

**SUMMARY OF TECHNICAL SESSION IV:
SAFETY AND CONTROL OF ADS**

Chairs: J-M. Lagniel, P. Coddington

Two papers – very design specific – were presented describing the results of WP2 of the PDS-XADS project and covering the two 80 XADS designs. The conclusions reached were: a) a Pb-Bi reactor ADS has significant safety characteristics, particularly if it has a low Δp and a high natural circulation flow rate, and b) a gas-cooled system has a short space period for beam-shut off end. Any pump-driven system will lie between these two.

We heard about the new Pb-Bi loop, which provides neutral circulation, etc., and is useful for only Pb-Bi system.

An interesting paper was presented describing a proposal for dynamic control of an ADS by linking.

The intriguing use of void boxes with mini cycles to control reactivity swings was discussed as well as plans to look at burnable poisons.

A paper compared the PDS-ADS Pb-Bi 80 MW and the reactor design considered as part of the EU FUTURE project.

- This has oxide fuels with Am and Cm, leading to different fuel thermal properties and reduced \geq and large positive void worth.
- Compensation results presented for TOP.
 - UTOP results sensitive to fuel properties – providing small in comparison to the subcriticality level. Power change is the same.
 - ULOF because of high subcriticality margin. Power remains ~ 1.0 so response is function of flow reduction, i.e. system behaviour.
- *Results are sensitive* to the change in fuel thermal properties.

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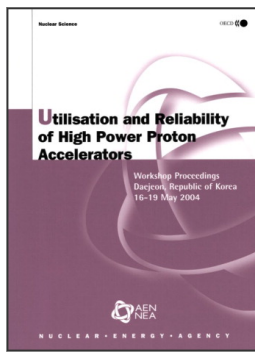
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