Cross-Section Library

2. Computer for which Code is Designed and others upon which it is Operable: IBM 7094

3. Nature of Physical Problem Solved: MOMUS is the program used to construct and maintain the neutron cross-section master tape developed under the Atomics International automated cross-section program. The library contains 21 elements with data for 11 parameters in the range 0.001 eV to 10 MeV. MOMUS will perform the following tasks:

   a. Make the binary master tape from cards.

   b. List selected elements.

   c. Update—add, correct and replace any data.

   d. Make a short tape containing selected elements.

   e. Provide graphical display of selected data.

   f. Punch microscopic data.

4. Method of Solution:

5. Restrictions on the Complexity of the Problem: Parameters are tabulated at 90 uniform points in energy per decade for a total of 901 points.

6. Typical Running Time:

   a. Ten minutes for graphical display of all parameters of all elements.

   b. One-half minute to list one element.

   c. Two minutes for additions or corrections with checking.

7. Unusual Features of the Program: MOMUS is written in such a way that each subroutine performs a specific task. Thus for each option, the main program calls the required routines in the proper order. This philosophy makes program modification quite easy.

8. Related and Auxiliary Programs: The neutron master tape is used by:

   a. GRAVE, the group-averaging code.

   b. PRISM, the inelastic- and elastic-scattering matrices code.

   c. PANCAKES, a spectrum iteration code based on FAIM.

9. Status: In production.

10. *References:*

   [1]R. A. Blaine, "MOMUS, A Program to Construct, Up-Date and Modify the Neutron Microscopic Cross Section Master Tape," NAA-SR-MEMO-8823, (August, 1963).

   [2]R. A. Blaine, Atomics International Letter "Modifications to MOMUS," dated October 21, 1964.

   [3]M. Hoffman and W. A. Rhoades, "AICRT 3, A General Code for Display of Digital Data," NAA-SR-MEMO-9096, (October, 1963).

11. Machine Requirements: 32 K, IBM 7094; SC-4020 graphical display device.

12. Programing Languages Used: FORTRAN II (90%) and FAP (10%).

13. Operating System or Monitor under which Program is Executed:
    Standard IBM FORTRAN monitor.

14. Any other Programing or Operating Information or Restrictions: If an SC-4020 graphical display device is not available, a dummy routine can be used or the AICRT 3 display routine can be rewritten.

    The NAA SC-4020 subroutine package is available through:

    UAIDE Librarian
    c/o Stromberg-Carlson
    P. O. Box 2449
    San Diego, California

15. Material Available:
    a. MOMUS source deck (1700 BCD records).
    b. Cross-section library (23 013 BCD records).
    c. Reference documents.
    d. Abstract
    e. Notes

R. A. Blaine

Supervisor, Nuclear Codes Unit
Mathematics and Computer
    Applications Group
Atomics International
Box 309
Canoga Park, California