

Prompt Radiation batch isolation

Subject 5 | LISE versions: 18.8.68-69, 18.8.71

These revisions isolate successive Prompt Radiation batch configurations so results do not inherit stale secondary-reaction state or temporary beamline changes from a preceding item. They also organize the module's build lists. Radiation physics models and cross sections are unchanged. [1]

1 Module organization

Version 18.8.68 moves the qmake source, header and distribution lists into `d_PromptRadiation/PromptRadiation.pri`. `LISEcute.pro` includes that module beside the pre-equilibrium project fragment. This groups the build definitions without adding a radiation model. [1]

2 Configuration isolation and cleanup

Version 18.8.69 invalidates configuration-dependent secondary-reaction caches before each phase recalculates. Batch advancement waits for an explicit final-cleanup signal before loading the next INI. The completed configuration must restore its temporary beamline changes and finish the requested phase results before the next item starts. [1]

The isolation also covers empty Phase-2 results. An empty result does not permit the next configuration to bypass cleanup or reuse the preceding configuration's cached reaction state.

3 Recorded three item validation

Version 18.8.71 records the DB3 batch sequence: PS momentum slits, PS focal-plane slits, then DB2 slits. For the two items using a 1 pps cutoff, Phase-1 totals are 29.0909330493 and 29.0909330408 pps. The middle item uses 0.1 pps, explaining its higher total; those unequal cutoffs should not be treated as an isolation discrepancy. [1]

The trace confirms empty secondary-reaction caches and removal of all tracked temporary blocks before the next item. Diagnostic logging is retained in `prompt_rad_state.log` beside the executable. The version-only 18.8.71 update was not compiled. This report adds no new batch run or benchmark. [1]

4 Version and source references

18.8.68: module build organization. 18.8.69: phase-cache invalidation and final-cleanup sequencing. 18.8.71: three-item validation and retained diagnostic logging.

[1] `L_Init/lise_version.h`, entries 18.8.68-69 and 18.8.71, dated 16 October 2026. The numerical values and trace findings above are the results recorded there.

Implementation references: `d_PromptRadiation/PromptRadiation.pri` and `LISEcute.pro`. The recorded batch diagnostic is `prompt_rad_state.log` beside the executable.