

ANM

ANSTO Nuclear Medicine

Reliable & Timely Mo-99 Supply Globally

**Mo-99 Topical Meeting
Montreal, September 2017
Jayne Senior**

Agenda

1. ANM Project Background

2. ANM Design & Capacity

3. ANM Construction & Commissioning Status

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ANSTO Nuclear Medicine

ANM Project Background

A photograph of the Australian Parliament House in Canberra at night. The building is illuminated with warm yellow lights, and the Australian flag flies from a tall pole in the center. The sky is a deep blue with some clouds. The building's architecture is modern, with a central section featuring a series of columns and a large, curved roofline. The foreground shows a dark, reflective surface, possibly a pool or a wet plaza, which mirrors the building and the sky.

Federal Government and ANSTO joint initiative to design,
build and operate to international best standards,
a facility to manufacture Mo-99 to meet local and global
demand for use in diagnostic imaging

ANSTO Nuclear Medicine



Australian Government

Ansto



ANM

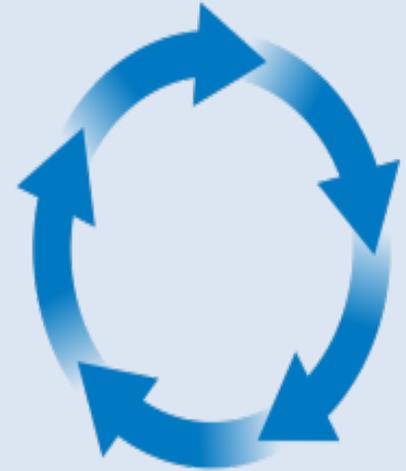
Operated as a
subsidiary of
ANSTO

Mo-99

One product-
Mo-99



Scalable domestic
and worldwide
supply



Full lifecycle
consideration

ANSTO Nuclear Medicine Project

TWO PARTS

Mo-99 Facility

ANM



Synroc Waste Plant

SyMo





OPAL

Mo-99 Plant
"ANM"

Synroc Waste Plant
"SyMo"

Lucas Heights
Location

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ANM Design & Capacity

ANSTO Nuclear Medicine Project

TWO PARTS

Mo-99 Plant

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3,500 6 day Ci per week

LEU fuel & LEU targets

Base Digestion process

Proven, reliable technology

Low emissions (Xe-133)

Integrated preparation and testing labs

Synroc Waste Plant

SyMo

Hot Isostatic Press technology

320 cans produced per year

Integrated with Mo-99 facility

Treats Intermediate Level Liquid Waste

Waste volume reduction by 90%

Immobilised waste form

Integrated Mo-99 Production Cycle

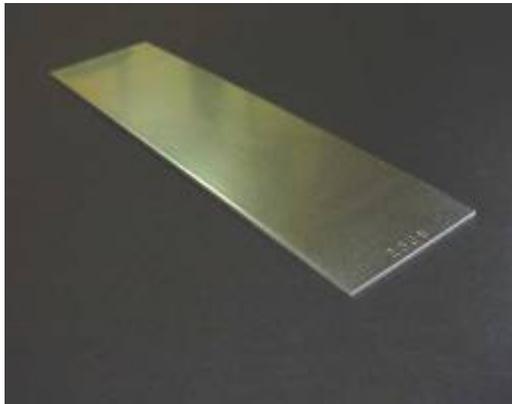
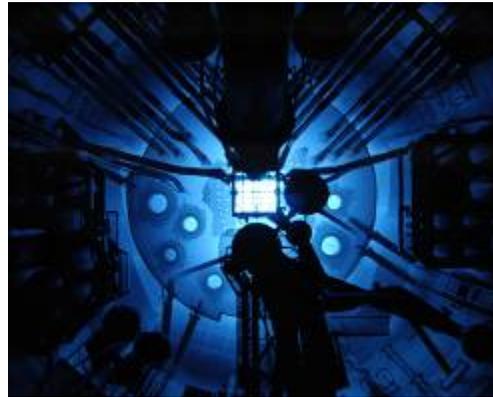
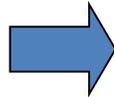


