



**Magnox South**

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Berkeley ILW Project**

# Berkeley ILW – “mission statement”

- To retrieve and package all ILW at Berkeley
- All waste packages to be stored on site until the RWMD Repository is available
- All Wet ILW to be retrieved by 4/9/2014
- All Solid ILW to be retrieved by 31/3/2016
- ILW is currently stored in:
  - Active Waste Vaults
  - Chute Silo
  - Caesium Removal Plant
  - Shielded Area
- Current Baseline ILW Management approach is AWVR (cement encapsulation in 3m<sup>3</sup> boxes)
- This project is seeking to prove the viability of ministores for Berkeley



# Project Status Overview

- Programme level business case developed
- The NDA has supported a 2 year deferral for Berkeley to develop Ministores. With NII for assessment.
- A Concept Design has been developed for the Ministore approach at Berkeley site
- The project has been sanctioned to continue into detail design
- The technical specifications for the have been produced for the early works

# Work Areas for Next 2 Years

- Early Retrievals
- R1 - Chute Silo
  - Design, Build, Operate
- R2 - Vault 2 FED
  - Design only for Retrieval of all waste from all Vaults
  - Design, Build, Operate for Retrieval, Processing & Packaging of all loose FED from Vault 2
- R11 - Solid ILW Conditioning
  - Design, Build, Operate of the Solid ILW Conditioning Equipment

# Early Retrievals

- Graphite samples removed from Vaults 1 and 2 (June)
- MOSAIK cylindrical ministore received on site (July)
- Safety case prepared for initial retrievals (Sept)
- Mock up and trails (Now)
- Retrieval of Vault 2 waste and temporary storage in MOSAIK ministore (before March 2011)

# Determining Best Option for Berkeley ILW

- Company strategy optioneering
- Site Strategy Optioneering
  - Workshop completed June 2010
  - Thank you for SSG involvement
  - Report delayed, due October/November
  - Concluded Ministores more favourable than encapsulation
- Next step waste stream specific BPEO

# Waste Stream Assessment

- Covers all ILW Waste Streams on Site
- Addresses those needed to be treated prior to Care and Maintenance
- Considers a wide range of options
- 4 stage process
  - Initial screening (groups and options)
  - Coarse screening (reasoned argument)
  - Detailed screening (MADA)
  - Determination of BPEO for each waste stream or group

# Stakeholder Engagement

- Site strategy workshop (June 2010)
- Briefing of SSG on process (today)
- Industry expertise utilised for options and practicability
- Regulator involvement (NII and EA)
- SSG advice and comment needed (January 2010)
- Share BPEO decision(s) with SSG (March 2011)



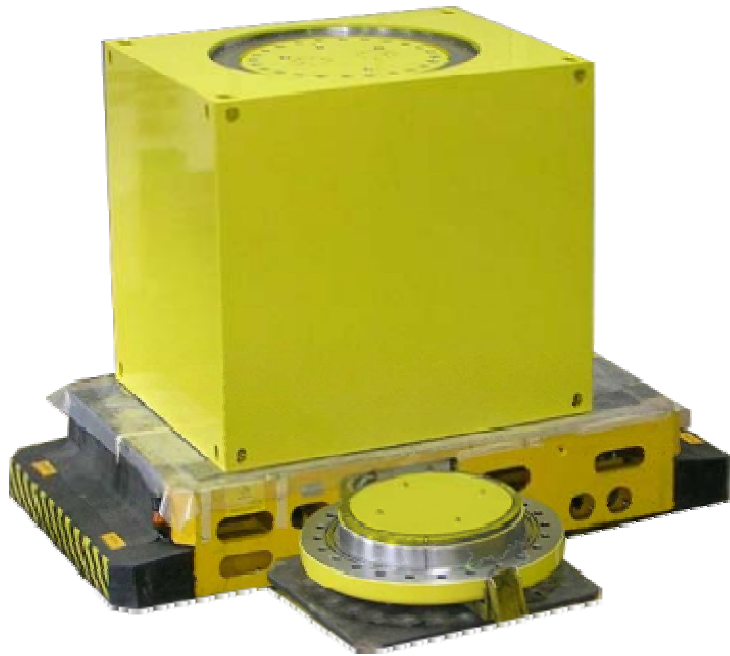
# Questions



# MiniStore Concept

- ILW is retrieved, processed and packaged into a self shielding DCIC
- There are two types of DCIC – Cuboidal (for most waste streams) & Cylindrical (to which extra shielding can be inserted for high activity items)
- Waste is transferred across site within the DCIC to a conditioning facility
- Waste is conditioned (dried) to a state where it will remain in a stable condition for long term storage within the DCIC
- The conditioned DCICs are transported across site to the ILW Weather Protection store
- The DCICs remain in the Weather Protection store on site until a Geological Disposal Facility is available.

