



**INTERNATIONAL
NUCLEAR ENTERPRISE
GROUP, LLC**

Furthering Non-Proliferation through Program Coordination

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The Task at Hand

- To stop the global threat of nuclear terrorism
- Several important and far-reaching programs geared to this end
- In many instances progress limited by funding limitations

Moving Non-Proliferation Forward

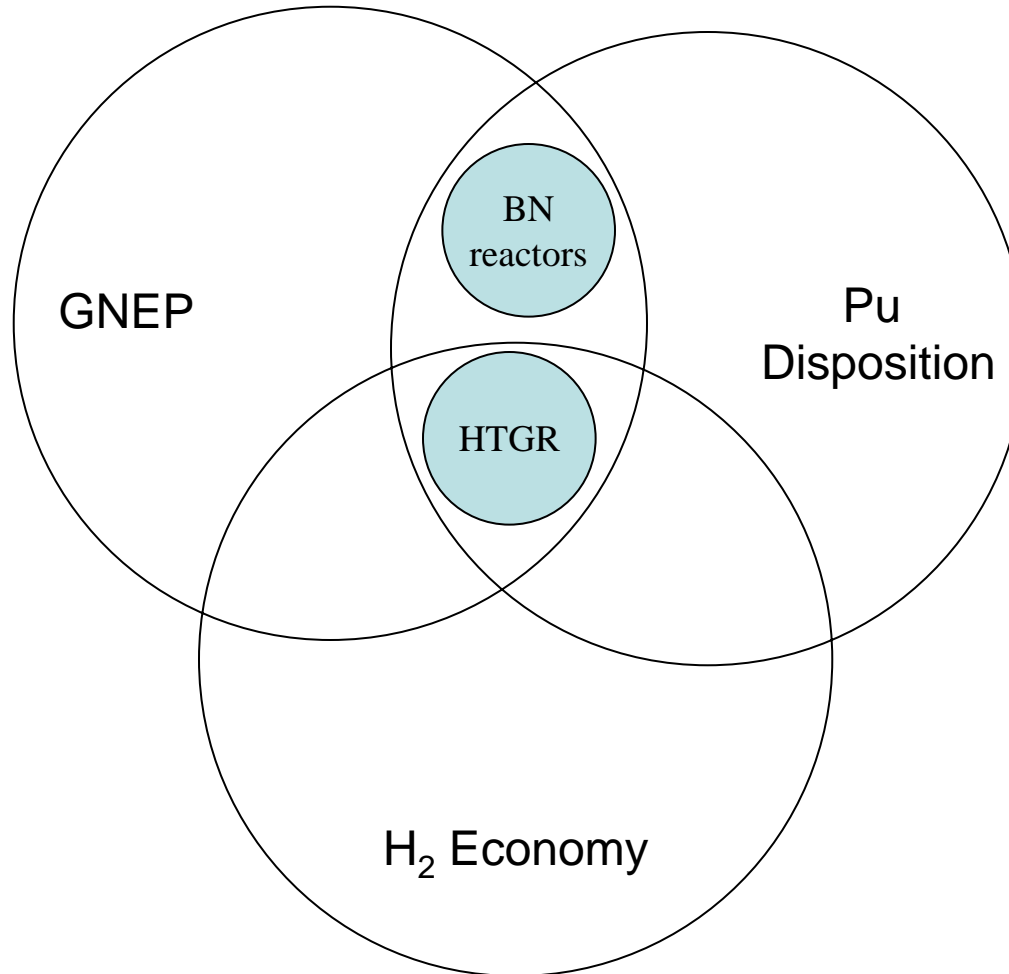
- Maximize funds available:
 - Broader view of program goals
 - Take advantage of common ground between programs
- Competition, rather than coordination, often defines the program interrelationships
- Synergies can be identified
- Actively partner the existing non-proliferation and other nuclear infrastructure programs
 - Leverage financial and technical resources
 - Yet maintain each program's individuality and independence

