

Thermocouple Column and Piping Replacement

A solution to restore in-core instrumentation system safety

Framatome thermocouple column and piping replacement qualified solution allow a faster in-core instrumentation system restoration in safer conditions.

Challenge

Accidental operation may lead to distortion of a thermocouple column. Replacement is then necessary. In some cases, piping distortion may make thermocouple replacement impossible and may result in safety-related issues.

Solution

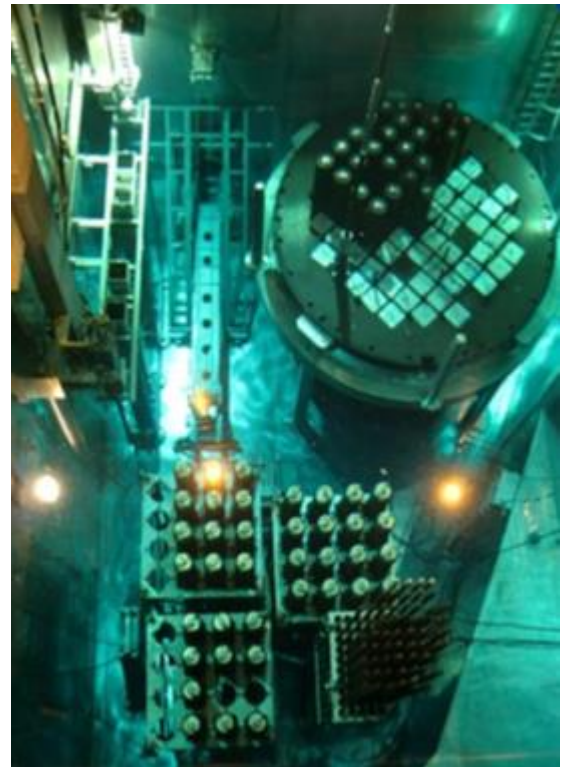
Framatome has developed a solution to safely and rapidly replace the complete assembly, including thermocouple piping. The operation can also be limited to thermocouple piping replacement, according to the need.

A specific scenario is developed for each operation, depending on the number and position of thermocouple columns and piping to be replaced

The operation consists in:

- Installing a platform and radiation shielding if necessary
- Performing televisual inspection of the thermocouple piping
- Removing and re-installing the necessary drive shafts and guide tube
- Extracting and withdrawing the thermocouple
- Disconnecting/reconnecting thermocouple pipework
- Replacing the thermocouple column
- Performing functional tests on the column
- Performing electrical tests on the thermocouple and the new column
- Performing final televisual examination of the piping and upper support plate

Dosimetry is limited by the use of a radiation shield as necessary and continuous and accurate monitoring during site work.



Working area for column replacement

Customer benefits

- A reduced dosimetry thanks to a constant monitoring
- A turnkey solution with a all-in-one operation

Key figures

5 thermocouple columns replaced from 2009 to 2014.

100% customer satisfied

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is our everyday commitment**