

NEAC International Subcommittee Report

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Background

- **China has the fastest growing commercial nuclear power program in the world, which will likely exceed that of the U.S. in about one decade**
- **Expansion of China's commercial nuclear power program aligns well with U.S. policy initiatives, including climate change**
- **China also has a very aggressive R&D program on advanced reactors, including sodium fast reactors, high temperature gas cooled reactors, and molten salt reactors**
- **Continued collaboration with China provides opportunities to U.S. companies in commercial nuclear exports and can leverage U.S. limited funds for advanced reactor R&D**

Background (cont'd)

- **Collaboration with China has other potential long-term benefits**
 - **Enhancing global nuclear safety**
 - **Increasing nuclear security**
 - **Developing human capital with a strong safety culture**
- **Potential pitfalls in collaborating with China center on protection of intellectual property (IP), but it is well recognized and it is widely believed that practices exist to properly deal with this issue**

DOE Charge to NEAC International Subcommittee

- **Review the existing bilateral and multilateral nuclear collaboration between the U.S. and China, as well as joint commercial activities between the two countries**
- **Make recommendations to minimize any potential negative impacts on U.S. interests of these collaborations**
- **Make recommendations on potential mechanisms to increase the effectiveness and/or how to enhance the benefits of continued and/or additional collaborations in support of USG and U.S. industry objectives**

Existing Collaborations with China

- **Bilateral Programs**
 - **Peaceful Uses of Nuclear Technology (PUNT)**
 - **U.S. – China Bilateral Civil Nuclear Energy Cooperation Action Plan**
 - **DOE – China Academy of Sciences (CAS) Collaboration**
- **Multilateral Programs**
 - **International Framework for Nuclear Energy Cooperation (IFNEC)**
 - **Generation IV International Forum (GIF)**

Subcommittee Activities To date

- **NEAC International Subcommittee met on May 6-7, 2015, in Washington DC to obtain input from both U.S. government and private sector organizations**
- **Presentations to the Subcommittee were made by:**
 - **Department of Energy**
 - **Nuclear Regulatory Commission**
 - **National Laboratories (INL, ORNL, and ANL)**
 - **Universities (MIT, Texas A&M, and U of Michigan)**
 - **Commercial nuclear companies (Westinghouse and Lightbridge)**
- **These provided the initial input to the Subcommittee for deliberation**

Preliminary Findings

- **Nuclear power should be treated as a more strategic matter and not handled like other energy sources**
- **U.S. and China have shared interests in ensuring that nuclear energy is safe, proliferation resistant, and that nuclear waste is manageable**
- **U.S. university system should be treated as a strategic asset and provides a valuable component in engagement with China**
- **Greater collaboration between the NRC and the Chinese regulator (NNSA) would be beneficial to both countries**

Next Steps by the Subcommittee

- **Obtain additional input from DOE, commercial entities, and others regarding the benefits and risks of collaboration with the Chinese**
- **Consider the likely strategy of the Chinese regarding continued reliance on LWRs versus moving to advanced reactors, and the resulting implications**
- **Explore the adequacy of controls on the use and export of technology transferred from U.S. entities to the Chinese**
- **Examine other issues that arise from evolving events and knowledge of the Subcommittee members**
- **Forge a consensus opinion on the recommendations to full NEAC Committee for presentation in December 2015**