ANM

ANSTO Nuclear Medicine

Towards a Reliable Supply of Mo-99

Mo-99 Topical Meeting

St. Louis, September 2016

Jayne Senior

Agenda

1. ANSTO Nuclear Medicine (ANM) Background

2. ANSTO Capacity Increase

3. ANM Construction Update

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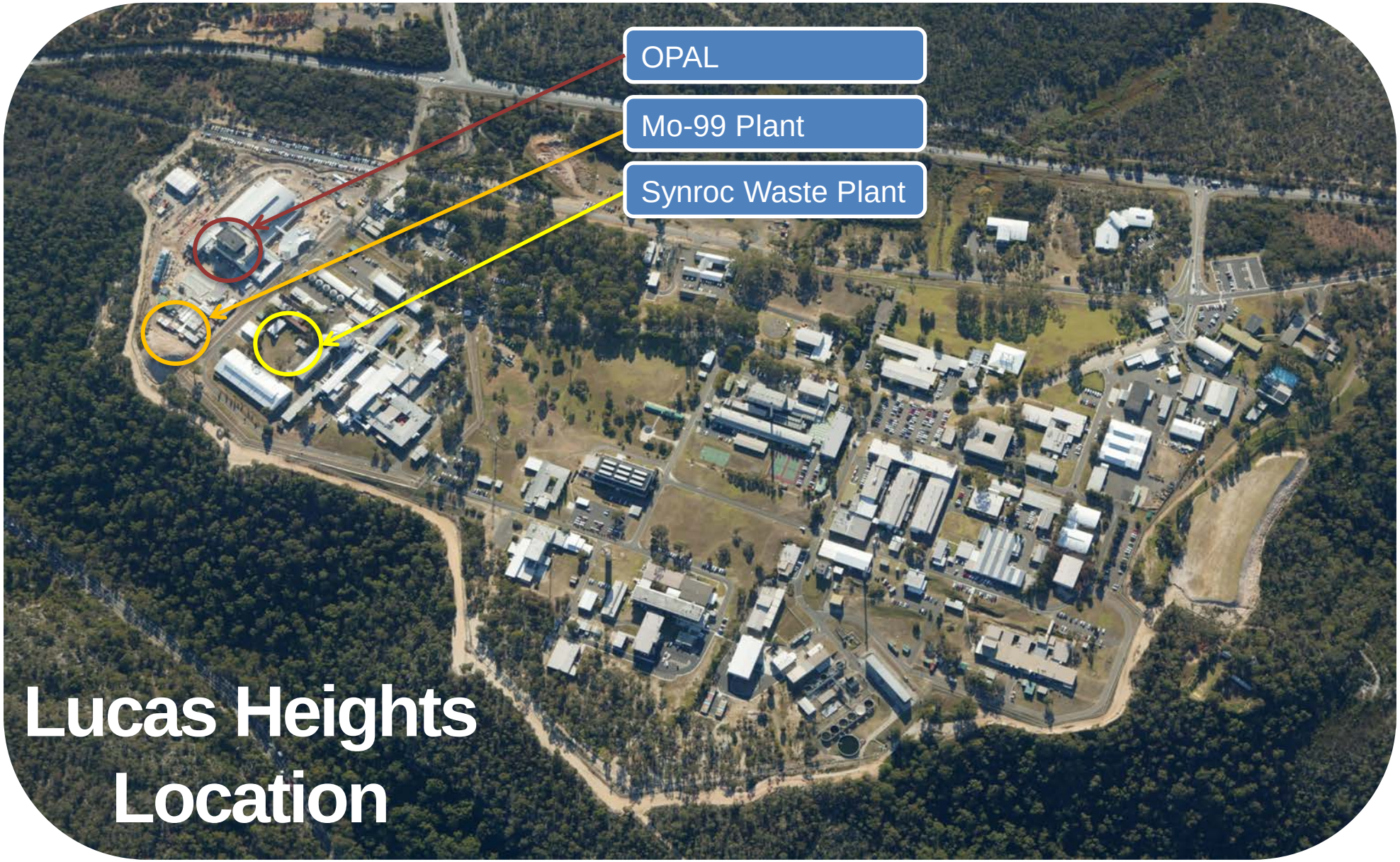
ANM Background



Lucas Heights Location

What is ANSTO Nuclear Medicine?

