

DE LA RECHERCHE À L'INDUSTRIE



FAST REACTORS AND
RELATED FUEL CYCLES 2013
*SAFE TECHNOLOGIES AND SUSTAINABLE
SCENARIOS*

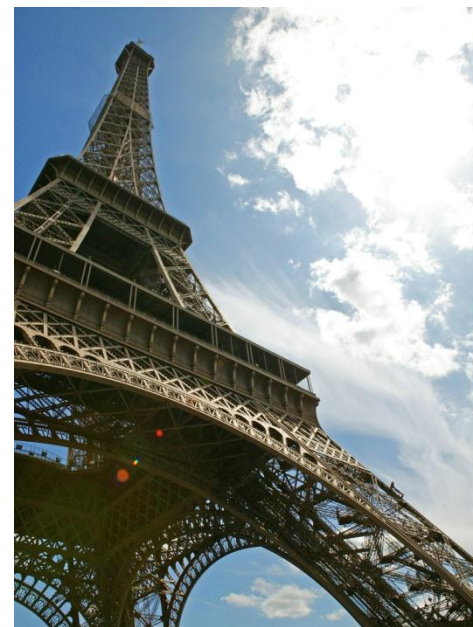
CONCLUDING REMARKS

FR13 Conference
Christophe Béhar

MARCH 7th, 2012

www.cea.fr

- 650 attendees (over 700 registered)
- From 26 countries and 4 international organizations
- 375 papers and presentations
- A strong scientific support through
 - The International Advisory Committee
 - The International Scientific Program Committee
 - Track Leaders
- IAEA support
- CEA sponsoring and local organization
- The French Nuclear Energy Society SFEN



I want to thank all those who helped

- All of the countries developing or involved in the development of Fast Reactors technologies, attended
 - Belgium, China, EU, France, India, Japan, Rep. of Korea, Russia, USA

- An active international collaboration within:
 - GIF,
 - IAEA/INPRO,
 - IAEA Fast Reactor working group
 - OECD/NEA,
 - European Framework Programs



- **Some example** of recent promising results shown during the conference:
 - Generation 4 Safety Design Criteria
 - Severe accidents
 - Low reactivity effect of coolant void
 - Efficient and Reliable Decay Heat Removal systems
 - Advanced core catcher technology
 - Practical elimination of prompt criticality
 - Chemical accidents
 - Better protection of sodium systems and Steam Generators
 - Suppressing sodium water interaction with gas power conversion systems
 - Technology
 - Improved detection systems
 - Low swelling steel for fuel clad
 - Simulation
 - Extended Monte-Carlo simulation techniques
 - Multi physics coupling & High Performance Computing

- **Several existing Fast Reactors**

- BOR-60 & BN-600 in Russia
- CEFR in China
- FBTR in India
- JOYO and MONJU in Japan



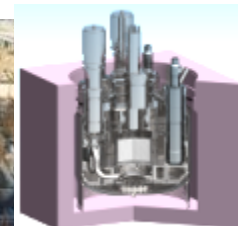
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- **Two constructions are underway**

- BN-800 in Russia
- PFBR in India

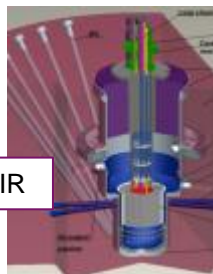


BN800

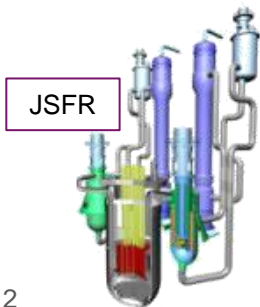


- **Many projects are seriously engaged**

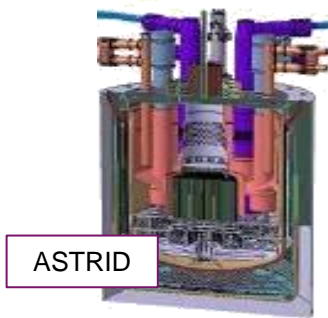
- ASTRID in France
- MBIR, BN-1200, SVBR-100 and BREST-300 in Russia
- MYRRHA in Belgium
- ALLEGRO in Europe



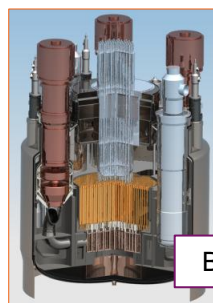
MBIR



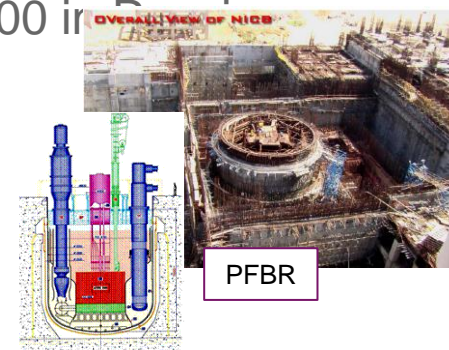
JSFR



ASTRID



BN1200



PFBR

- Significant improvement of Safety compared to existing reactors
- Several initiatives to define and meet Generation 4 objectives
 - GIF Roadmap update
 - GIF Safety Design Criteria for Sodium-cooled Fast Reactors
 - Feedback experience from Fukushima-Daichi severe accident
 - Western European Nuclear Regulators association
 - IAEA Safety standards
- Basically Fast Reactors and associated fuel cycles allow a sustainable development of nuclear energy
 - Fuel treatment and recycling
 - Management of radioactive waste

- Thanks to the International Scientific Committee of the conference
- The support of the IAEA
- Countries that have participated
- Japan for having organized the previous FR09
- Russia to take the lead for next FR17



Thank you for your contribution

→ *Looking forward to seeing in Russia at FR17*

