

SECTION A: ERROR DETAILS

 Bugzilla Error Number **BUG4391**
Description of Error:

The incorrect heat flux is used when determining the wall temperature associated with critical heat flux

Comments:

The Flownex calculation procedure relies on the critical heat flux value determined from the Groeneveld lookup tables. Then based on the prevailing conditions the wall temperature that is calculated would correspond to the wall temperature at the critical heat flux. To do so, a nucleate boiling coefficient is required based on the correlation of Steiner and Taborek. Flownex used the currently calculated heat flux for the scaling of the nucleate boiling coefficient in the Steiner and Taborek correlation, whereas the critical heat flux should be used instead.

Since the wall temperature at critical heat flux is used to determine the boiling regime, this can introduce large errors when determining the boiling heat transfer since the heat transfer coefficients vary significantly between the different boiling regimes.

Corrected Version: 8.14.0.4675

SECTION B: WORKAROUND
Workaround Description:

The script defined heat transfer option can be used to override the Flownex calculated heat transfer coefficients. With this workaround the user will have to provide a complete implementation of the two-phase heat transfer coefficients for all the heat transfer regimes.

SECTION C: SIGNOFF
Person Responsible for Fix:

Eugene van Heerden

Name

Signature

2021/10/28

Date
Person Responsible for Review:

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2022/04/20

Date