Plate Target



OPAL Irradiation

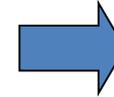
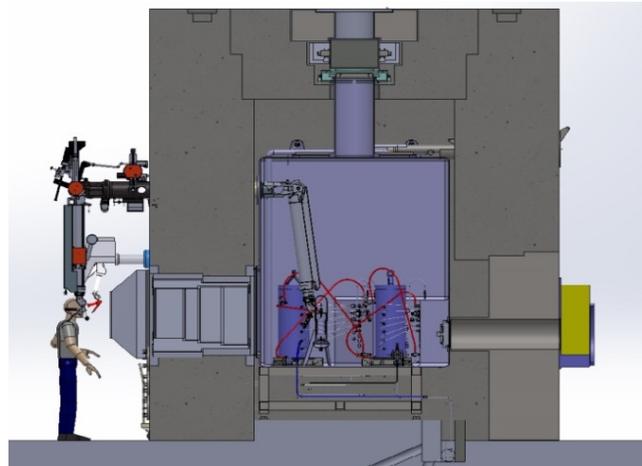
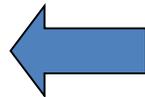


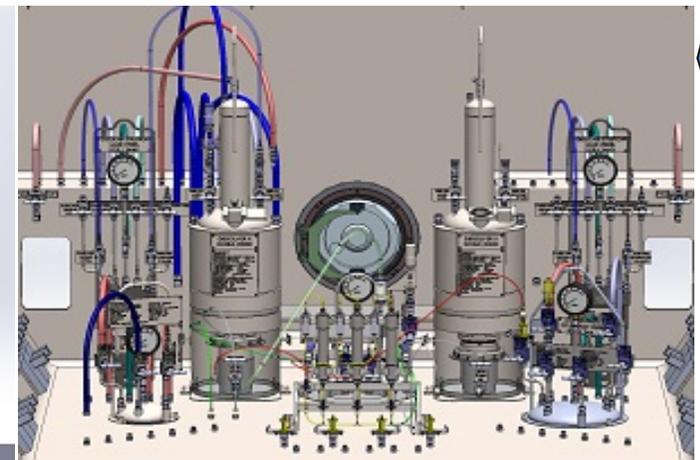