Design, build & operate

Mo-99 Plant

- Fully operational mid 2017
- Mo-99 facility; 3,500 6 day Ci per week
- Use of LEU fuel & targets
- Proven, reliable technology

Synroc Waste Plant

- Fully operational within c. 2 years of Mo-99 facility
- 100-150 HIP cans per year

Features of ANM Mo-99 Plant

- Proven Technology
  - Base Digestion Process
  - High reliability – combines optimal elements of 2 existing plants
- LEU + LEU
- Fully integrated
  - Opal Operations
  - Waste Management – SyMo (Synroc Technology)
- Compliant with Nuclear and GMP regulations
  - Integrated preparation and testing laboratories
- Low emissions (Xe-133)

ANM Major Phases

- Construction
- Recruitment
- Operational Readiness
- Increase production in current plant

- I&OQ
- Cold commissioning
- ARPANSA submission

- Process Validation
- Hot commissioning
- TGA submission

- Customer Validation
- Process Optimisation
- ANM production start

- Both current plant and ANM in Operation
- ANM production increasing

- Aim: End 2017

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ANSTO Capacity Increase

Current Facility

ANSTO Mo-99 Capacity Increase

Two parts to the project:

Current Plant Capacity Increase

- To assist with market demand

ANM Transition

- Team engagement and resource planning

Mo-99 Capacity Increase

Two parts to the project:

