

Release Notes for RELAP5-3D Version 4.2.1

Code Improvements from Version 4.1.3

The following is a brief description of improvements and new features in version 4.2.1. The associated material in the User Manuals is shown as an underline.

Nucleate boiling heat transfer coefficient multiplier implemented

The nucleate boiling heat transfer coefficient multiplier was implemented. This option is controlled with Word 13 in the 20 word format for the 1CCCG801 through 1CCCG899 (and 1CCCG901 through 1CCCG999) cards.

See Vol. 2, Appendix A, Section 8.

Card 1 Option 15 institutionalized

Card 1 Option 15 was institutionalized. The code could previously violate the Courant limit. With this change, the code no longer violates the Courant limit. Using Card 1 Option 15 now results in an input error. The previous functionality of the code can be accessed using Card 1 Option 22.

See Vol. 2, Appendix A, Section 2.

MA18 solver restart issues corrected

Restart cases that use the MA18 solver were corrected. The restart capability using this solver did not work previously.

Hydrogen and Nitrogen compilation corrected

Corrected errors with Hydrogen and Nitrogen fluids. Specifically, the tpf files did not compile correctly with Intel Fortran compilers above version 11.1. These files now compile and function correctly.

Plot file for “moving” problems corrected

The plot file for problems using the “moving” option was damaged in the previous version. It has been corrected for this version.

Control variable controlled compressor speed corrected

Controlling the compressor speed with a control variable was not functioning correctly, this issue was corrected.

Verification testing results improved

Some problems that did not previously pass verification testing for restart or backup have been corrected.

User problem corrections

Various user problems have been found and fixed in this version.