

## NAC International Approach to Global Threat Reduction

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#### **NAC Forward Looking Statements**

This document contains "forward-looking statements" – that is, statements related to future events. In this context, forward-looking statements may address our expected future business and financial performance, and often contain words such as "expects," "anticipates," intends," "plans," "believes," "will" and other words of similar meaning. Forward-looking statements by their nature address matters that are, to different degrees, uncertain. Particular risks and uncertainties that could cause our actual future results to differ materially from those expressed in our forward-looking statements include, but are not limited to: market demand for our products and services; the availability of government funding and appropriations; potential liabilities associated with the storage and transportation of toxic, hazardous and radioactive chemicals; the impact of government regulation; and other risks and uncertainties discussed in USEC Inc.'s filings with the Securities and Exchange Commission, including its Annual Report on Form 10-K/A. We do not undertake to update our forward-looking statements except as required by law.



## NAC International Quick glance

- Established in 1968 specializing in handling of nuclear fuel for almost 40 years
- Located in Norcross (Atlanta), Georgia 80 employees
- Wholly owned subsidiary of USEC purchased in 2004
- Offices in Russia, Europe, Japan, and U.S.
- More than 30 years of non-proliferation support



### Significant Contribution to Non-Proliferation Efforts

- Rescue type missions (Iraq; Tbilisi, Republic of Georgia)
- Fuel stabilization, canning (North Korea, Kazakhstan)
- US non-proliferation campaigns (Foreign Research Reactor program; Taiwan, etc)
- HEU/LEU conversion for US research reactors



# NAC-LWT

- Versatile cask for commercial and research reactor fuels
- Eight casks currently in use
- Meets all USNRC and IAEA requirements





## **NAC-LWT Cask Capabilities**

- Certified for greatest number of research reactor fuel designs of any commercial cask - MTR, DIDO, TRIGA, PULSTAR, and others
- Large transport capacity

   Up to 42 square or round elements per cask
  - Up to 140 TRIGA rods per cask
  - 140 or more Russian origin fuel types
- Received validation in more than 20 foreign countries
- Unique support equipment for research reactor operations
- Utilized in all transport modes: truck, rail, maritime and air shipment

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## Cask Operations – Basket Loading









# **NAC Integrated Capabilities**

- Experience in multi-mode transport and associated international regulations
  - Truck
  - Rail
  - Maritime
  - Barge
  - Air
- Knowledgeable, well-trained and highly experienced staff
  - Fuel loading
  - Degraded fuel handling and operations
  - Cask operations
  - Transportation
  - Cask certification and international validation
  - Familiarity with qualified non-NAC transport casks
  - International regulations
- Complete range of skills and equipment

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## Spent Nuclear Fuel (SNF) Shipment Experience

- Research Reactors
- University Shipments
- Nuclear Power Plant Shipments
- Other SNF Shipments (experimental programs, facilities decommissioning)



### Identification of the needs for Spent Nuclear Fuel Transportation

- Expanded focus on GTRI:
  - Foreign Research Reactor Program (FRR)
    - Focus on return of U.S. origin HEU
  - Russian Research Reactor Fuel Return program (RRRFR)
    - Return approximately 15,000 fuel elements to Russia
  - Others (GAP Material)
    - Return Other Sensitive Materials including HEU
- Decommissioning programs (experimental fuel removal)
- Continue to serve existing programs (Universities, Nuclear Power Plants, etc).

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## **FRR Fuel Return Program**



### Key Facts ·

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- The most comprehensive international nuclear fuel security program in the world (1996–2019)
- Project to return to the US more than 21,000 assemblies containing USorigin research reactor fuel
- NAC has returned fuel from countries in Europe, Asia and North and South America using truck, rail, air and maritime shipment

### Perspectives for FRR and RRRFR Programs

- FRR program extended until 2019
  - Next 2 to 3 years expected to be very intense
  - Unless the fuel management policies of some eligible countries change, the number of shipments will decrease thereafter
  - Equivalent to 80 to 90 cask loads for remaining years (3,500 assemblies)
- RRRFR Program
  - Challenging program, significant number of shipments Equivalent to 80 to 100 cask loads (15,000 assemblies)
  - Shipments will originate from around 14 countries
- GAP Program
  - Identification of material and location in process

Overall, projected increase in Research Reactor Spent Nuclear Fuel shipments

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### Perspectives – US Domestic Universities and Research Reactor Shipments

- Reactor conversion in progress
- Some reactor terminations
- NAC has been performing a yearly average of 3 to 4 cask/shipments

Projecting similar yearly average for the next 3 to 5 years



### Perspectives on Decommissioning and other Governmental Programs

- Significant programs in progress
- Transportation need expected to increase for the next 5 years

### Projecting an overall increase of the numbers of shipments



### Look Ahead

#### • <u>FRR</u>:

Continue to support DOE and foreign research reactors with return shipments to the US – Program extended until 2019 for return shipment window

Yearly average number of casks should decrease

• <u>RRRFR</u>:

Provide casks, technical assistance and transportation expertise New Program implying a large number of shipments

• <u>GAP</u>

New Program – number of shipments difficult to evaluate at this stage

- <u>Domestic US Universities and research reactors shipment</u> Continue to support DOE, US reactors and universities Yearly average number of shipments should remain stable
- <u>Government supported shipments (decommissioning and mission related)</u>

Expectation of an increase of number of shipments for the next 4 to 5 coming years



## Adequacy of Transportation Infrastructure

- Casks
  - Fleet of casks can support 3 to 4 shipment campaigns per year
- International transportation
  - 4 to 5 INF2 qualified vessels
- Personnel
  - Emphasis on staff complement, training, and procedure enhancement

With anticipated cask licensing and equipment acquisition focus, and rigorous program management, the existing fleet and personnel complement will meet the Program's needsbb

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## Adequacy of Transportation Infrastructure

Last Five Years

Significant under-utilization

<u>Next Five Years</u>

 Full Utilization of Assets and Program Management



### Conclusions Questions

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