Towards a Reliable Supply of Mo-99
Agenda

1. ANSTO Nuclear Medicine (ANM) Background

2. ANSTO Capacity Increase

3. ANM Construction Update
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

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

**Building Contractor Handover**
- I&OQ
- Cold commissioning
- ARPANSA submission

**ARPANSA Licence**
- Process Validation
- Hot commissioning
- TGA submission

**TGA Licence**
- Customer Validation
- Process Optimisation
- ANM production start

**ANM+Current Operation**
- Both current plant and ANM in Operation
- ANM production increasing

**Current Plant Closure**
- Aim: End 2017
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

Key Challenges Addressed
- Regulatory approval
- Emissions management
- Resource management

ANM Transition
- Team engagement and resource planning
Capacity Increase Status

12 plate irradiations in OPAL

Transport of irradiated targets to building 54

ARPANSA approval 12 plate processing in building 54

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

Q1: 1120, Q2: 1120, Q3: 1900, Q4: 2100, Q1 2017: 2100, Q2 2017: 3000, Q3 2017: 3500
ANM
ANSTO Nuclear Medicine

Construction Update
<table>
<thead>
<tr>
<th>Key Achievements</th>
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<tbody>
<tr>
<td>Dissolution and Hydrogen cells delivered</td>
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<td>Carbon columns, gas capture, liquid waste tanks installed</td>
<td>✔</td>
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<tr>
<td>Concrete hot cells poured and fit out commenced</td>
<td>✔</td>
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<tr>
<td>Manipulators, padiracs and hot cell windows on site</td>
<td>✔</td>
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<tr>
<td>Preparation laboratories and QC labs built</td>
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<tr>
<td><strong>Concrete</strong></td>
<td><strong>Steel Reinforcement</strong></td>
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<tr>
<td>5,489 m³</td>
<td>858 tonnes</td>
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Proximity to Opal
Overview of building
Overview of building
North East Façade
Side View to Service Bay
External View with Stack
Front of hot cells
Front of hot cells
Rear of hot cells
Rear of hot cells
Rear of hot cells
Rear of hot cells (elevated view)
IAEA Director General, Mr Amano inspects progress on ANM
Thank you