Three Current Programs

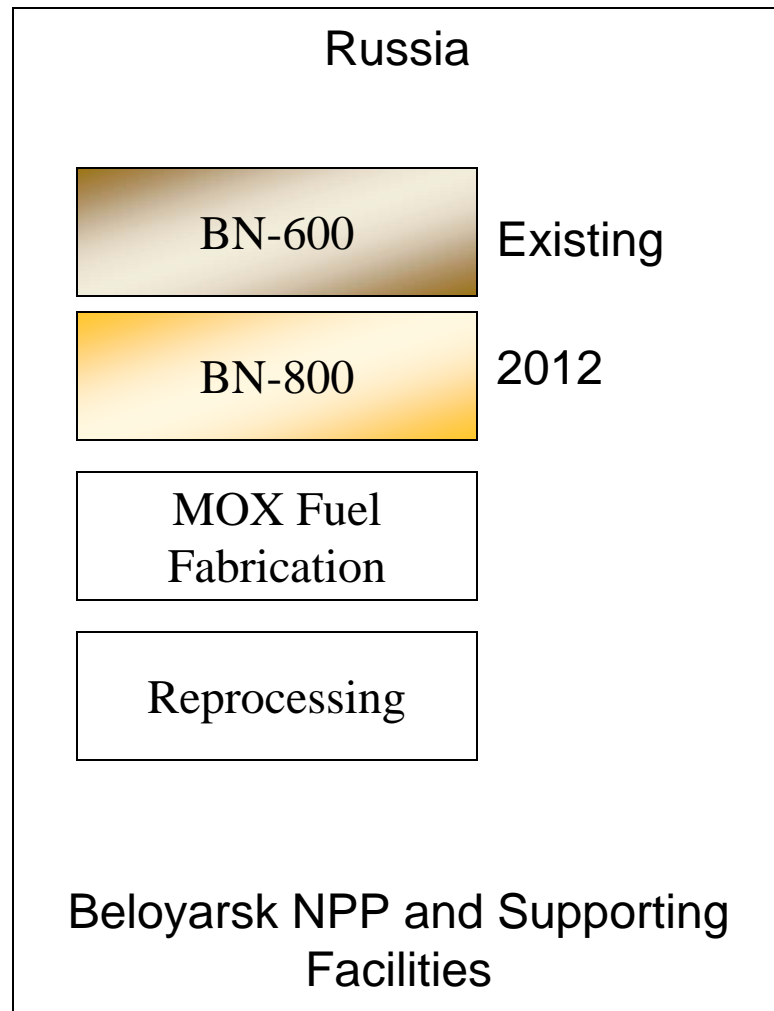
- GNEP
 - Recycle nuclear fuel without separating plutonium
 - Actinide fuels with UREX Plus or Pyroprocessing.
 - Construction of a new suite of fuel cycle facilities and reactors will require 15 to 20 years in U.S.
- Russian Plutonium Disposition Program
 - Destroy plutonium withdrawn from dismantled weapons
 - Full funding not yet available
 - Plans for BN-800 fast breeder could jeopardize program support
 - Unable to embrace advanced reactor options
- Hydrogen Fuels Program
 - Switch transportation fleets from oil to hydrogen
 - Need a “clean” source of hydrogen, nuclear the lead contender
 - Funding for nuclear component limited