# Ductile Cast Iron Containers – DCIC or MiniStore

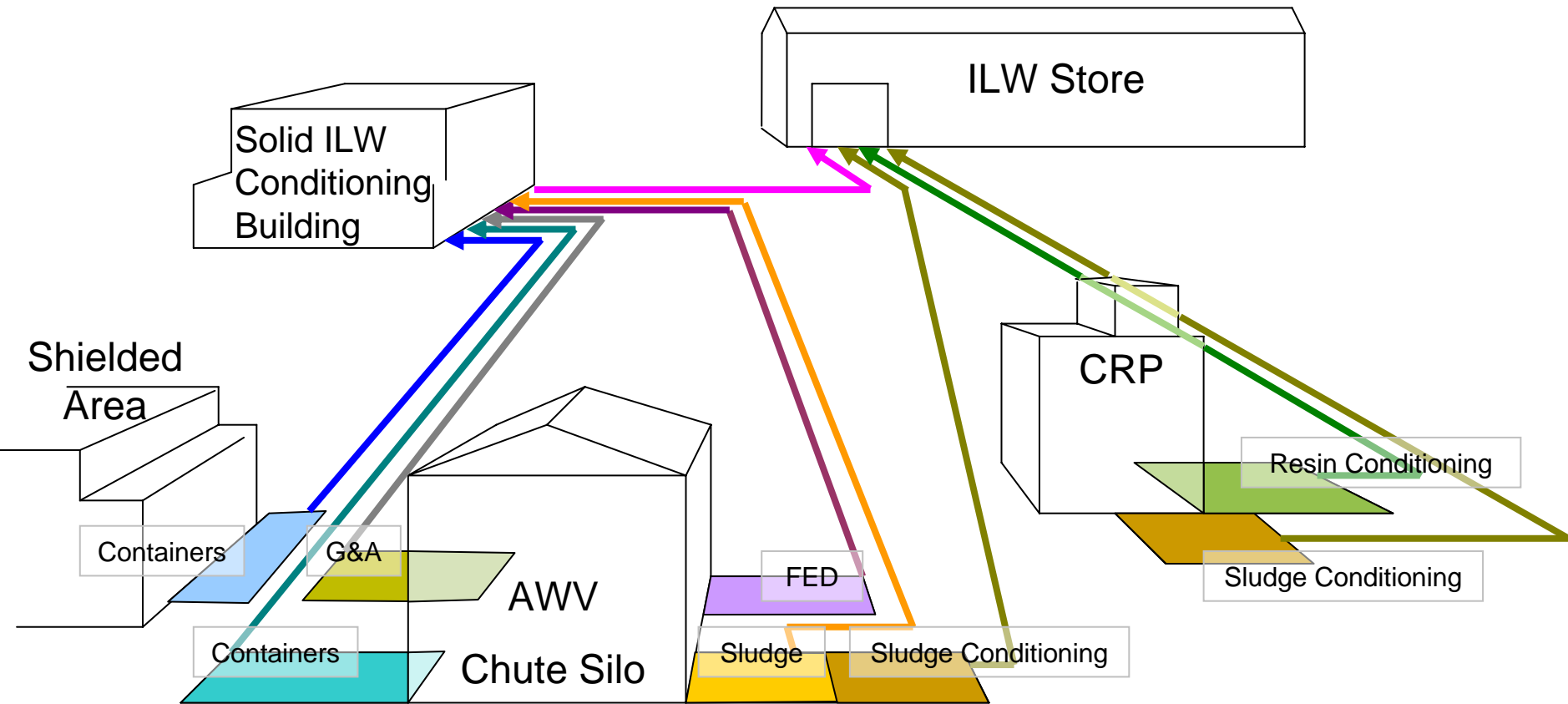


Cuboidal – used for all but the high activity items including Wet and Solid waste



Cylindrical – used for high activity Items as extra lead shielding can be inserted

