

GRISSET CERTIFICATION PACKAGE, REVISION 2 (U)

by J. J. Taylor

Westinghouse Savannah River Company
Savannah River Site
Aiken, South Carolina 29808

Other Authors:

C. R. Cefus
(WSRC)

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By

**J. J. Taylor
G. R. Cefus**

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SOFTWARE (91-059-1)

APPROVALS


M. R. BUCKNER, MANAGER
SCIENTIFIC COMPUTATIONS SECTION

DATE 11-30-92


C. E. APPERSON, MANAGER
APPLIED PHYSICS GROUP

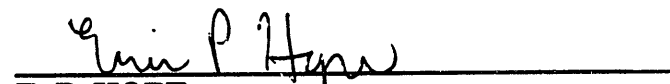
DATE 11-30-92


J. J. TAYLOR, TASK LEADER

DATE 11-30-92


S. K. SKILES
TECHNICAL REVIEWER

DATE 11-30-92


E. P. HOPE
SOFTWARE QUALITY COORDINATOR

DATE 11-30-92



Revisions

Document Revision Number 2 Task Number 91-059-1

Description of Major Revisions

Rev. No.	Page No.	Date	Revisions
0	1-4	9/91	Original Issue
1	1-4	2/92	GRISSET 1-1
2	1-4	11/92	GRISSET 1-2



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1.0 INTRODUCTION

GRISSET 1-1, which was previously approved software (Reference 1), has been revised to add user requested functionality. These changes allow GRISSET to support up to 100 axial layers, provide flux edits, rename few group records to allow the modeling of integral rods, and use the most recent veeder unit to centimeter conversions. These code modifications have led to the creation of a new version of the GRISSET code. The new version is GRISSET 1-2.

This document is the certification package for GRISSET 1-2.

All work has been performed under NRTSC QA procedures (Reference 2) and the technical task plan documented in Reference 3.

2.0 APPLICATION

The GRISSET (GRIMHX setup) computer code is an input driver for the three dimensional GRIMHX computer code (Reference 4). GRISSET provides a method for automating the creation of GRIMHX geometry and associated problem specific information such as the reactor maps and the cross section data references. GRISSET provides methods which allow the user to model control rod positioning, safety rod insertion with any number failing, control rod withdrawal or insertion, and full or partial melting of control rods. GRISSET also calculates the radial shape factor, tilt, roof-top-ratios, and the assembly power peaking.

3.0 INPUT

A detailed description of the input required for the GRISSET computer code is documented in Reference 5.

4.0 OUTPUT

The output for the GRISSET computer code is documented in detail in Reference 5. The output includes the radial shape factor, tilt, and roof-top-ratio as previously calculated in the XGRIM3D code (Reference 6). A description of the test problems can be found in Reference 7. The test problems were selected to span the potential range of applicability of the code. The electronic input for this problem resides in the Scientific Code Management System (SCMS). Hard copy of the test set output has been retained by the GRISSET code proprietor.



5.0 SOLUTION METHOD

The theory behind GRISET and the solution methodology which is used in the execution is described in References 5 and 6.

6.0 ACCURACY AND LIMITATIONS

The accuracy of the GRISET computer code is documented in the test results for GRISET 1-2 (References 8 and 9). GRISET was written to execute using the JOSHUA (J80) environment. Thus, GRISET is limited to computing platforms which support J80.

7.0 SOURCE LISTING

The official source listings for GRISET are stored and controlled by SCMS. The storage location is write-protected to ensure that no unauthorized changes to the source coding will take place.

8.0 PROGRAM EXECUTION

A complete sample problem is located in SCMS. Detailed descriptions of the input and output of the sample problem can be found in Reference 5. The GRISET test set is also stored in SCMS. A description of the test input and output can be found in Reference 6. The test set was selected to span the potential range of applicability of the code. Hard copy of the test set output has been retained by the code proprietor.

9.0 ACCESS CONTROL AND SECURITY

GRISET can be executed on either the unclassified IBM system or on the LAB1 VAXcluster. Changes to the coding can only be performed by the proprietor and cannot be implemented without management approval.

Banners have been added to the GRISET computer code as part of SCMS. These banners identify the version and the date of compilation of the codes and are maintained by the SCMS custodian in accordance with Reference 10.

Technically knowledgeable personnel have been assigned to serve as code proprietor and backup proprietor for the GRISET computer code.



10.0 USER QUALIFICATIONS

User qualifications are based on guide lines provided in References 5, 11, and 12. Only cognizant users are to use controlled codes for critical calculations. The training requirements are also identified in References 5, 11, and 12. The training is supervised by a cognizant user with appropriate oversight by the proprietor. The proprietor further checks training packages of all apprentice users.

11.0 MANUALS AND OTHER DOCUMENTATION

The user's manual for the GRISET computer code is documented in Reference 5. The manual describes the user qualifications, training requirements, theory, and provides detailed descriptions of both input variables and output. The Software Requirements Specification (SRS) for the GRISET computer code is documented in Reference 13.

A proprietor's code notebook (Reference 8) is being maintained in which a history of code development, alterations, and error corrections are being recorded and filed. This notebook will be continuously maintained by the code proprietor.

A system is in place for the GRISET proprietor to inform the user community of coding changes, observed impact of system changes, and error corrections. This system is in the form of documented, numbered memoranda, along with appropriate reviews, which are sent to all users, cognizant and apprentice. The user list is maintained by the code proprietor.

12.0 TASK PLAN REQUIREMENTS

All task plan deliverables were met by providing a certified version of the GRISET computer code with supporting documentation as described in this document.

13.0 TECHNICAL REVIEW

A technical review of this document has been accomplished in accordance with QAP II-14 of Reference 2.



14.0 REFERENCES

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