Plate Transport



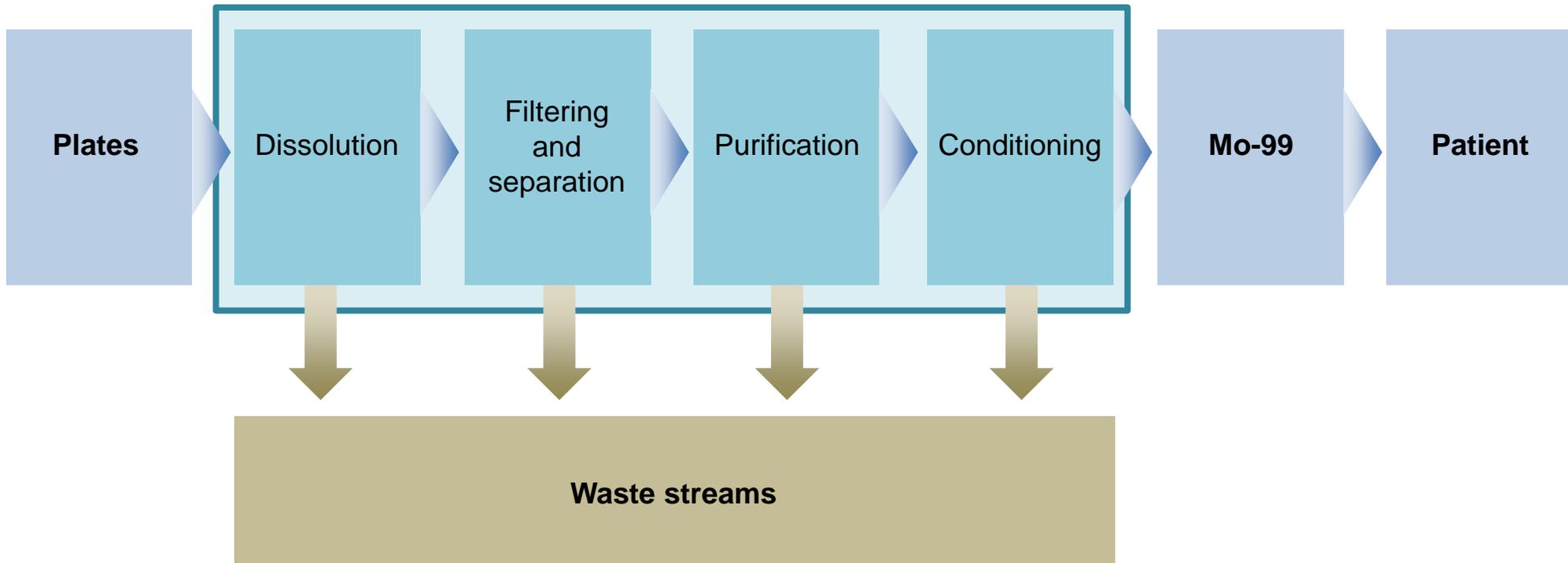
Generator Production



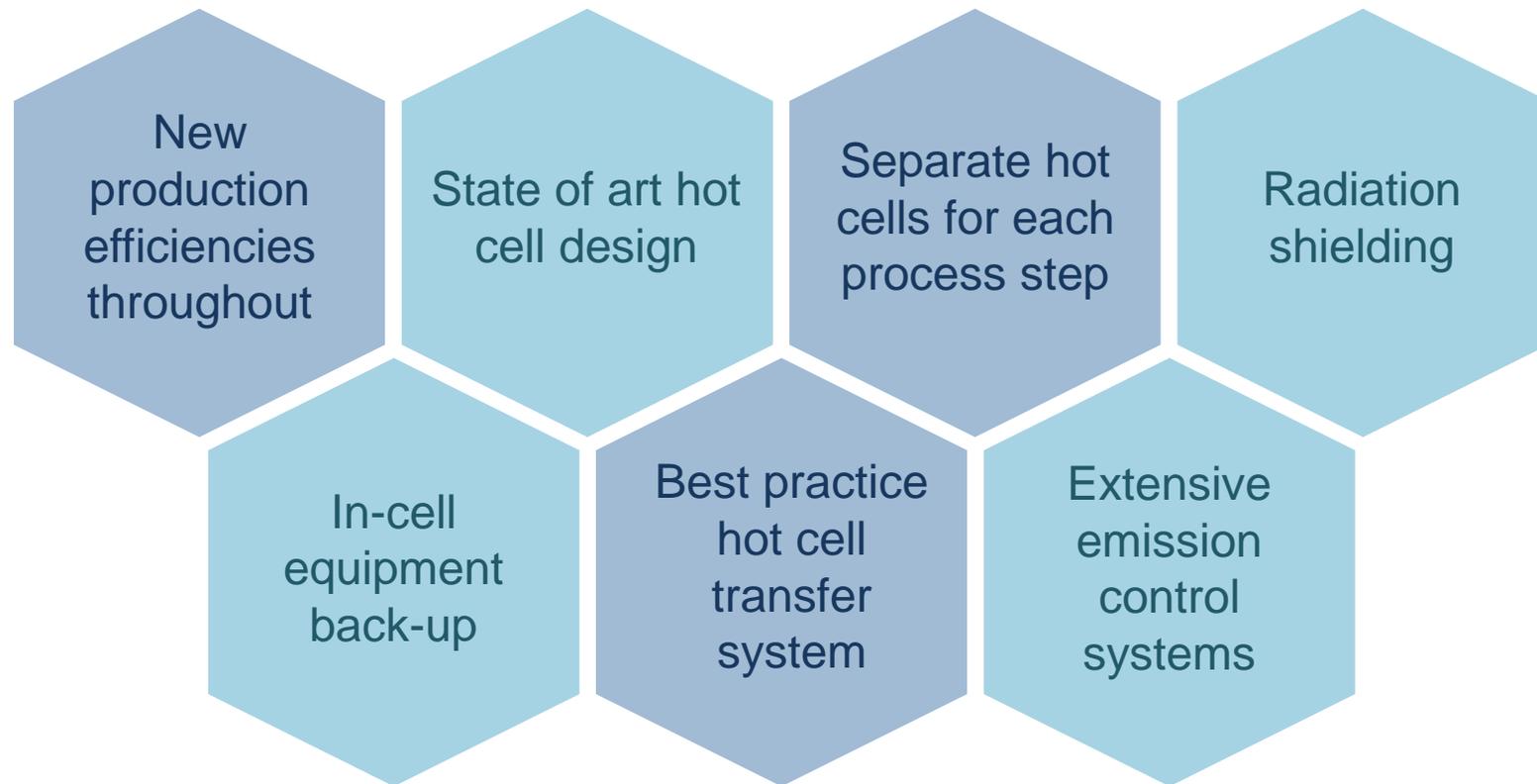
Chemical Separation ANM



ANM Mo-99 production process

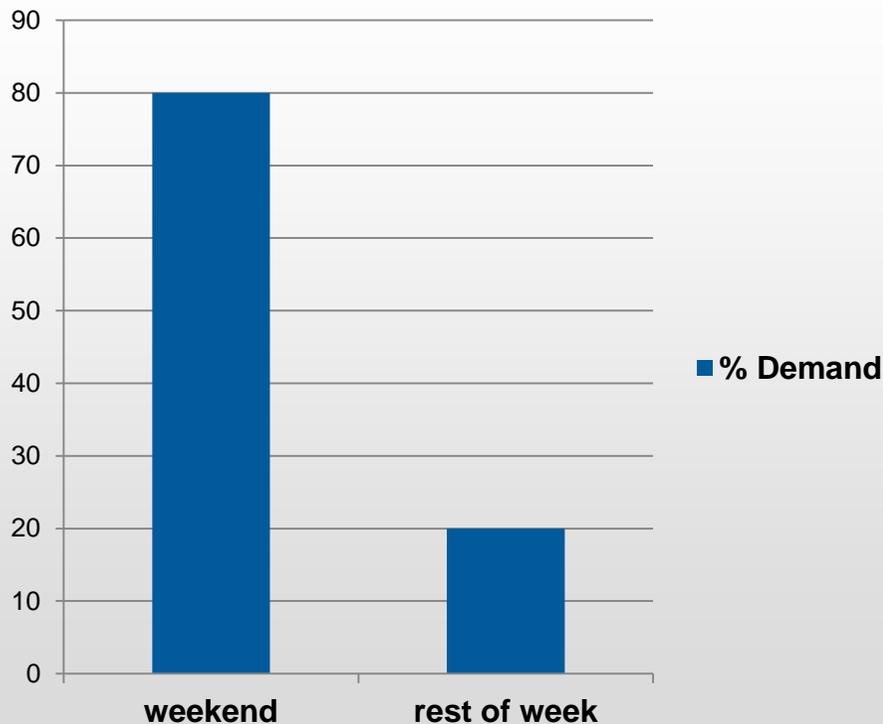