Program overlaps

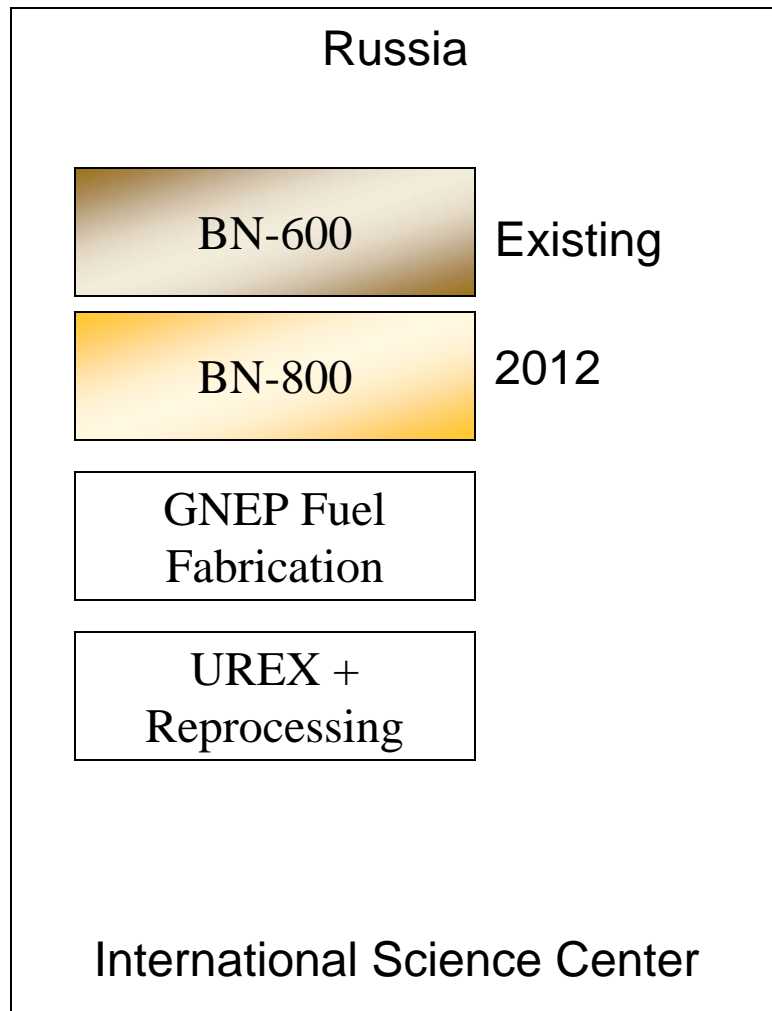


Beloyarsk NPP, Russia



- Proven fast reactor technology
- BN-600 uranium-fueled
- BN-800 MOX-fueled
- No fuel cycle facilities exist
- Conventional reprocessing could jeopardize the plutonium disposition program.