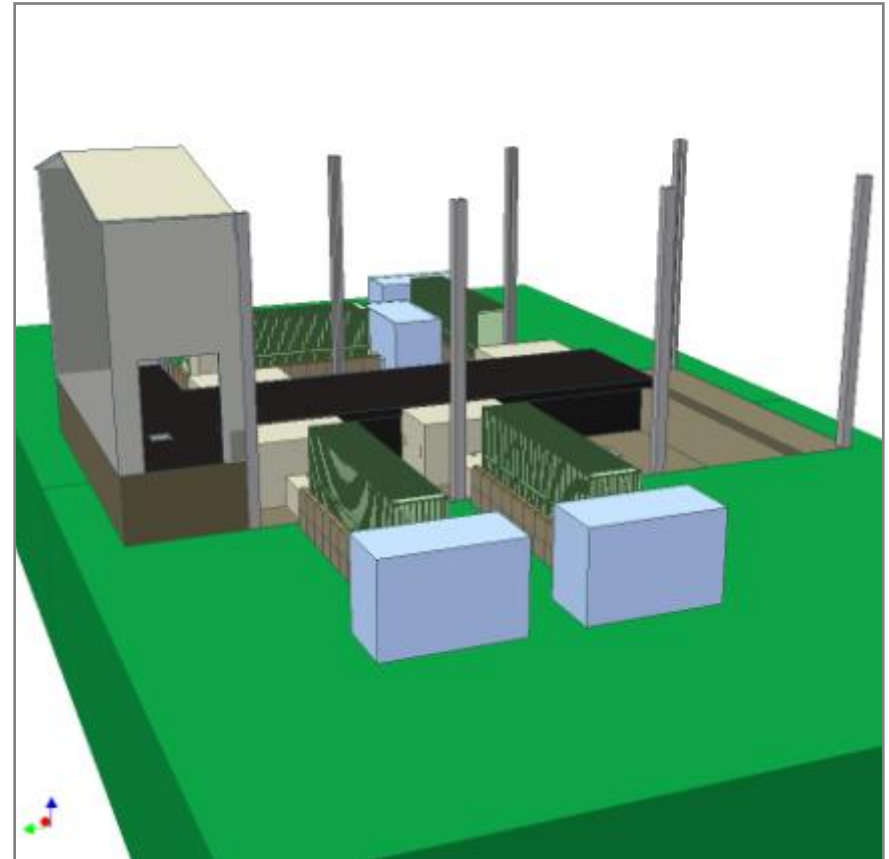
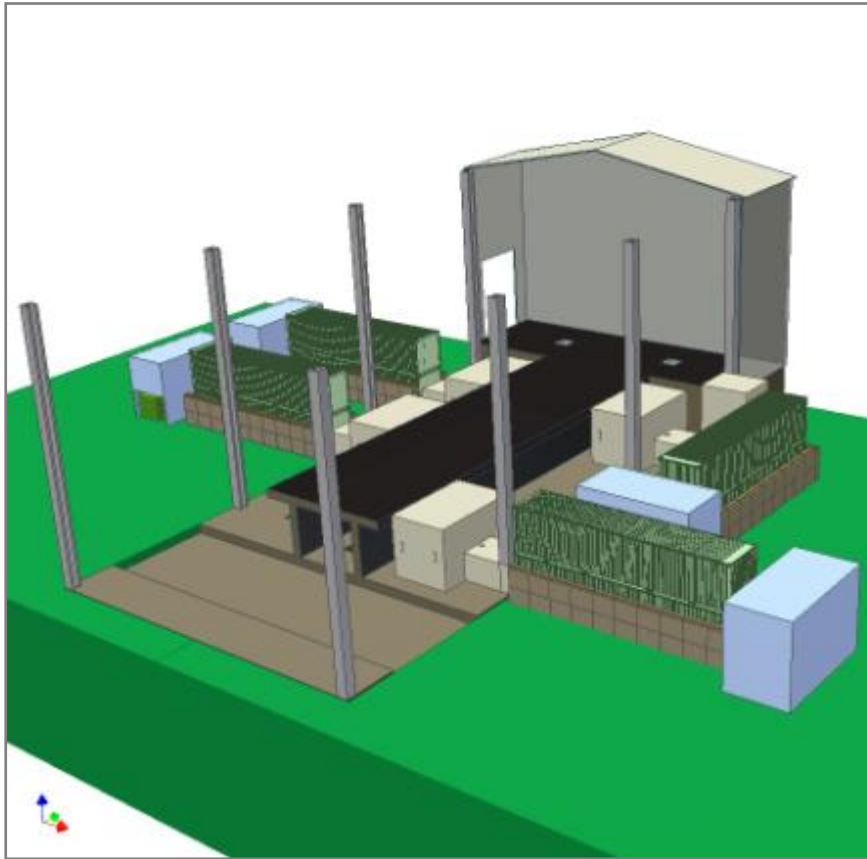
# MiniStore Concept – Process Overview



# The Modular Design Philosophy

- In reality Waste Streams do not exist in easy to separate, discrete packages
- The modular design philosophy is to design a retrieval, processing and packing system to deal with a single waste stream at a time.
- Benefits are
  - Early waste retrieval of 'easy' to handle waste streams
  - Retrieval can commence with lower initial capital outlay required
  - Focusing on early retrievals enables plant to be further simplified as there is opportunity to resolve unknowns during retrieval
  - Plant can be re-used or moved to different locations to deal with similar waste streams once retrieval from one location is complete

# MiniStore Concept – AWW Modules



# MiniStore Concept – FED Module