World best safety features

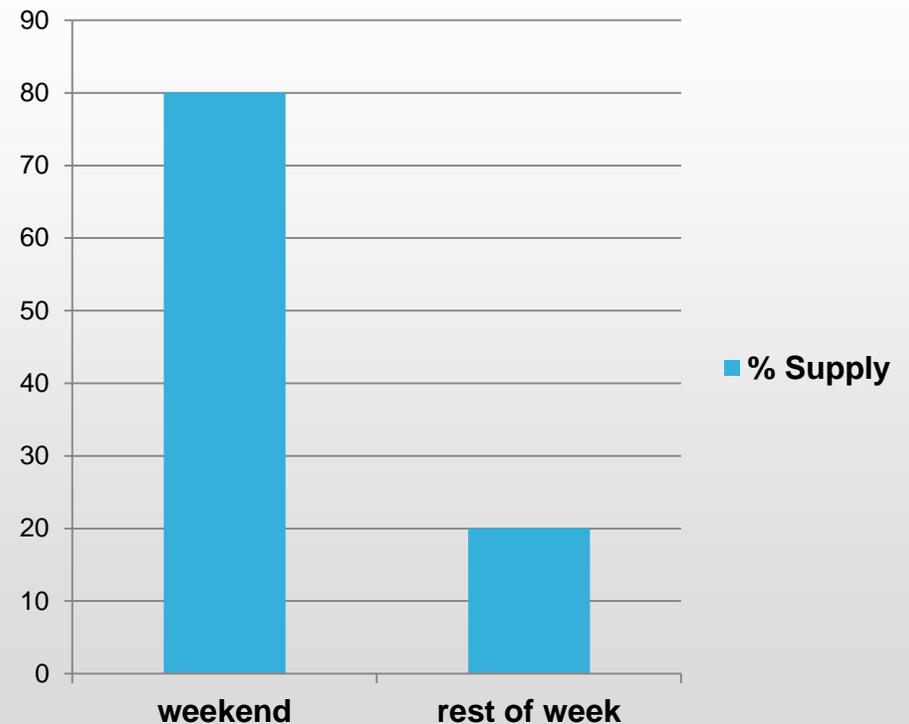


ANM – Capacity and Flexibility

World Demand Profile
9000 6-Day Ci

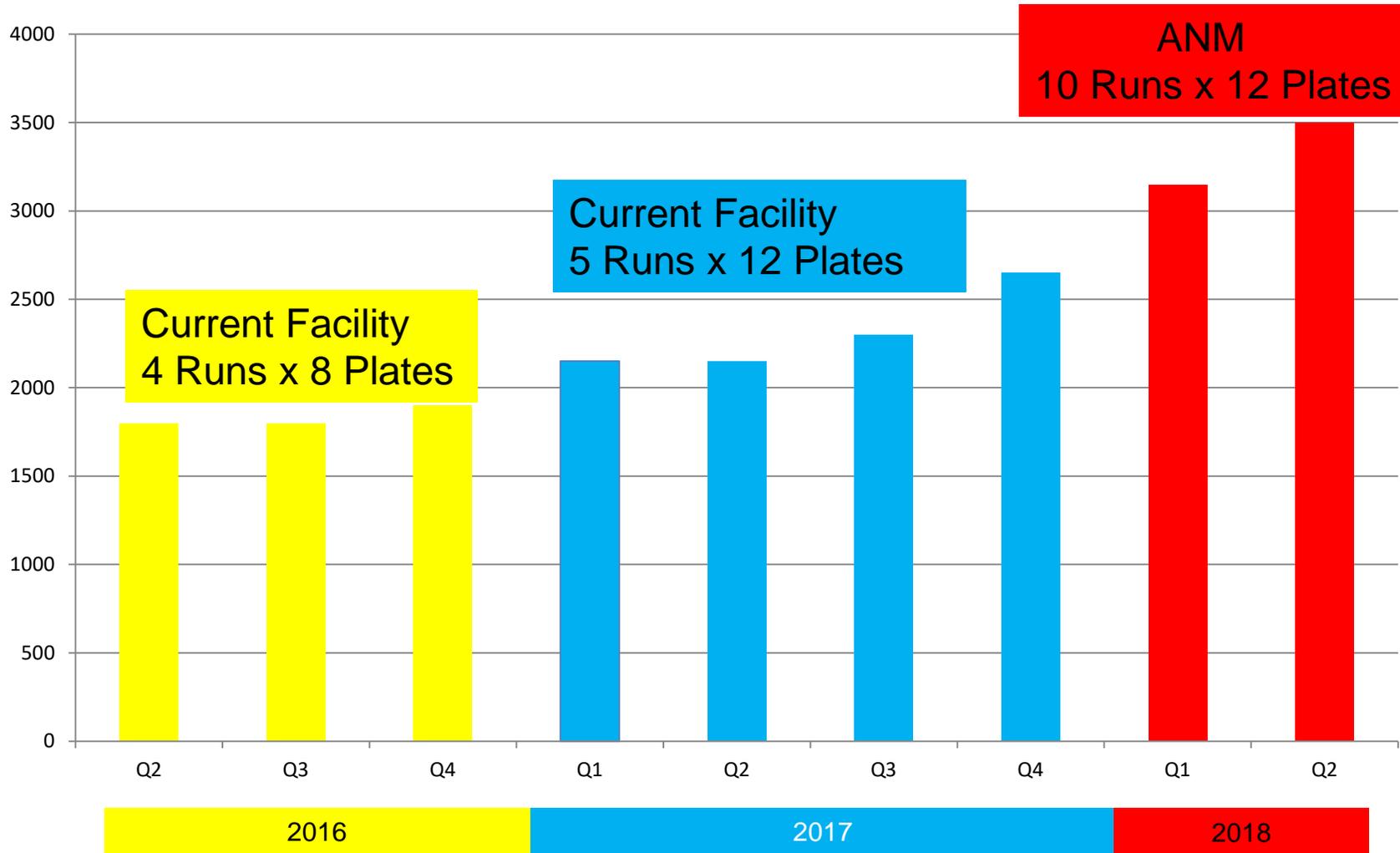


ANM Supply Profile
3500 6-Day Ci



Capacity Increase Timing

Projection of 6-Day Ci Production/Week



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Construction & Commissioning Status

Before



After.....



