

**Advance Nuclear Fuel Cycles and the Nuclear Energy Commercial Sector,  
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**Key Points:**

Industry support for Advance Nuclear Fuel Cycles

Technical Challenges

Political Challenges

Regulatory Challenges

**Industry support for Advance Nuclear Fuel Cycles**

US government work on Advance Nuclear Fuel Cycles is a means of re-establishing the US as a World leader in nuclear energy

- Expansion of nuclear power domestically and internationally

- Addresses concerns with commercial applications of nuclear energy and proliferation

- Provides for improved safety of reactor operations around the world

**Technical Challenges**

Transuranic fuel is the largest technical challenge

- Fabrication of the fuel

- Fuel performance

**Political Challenges**

Getting Congress on board

- Near term funding

- Sustain funding for out years

## **Regulatory Challenges**

Who is the regulator DOE or NRC?

Industry preference is NRC for commercial facilities

Nuclear Fuel Recycling Center

Transuranic fuel fabrication facility

Advanced recycle reactor

Industry preference for DOE

Research and Development facilities

NRC regulatory challenge

Does it establish unique environmental impact statements for each facility or

Development a generic environmental impact statement for the transuranic fuel cycle

Current NRC regulatory basis is on a generic environmental impact statement for less than 5% uranium dioxide fuel in a once through fuel cycle.

NRC should pursue a generic environmental impact statement for a transuranic or actinide fuel cycle in order to establish the regulatory basis for licensing the facilities that will support the implementation of advanced nuclear fuel cycles.

NRC should work in concert with DOE as DOE prepares its EIS to support the GNEP program. A large portion of the DOE EIS can be used to support the required NRC EIS for advanced nuclear fuel cycles.

## **Summary**

The Industry supports the US government pursuit of advanced nuclear fuel cycles

The technical challenge is the fabrication and operation of actinide fuel

The political challenge is establishment of funding to support the program through the years of development

The regulatory challenge is the development of the environmental underpinning to support the regulatory program