

**SOFTWARE DEVELOPMENT PLAN FOR
FLOW-3D[®] YMUZ2, Version 1.0**

Prepared for

**U.S. Nuclear Regulatory Commission
Contract NRC-02-02-012**

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December 2006

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12/21/2006
Date

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1 SCOPE

The scope of the **FLOW-3D® YMUZ2** development effort is described in detail in the software requirements description by Green (2006). The **FLOW-3D® YMUZ2** is a modified version of the commercially available program, **FLOW-3D®** Version 9.0. It is referred to as a modified version of **FLOW-3D®** in Green (2006).

2 BASELINE ITEMS

The **FLOW-3D® YMUZ2** software will be released as Version 1.0 after the incremental development is complete. It will include (i) source code and (ii) installation instructions. A User Manual will be issued separately.

3 PROJECT MANAGEMENT

Work will be accomplished in conjunction with the UZ2 analysis tasks. Version 1.0 will be implemented by Steve Green. Planned release date for Version 1.0 is December 2006.

4 DEVELOPMENT PROCEDURES

All code development will be done on desktop PC workstations running the Windows® XP operating system. The Compaq Visual FORTRAN Version 6.6C compiler will be used. Coding for **FLOW-3D® YMUZ2** will be done in FORTRAN 95 with extensions to permit dynamic memory allocation of some arrays. Coding style will be consistent with the style and conventions of the standard **FLOW-3D®** Version 9.0 software. Acceptance tests will be similar to those used in Green, et al. (2005).

5 CONFIGURATION MANAGEMENT

The working version of the code will be maintained by Steve Green on a desktop PC. New or modified modules will be tested before the changes are incorporated with the working code. A description of the changes and locations of the working directories will be recorded in project scientific notebooks. The baseline Version 1.0 will be kept in the QA records vault. Subsequent minor bug fixes will be released as Version 1.0.1, 1.0.2, etc. Software change request forms will be used for all changes to the controlled source code.

6 NAMING CONVENTION

The software described here is a customization to the standard **FLOW-3D®** Version 9.0 installation from Flow Science, Inc. (2005). Flow Science has approved CNWRA's use of the name "**FLOW-3D® YMUZ2**" with the following stipulation:

The label "**FLOW-3D®**" must appear as bold, italic, arial font with the registered symbol whenever the document formatting capabilities allow it.

7 REFERENCES

Flow Science, Inc. "**FLOW-3D**[®] User Manual." Version 9.0. Sante Fe, New Mexico: Flow Science, Inc. 2005.

Green, S. "Software Requirements Description for the Modification of FLOW-3D to Include High-Humidity Moisture Transport Model and Thermal Radiation Effects Specific to Repository Drifts." San Antonio, Texas: CNWRA. 2006.

Green S., M. Clarke, D. Walter. "Software Validation Test Results for **FLOW-3D**[®] Version 9.0." San Antonio, Texas: CNWRA. 2005.