Technical Considerations in Production Expansion

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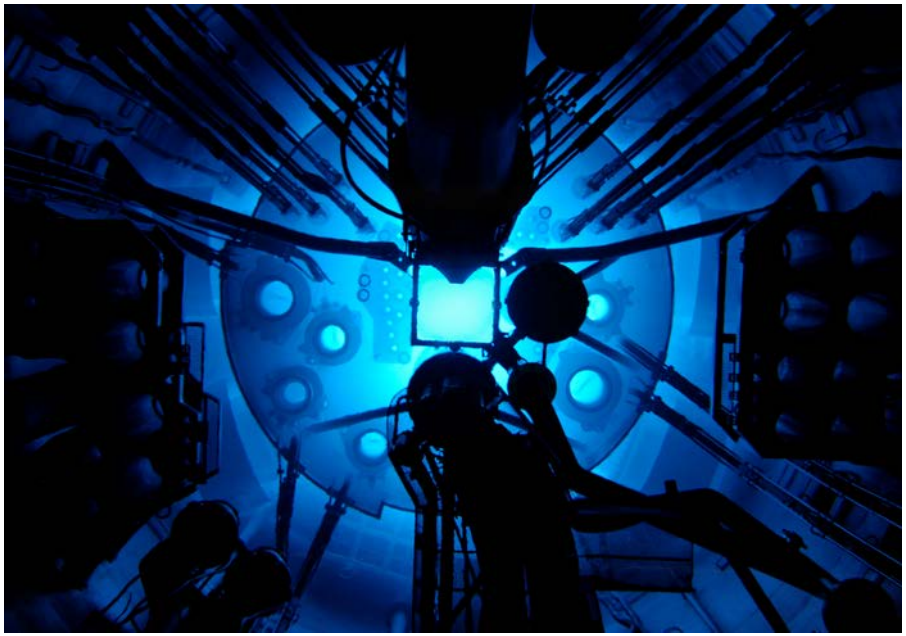
Reliable Supply of Mo-99

Reactor Space & Scheduling

- Require irradiation positions with appropriate flux
- Need to allow for other irradiations
  - Ensure extra irradiations do not disturb other products
  - NTD silicon



Building Services

- Ventilation, Alarms, Power supply etc
- Back-up systems
  - Stand-by fans
  - UPS, back-up generators
- Maintainable without affecting production
  - Consideration as to access

In Cell Equipment

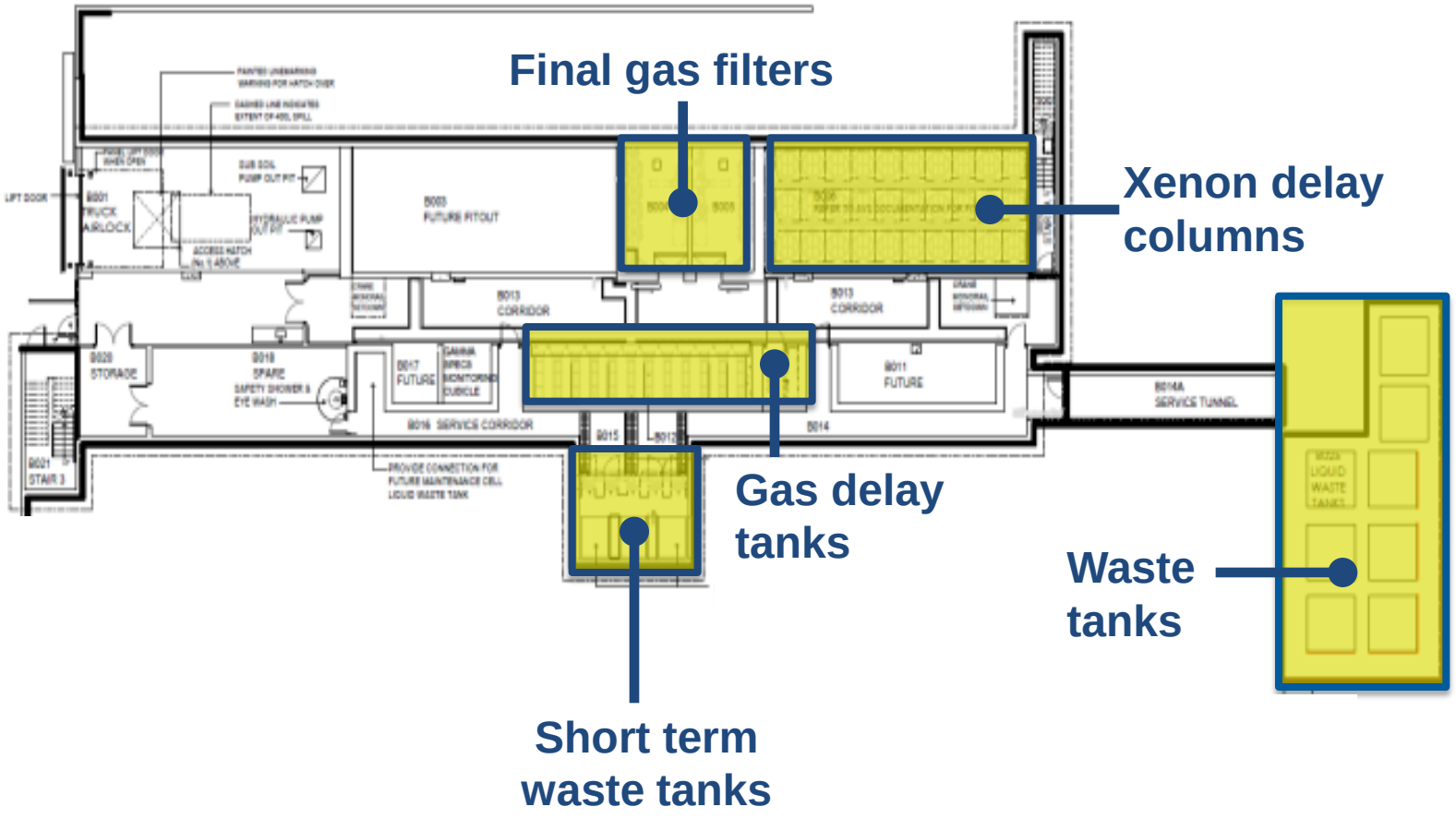
- Redundant equipment
  - Install two pieces instead of one
- Remotely maintainable
- Replaceable without affecting production