Front Entrance



Ramp to Front Entrance



Side Access



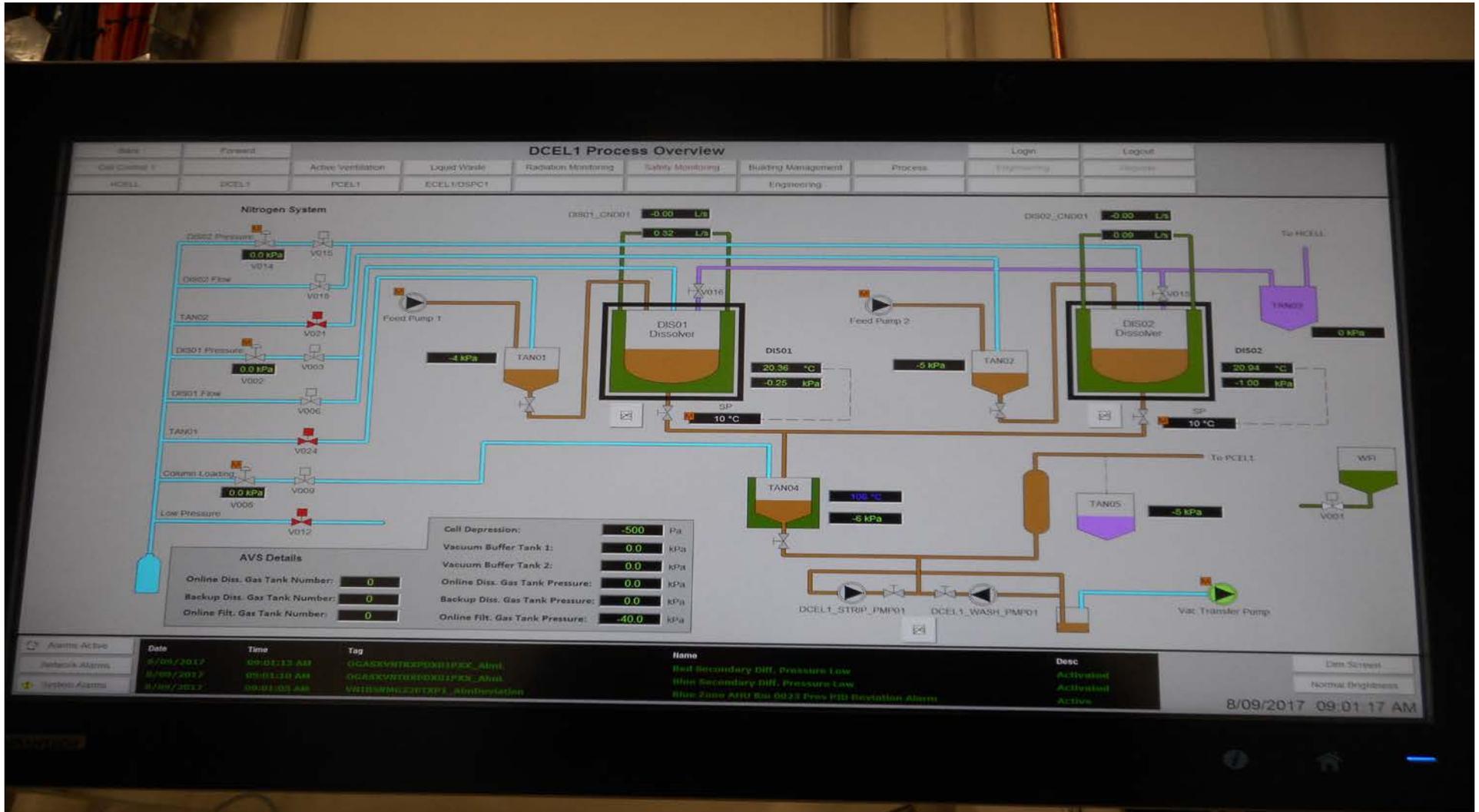
Production Cell Face



Hydrogen Cell face



Dissolution Cell Control Panel



Waste Handling Cells



Rear of Hot Cells



Rear of Hot Cells



Basement Gas Tanks



Basement Iodine Filters



Plant Room



QC Intermediate Sample Test Lab



QC Intermediate Sample Test Lab



Process Preparation Room



Mo-99 Facility Milestones

Operation licence

submission to ARPANSA



APRIL
2017

Public consultation



JUNE
2017

Construction complete



JULY
2017

Commissioning underway

COMMISSIONING

November
2017

Active commissioning and operation

ACTIVE
COMMISSIONING

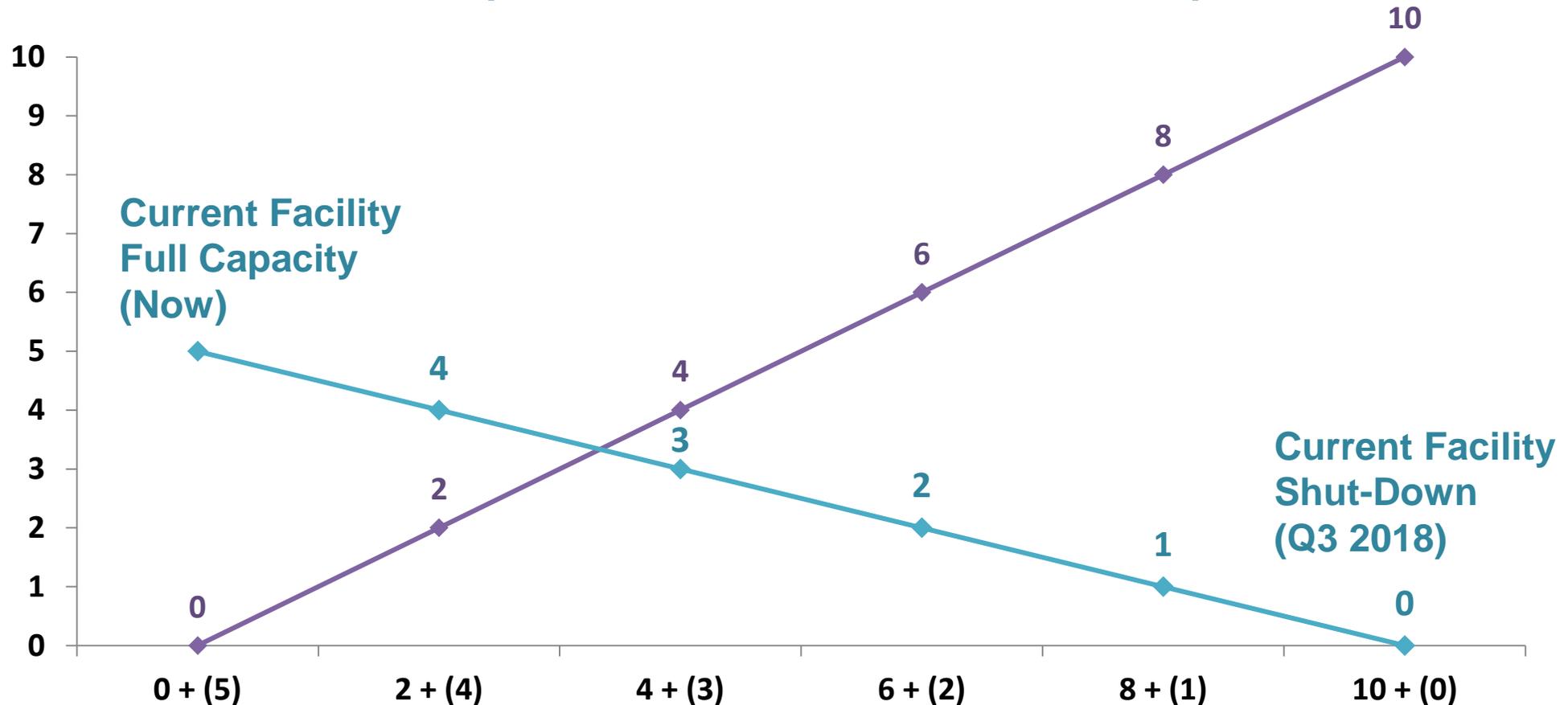
Subject to
ARPANSA
licence

ANM Commissioning Milestones

Design Qualification (DQ)	Instrumentation Qualification (IQ)	Operational Qualification (OQ)	TGA / ARPANSA Licences	Product Qualification (PQ)	Product Validation
Complete	Facility Services Complete In Cell Process Equipment Commenced	Facility Services Complete In Cell Process Equipment Finish 26 October	Audits End October/ Early November	Low & High Activity Runs Finish 18 November	Supply Customer Validation Samples Start 20 November

Current Operations and ANM Transition

Planned Scale up of ANM + Reduction in Current Operations



Number of runs per week in ANM + (Number of runs per week in B54)

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