



NTP Radioisotopes SOC Ltd

A subsidiary of Necsa SOC Ltd

Pelindaba, South Africa



Session 3: Technical Considerations Conversion to LEU based Mo-99 Production

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**National Academies: Opportunities and Approaches for Supplying
Molybdenum-99 and Associated Medical Isotopes to the Global Market
17-19 July 2017; IAEA, Vienna**

Outline

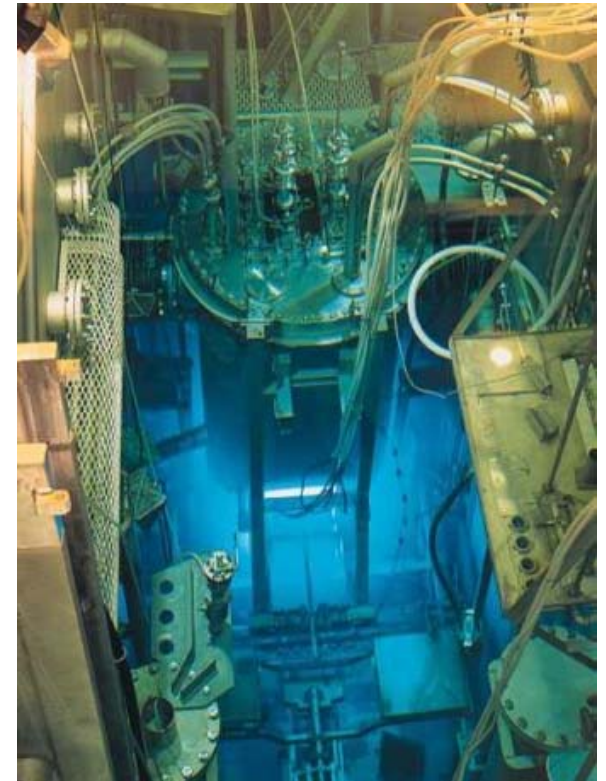
- Broad Principles of Conversion
- Considerations
- Regulatory Matters



Broad Principles

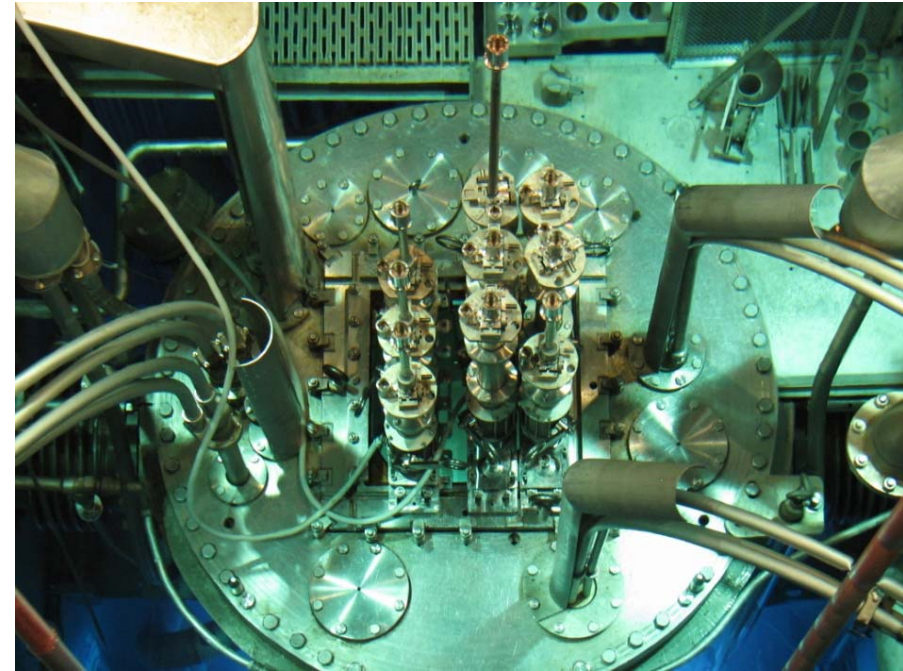
Strategic Considerations

- Minimum changes to target, irradiation, handling & chemical processes
- Retention of production capacity
- No interruption in current production



Broad Principles

- Within HEU safety envelope
- With existing handling equipment
- With existing transfer flasks



Considerations

Year	Event
2007/8	Theoretical feasibility studies & cold experiments
2009	NNR approval received for test stage and first hot runs commence
2010	Hot runs, process validation, regulatory approval
Sep 2010	US FDA approves LEU ⁹⁹ Mo for a customer in the US
Dec 2010	First large scale commercial FDA approved batch of LEU ⁹⁹ Mo produced and shipped to US for patient use
Jun 2011	Routine commercial supply of LEU ⁹⁹ Mo commenced
Sep 2011	Commencement of investment in plant modifications for increased LEU residue storage requirements
Jan 2014	Hot commissioning of new LEU specific production line
Dec 2014	Commencement of project to manufacture & install 2 nd LEU design dissolver cell
Jan 2017	Hot Commissioning of new uranium residue facility

Considerations

- Time Line
- Technical Complexities
- Scalability
- Transition
- Ongoing Routine Production
- Increased waste volumes

Regulatory Matters

- Nuclear Regulators
- Medical Regulators
- Validation



Thank you for your attention

