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ABB CONSULTING

# Taking onshore learning offshore

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# What is decommissioning

Myths and legends

**Different things to different people depending on industry**



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# Demolition technical advances

## Explosives



## High Reach

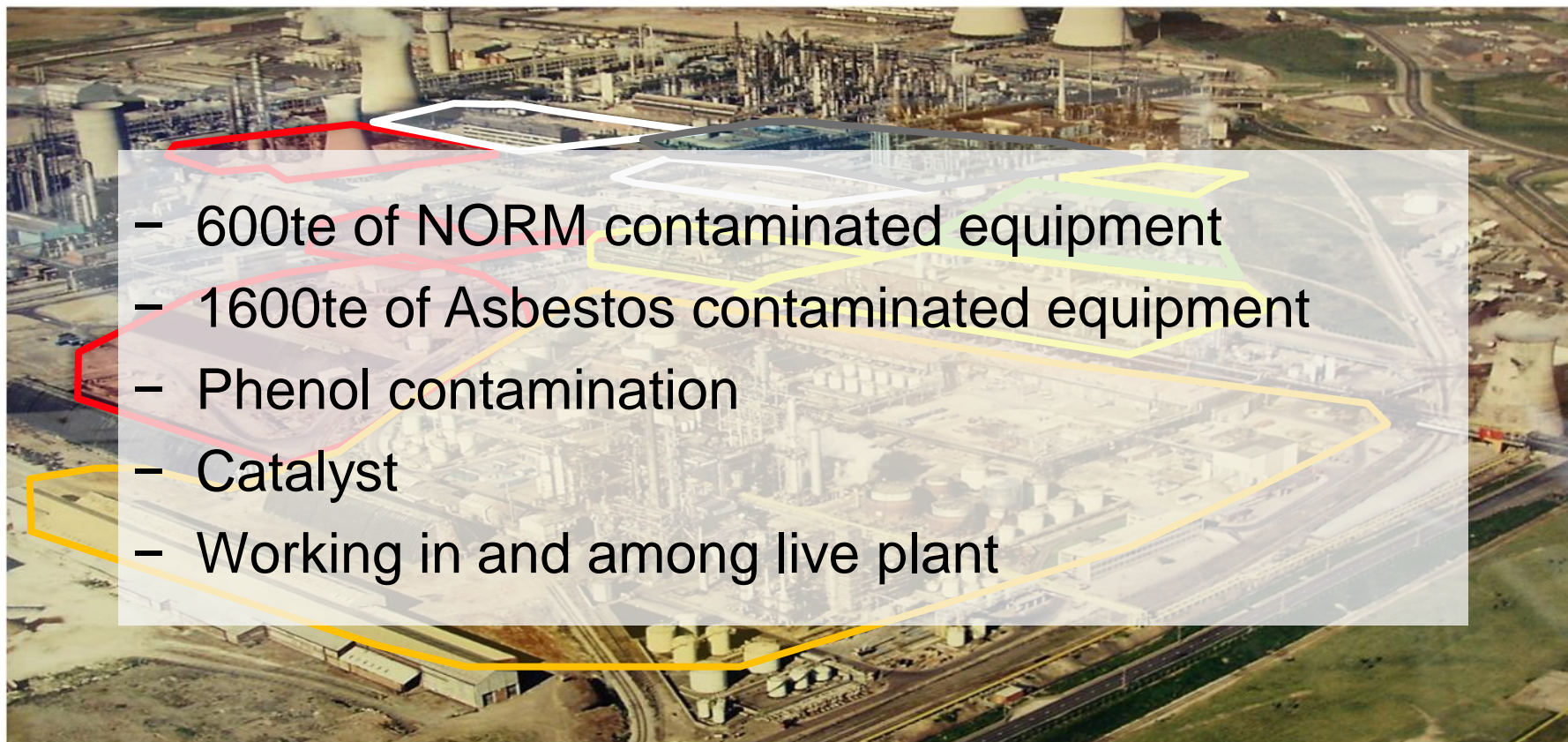


## Future



# Managing the issues

Typical onshore project



- 600te of NORM contaminated equipment
- 1600te of Asbestos contaminated equipment
- Phenol contamination
- Catalyst
- Working in and among live plant