Waste

- Handling and storage of waste
  - Major consideration
    - Liquid and Solid
    - Intermediate and Low Level
- Decisions on:
  - In-cell storage
  - Waste tank storage
  - Transfer
  - Treatment
  - Shielding requirements
  - Separation from product

Waste Management

BASEMENT



Plant Emissions

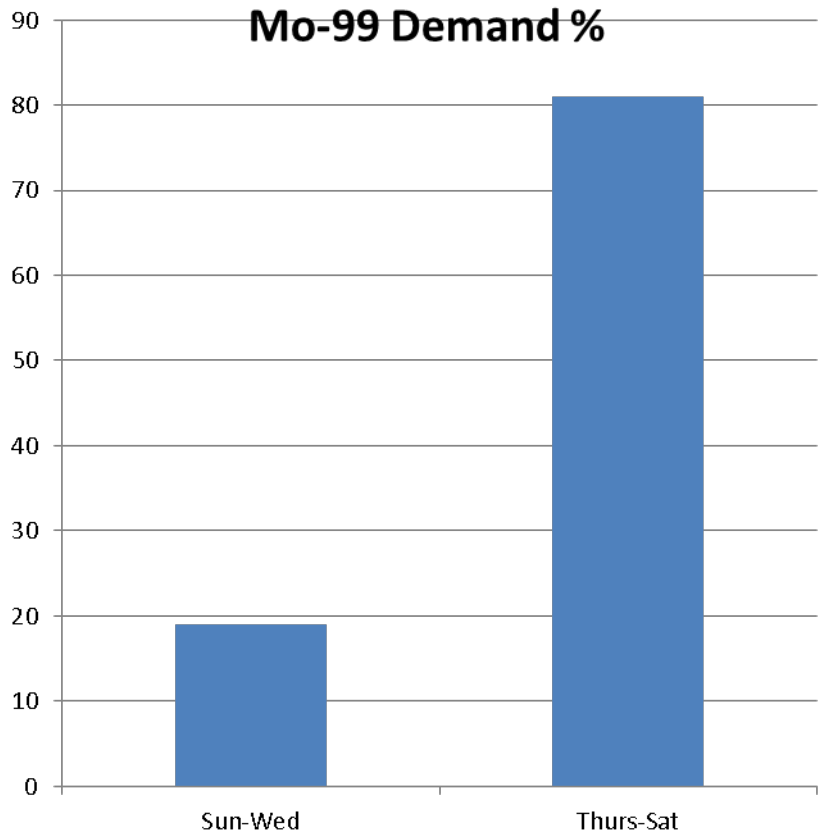
- Major consideration
- Maintain with regulatory limits
  - Limits don’t change with increased production
- Radioactive noble gases
  - Active or passive trapping
  - Tighter restrictions in future
- Radioiodines
  - Prevent emissions?
  - Measures in real time?
  - Manufacture I-131 as a by-product?

Target Density

- Most LEU targets are in the range of 2-6-2.7 g/ccU
- Small increase in target density could give a significant increase in yield
  - Possible with current technology if cladding thickness reduced
  - New technologies being developed

Demand Profile

- Demand for Mo-99 not steady over week
- Need to design plant for large throughput days



Thank you