Current Plant Capacity Increase

- To assist with market demand

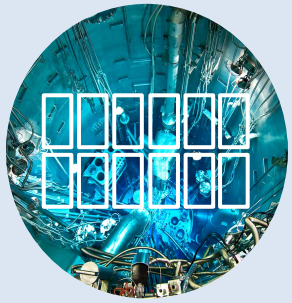
ANM Transition

- Team engagement and resource planning

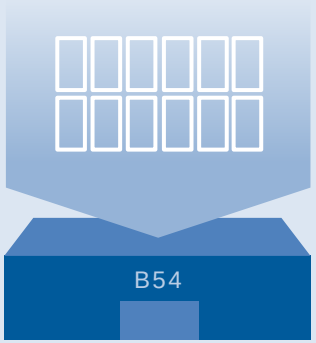
Key Challenges Addressed

- Regulatory approval
- Emissions management
- Resource management

Capacity Increase Status



12 plate irradiations in OPAL



Transport of irradiated targets to building 54

Australian Government
Australian Radiation Protection and Nuclear Safety Agency

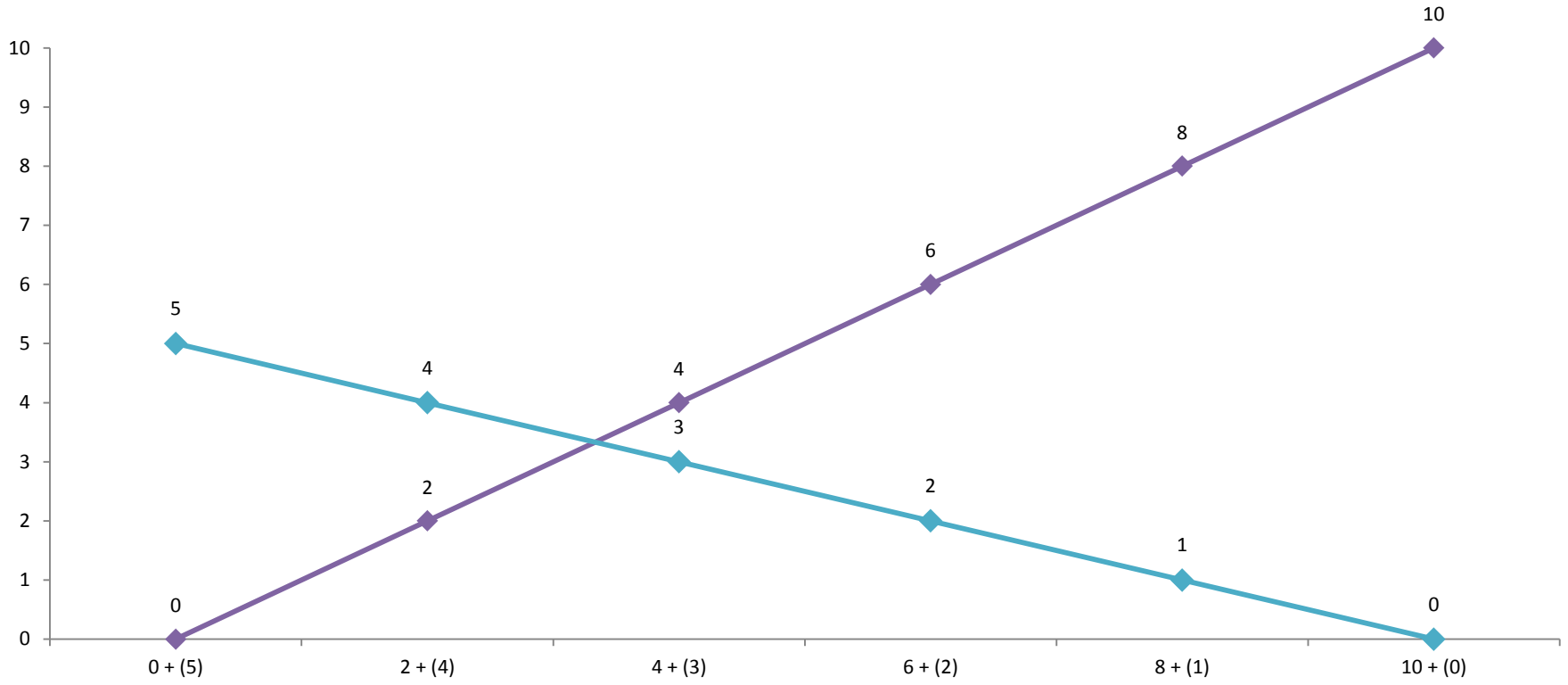
ARPANSA approval 12 plate processing in building 54