International Science Center



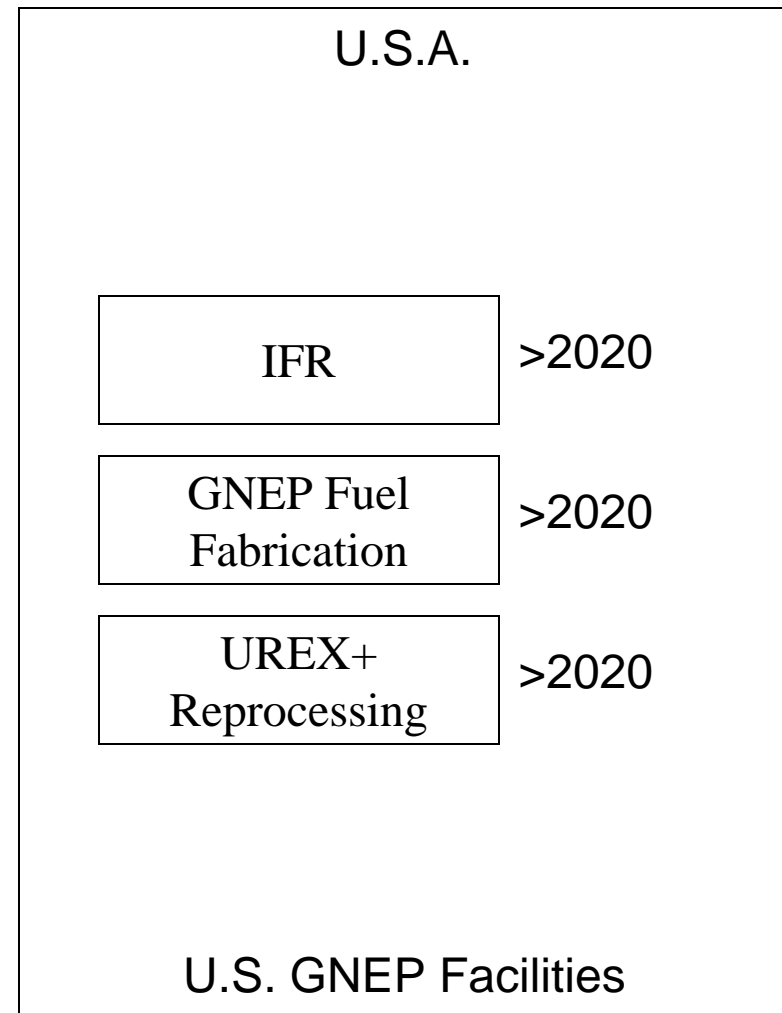
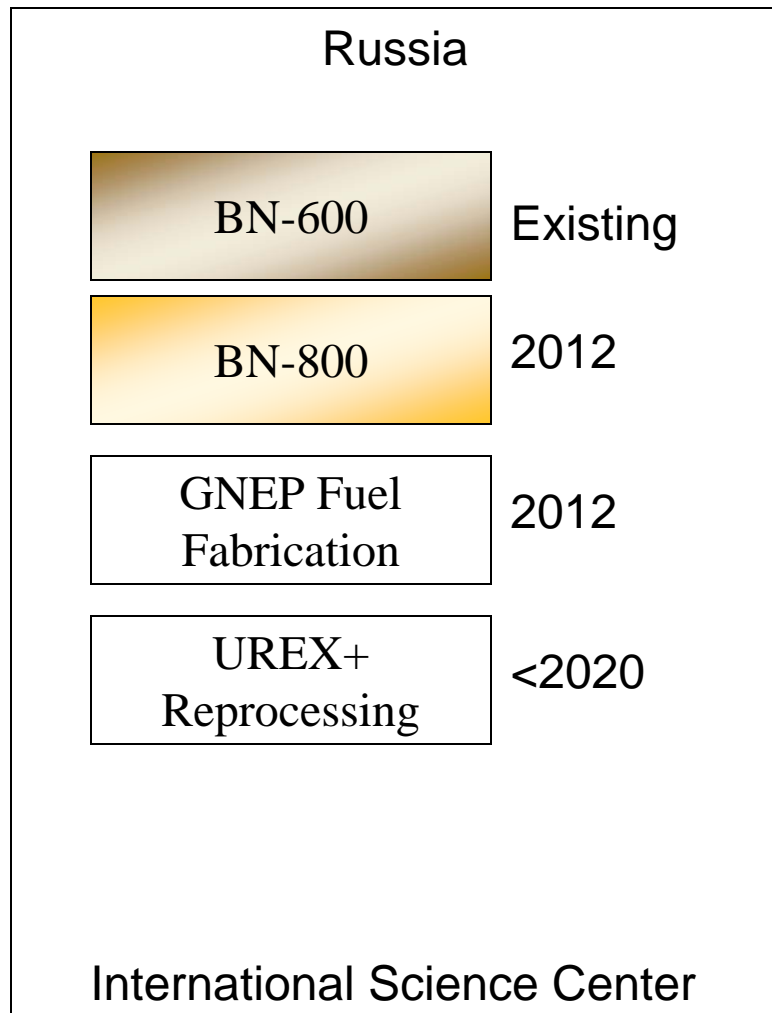
- Analogous to the International Enrichment Center
- Beloyarsk fast reactors as the center of advanced fuel cycle development
- IAEA Safeguards
- International participation in science-related aspects

Benefits

- Benefits to Russia
 - International Funding
 - Technology transfer
- Benefits to International Community
 - Significant role in GNEP, Plutonium Disposition and Gen IV programs
 - Individual programs benefit from funding from several sources
 - Get early results for each program
- 10 years ahead of U.S. GNEP facilities?



Advanced Fuel Cycle Facilities



Other Considerations?

- Would this slow the BN-800 program?
 - Russian MOX fuel fabrication technology adaptable to actinide fuel fabrication
 - Reprocessing plant not needed immediately
 - Plutonium stocks adequate, including ex-weapons material
 - Time to develop alternative technologies
- Can commercial electricity production be wedded to international R&D programs?
 - Superphenix and Phenix showed that this possible

The Next Challenge

- Obstacles to program coordination are artificial
- Benefits of program coordination are real
- Rewards in terms of reducing global security risks

How can we best realize these rewards?