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| Title                | Stratification issues in the primary system. Review of available validation experiments and State-of-the-Art in modelling capabilities (StratRev)  |
| Author(s)            | Johan Westin, Vattenfall Research and Development AB<br>Mats Henriksson, Vattenfall Research and Development AB<br>Timo Pättikangas, VTT<br>Timo Toppila, Fortum Nuclear Services Ltd<br>Tommi Rämä, Fortum Nuclear Services Ltd<br>Pavel Kudinov, KTH Nuclear Power Safety<br>Henryk Anglart, KTH Nuclear Reactor Technology  |
| Affiliation(s)       | Vattenfall Research and Development AB<br>VTT<br>Fortum Nuclear Services Ltd<br>KTH Nuclear Power Safety<br>KTH Nuclear Reactor Technology   |
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| Abstract             | <p>The objective of the present report is to review available validation experiments and State-of-the-Art in modelling of stratification and mixing in the primary system of Light Water Reactors. A topical workshop was arranged in Älvkarleby in June 2008 within the framework of BWR-OG, and the presentations from various utilities showed that stratification issues are not unusual and can cause costly stops in the production. It is desirable to take actions in order to reduce the probability for stratification to occur, and to develop well-validated and accepted tools and procedures for analyzing upcoming stratification events.</p> <p>A research plan covering the main questions is outlined, and a few suggestions regarding more limited research activities are given. Since many of the stratification events results in thermal loads that are localized in time and space, CFD is a suitable tool. However, the often very large and complex geometry poses a great challenge to CFD, and it is important to perform a step-by-step increase in complexity with intermediate validation versus relevant experimental data.</p> <p>The ultimate goal is to establish Best Practice Guidelines that can be followed both by utilities and authorities in case of an event including stratification and thermal loads. An extension of the existing Best Practice Guidelines for CFD in nuclear safety applications developed by OECD/NEA is thus suggested as a relevant target for a continuation project.</p> |
| Key words            | Nuclear power, stratification, primary system, reactor pressure vessel, validation, CFD  |