Australian Government
Department of Health
Therapeutic Goods Administration

TGA approval 12 plate production in building 54

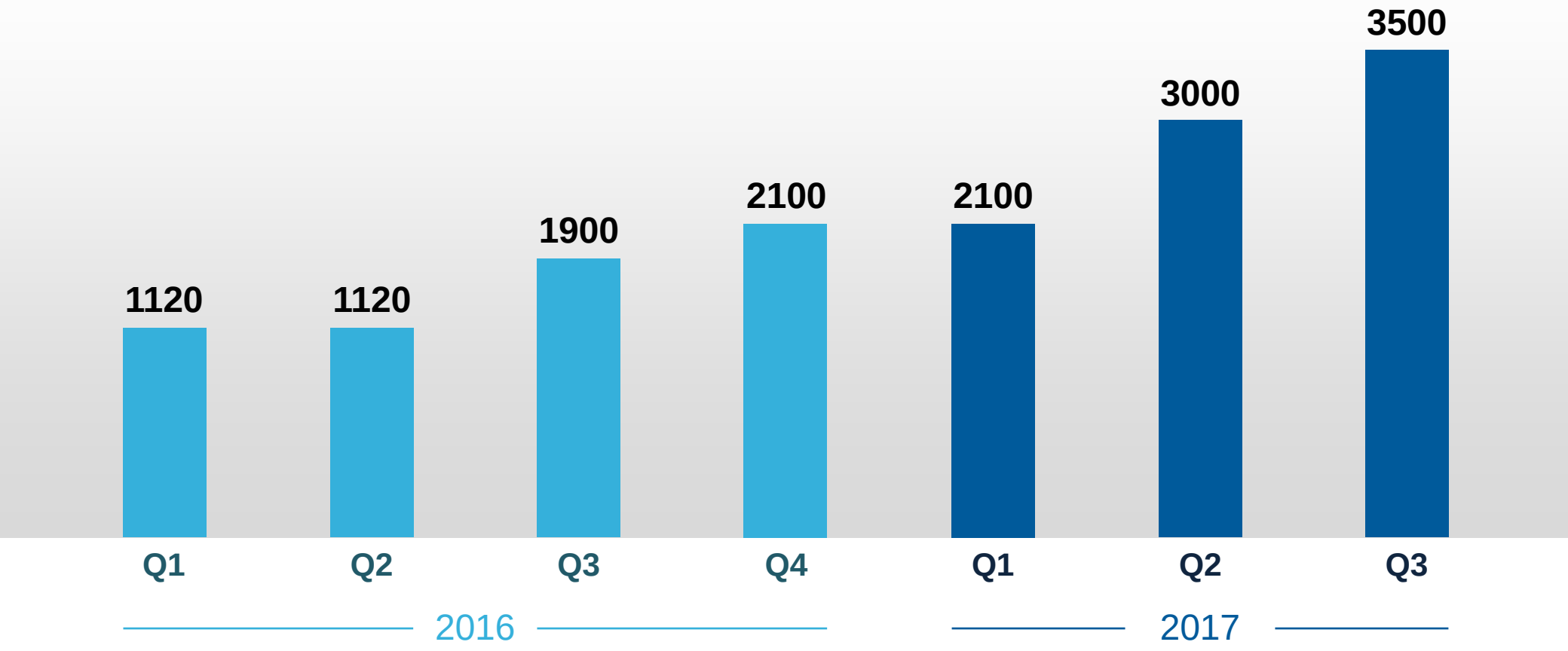
Current Operations and ANM Transition

Planned Scale up of ANM + Reduction in Current Operations



Supply capacity

Projection of 6 day Ci Production advised to OECD



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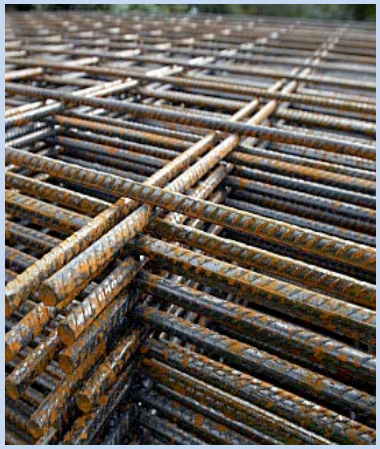
Construction Update

Key Achievements

- Dissolution and Hydrogen cells delivered ✓
- Carbon columns, gas capture, liquid waste tanks installed ✓
- Concrete hot cells poured and fit out commenced ✓
- Manipulators, padiracs and hot cell windows on site ✓
- Preparation laboratories and QC labs built ✓

Project Construction Statistics

5,489	858	296,649	0	3,250
m^3	tonnes	hours	LTIs or MTIs	documents
Concrete	Steel Reinforcement	Construction	Good Safety	Registered
				

