Recycle 2015: Facilitating Commercialization of Nuclear Fuel Recycling Facilities

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Outline

- Introduction
- Potential Roles and Responsibilities
- Recycle 2015: Concepts and Key Elements
- Topics of Interest
- Next Steps

Introduction

- Presentation outlines various ideas and concepts under consideration by DOE; however, no decisions have been made and DOE is continuing to review and evaluate options
- DOE is currently preparing a draft Programmatic Environmental Impact Statement (PEIS) for the Global Nuclear Energy Partnership (GNEP) program
- After public comment and issuance of the final PEIS, the Secretary of Energy would issue a Record of Decision addressing the path forward for GNEP
- That decision would include consideration of potential environmental impacts and other factors, such as proliferation risk, technical considerations/technology maturity, economic considerations, and legal and policy matters

Potential Roles and Responsibilities

Industry

Responsibilities:

- *License applicant*
- *Design & construction*
- *Facility operations*
- *Commercial contracting*
- *Compliant with policies*
- *Accountable to regulators*

NRC

Responsibilities:

- *Regulatory framework lead*
  - *Rule making*
  - *Regulatory Guidance*
  - *Standard Review Plan*
- *License review & approval*
- *Regulatory oversight*

DOE

Responsibilities:

- *Policy*
  - *Safety & Environment*
  - *Waste management*
  - *Non-proliferation*
  - *Domestic & International*
- *Coordination with other agencies and industry*

Recycle 2015: Concepts and Key Elements

- **DOE is considering an NP2010 – like approach to facilitate commercialization of the back-end of the fuel cycle**

- **Key elements of the "Recycle 2015" concept could include:**
  - Regulatory risk reduction (e.g. Part 70, one-step, etc.)
  - Commercial risk reduction (e.g. loan guarantees)
  - Cost share with utilities to qualify U.S. LWRs to use MOX fuel
  - Cost share with fuel cycle vendor industry on early design and licensing of commercial recycling facilities
  - Addressing transportation security in an economical fashion
  - Optimization of waste management plans

With stakeholder input and transparency, work over the next several years will inform legislators and policy makers in establishing the appropriate laws, policies and frameworks.

Topics of Interest

- **Under NP2010, DOE cost shared with industry was 50/50**
  - What is the appropriate level of cost share with the recycling industry?
- **Under NP2010, DOE worked with NEI and EPRI as the "utility industry representative"**
  - What is the right organization to represent the fuel cycle vendor industry?
- **Funding & Governance**
  - Industry suggested establishment of a new government entity with access to the nuclear waste fund to manage used nuclear fuel; both recycling and repository
  - The new government entity would contract with industry for recycling services
- **EPACT 2005 codified key elements of the NP2010 program**
  - Loan guarantees
  - Regulatory risk insurance
  - Production tax credit

Next Steps

- Work with industry under Cooperative Agreements to mature facility design concepts
- Manage technology development at DOE national laboratories to address technical risk areas (e.g. radioactive gas capture)
- Work with NRC
- Increased interactions with utilities and other stakeholders
- Prepare programmatic environmental impact statement (PEIS) leading to a path forward decision
- React to legislative funding and direction
- Prepare for administration transition