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ASTRID FUEL HANDLING ROUTE FOR THE BASIC DESIGN

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At the beginning of the Basic Design phases of ASTRID starting in 2016, the entire fuel handling route has been challenged in order to improve some aspects like availability and investment cost. Especially, studies performed at the end of preliminary design (2010 – 2015) phase show that the availability target will be difficult to obtain with a significant risk of malfunction because of multiple handling operations in series. Two main changes have been then decided: the implementation of an in-sodium external buffer zone, similar with an in-sodium external storage but associated with an in-primary vessel storage to reduce its size and its allowable residual power, and the merging of the fresh assembly storage with the spent fuel assembly storage that allows both reduction of size and equipment. These new options have the first advantages to reduce drastically the number of operation that has to be done during scheduled outage and minimizing the overall Balance Of Plant.

After description of the entire fuel handling route adopted for ASTRID, this paper aims at identifying the advantages of this new option and points the remaining issues or questions that will be studied in details during the current Basic Design phase.

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Primary author: Mr DECHELETTE, FRANCK (CEA)

Co-authors: Mr COURCIER, Christophe (AREVA NP); Mr HIRN, Julien (AREVA NP)

Presenter: Mr DECHELETTE, FRANCK (CEA)

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