Proximity to Opal

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Overview of building

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Overview of building

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North East Façade

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Side View to Service Bay

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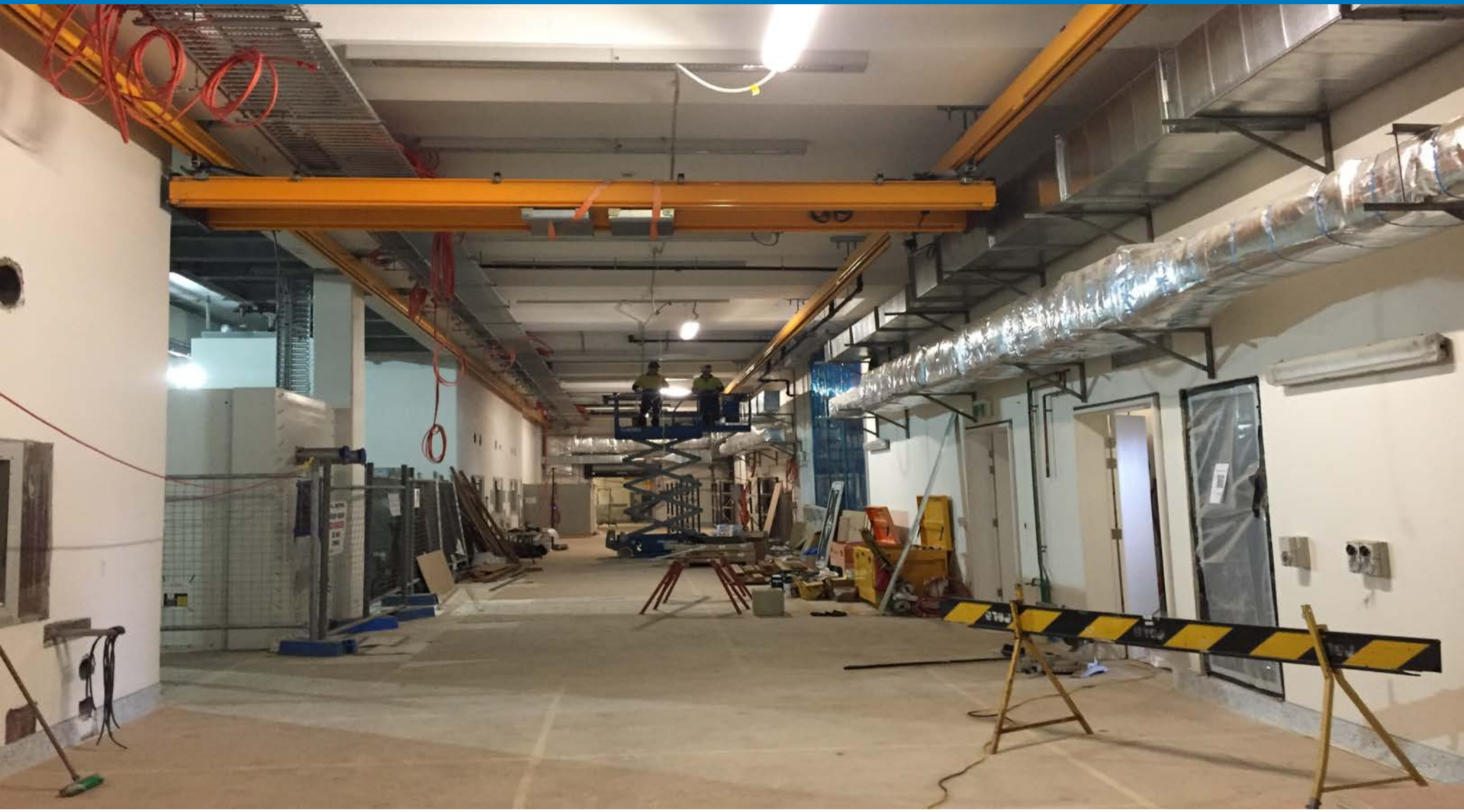
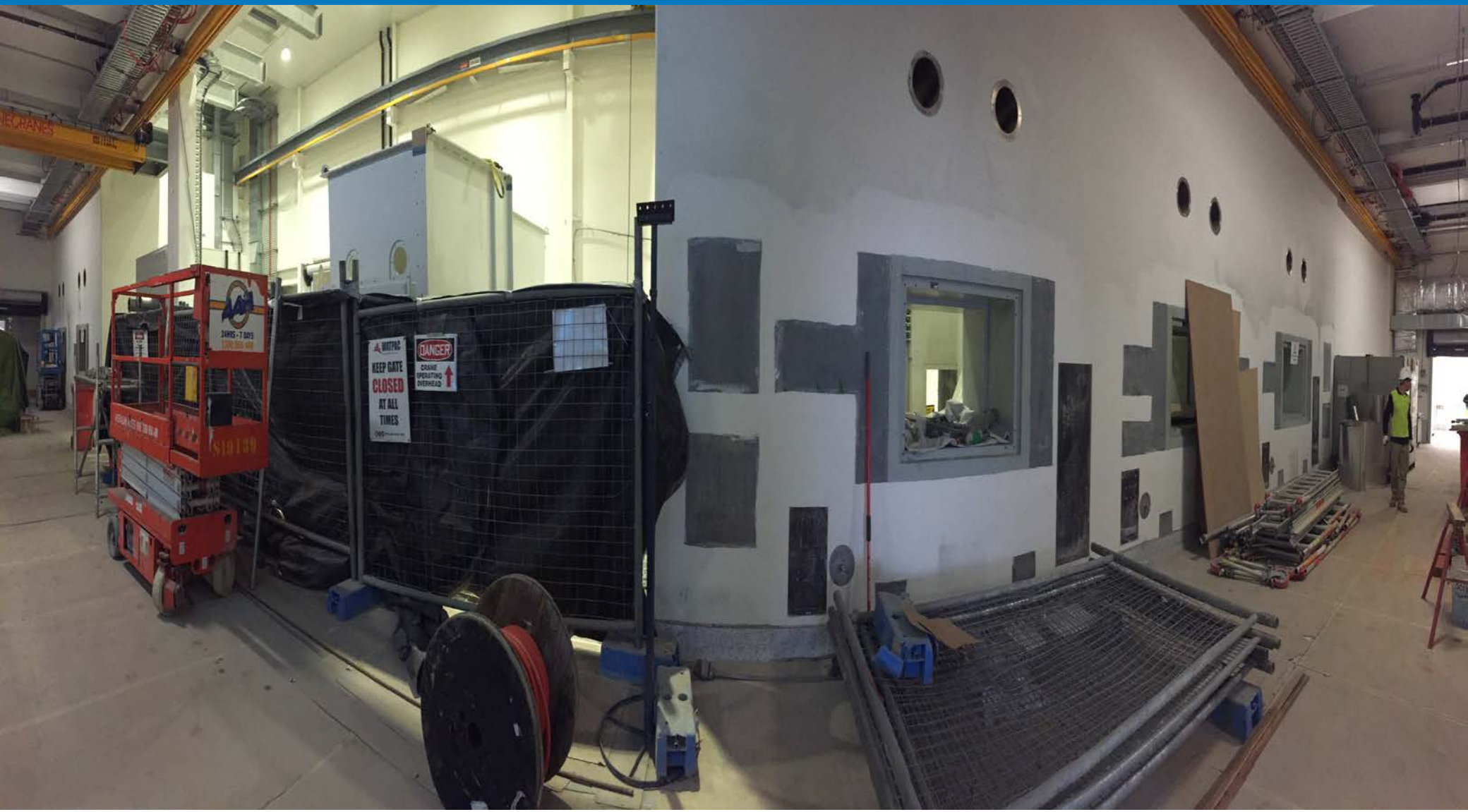
External View with Stack



Front of hot cells



Front of hot cells

Rear of hot cells

Rear of hot cells

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Rear of hot cells

Rear of hot cells (elevated view)

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Delivery of the Dissolution Cell

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IAEA Director General, Mr Amano inspects progress on ANM

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Thank you