**1,2,3 Ammonia**

**Octal Phenol**  
Live plant  
Asbestos / radio-active catalyst

**Oil and Gas Plants**  
Asbestos removal / catalyst  
recovery

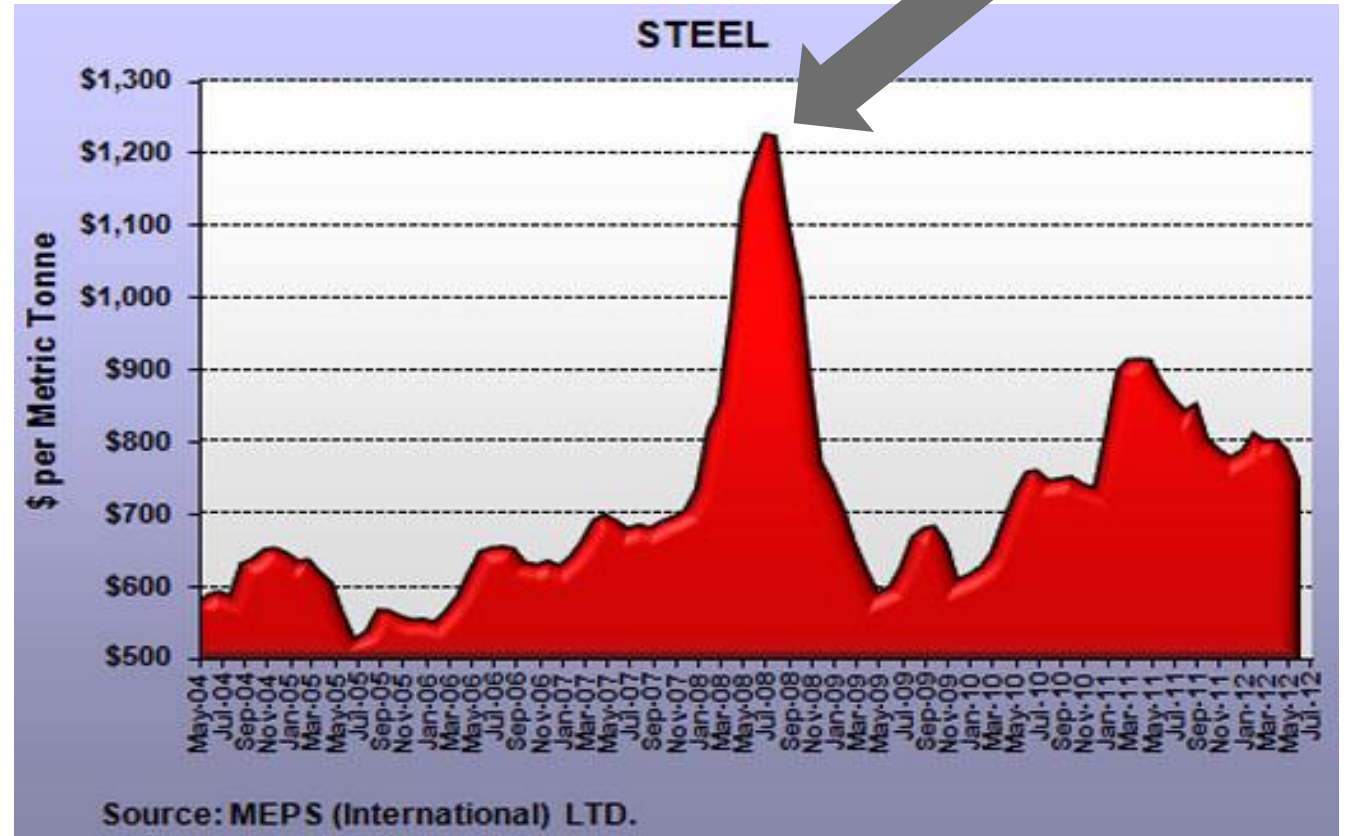
**Phenol Plant Demolition**  
Major asbestos removal /  
contamination

**Urea 5**  
Lift and shift

**Storage**

# Contracting model

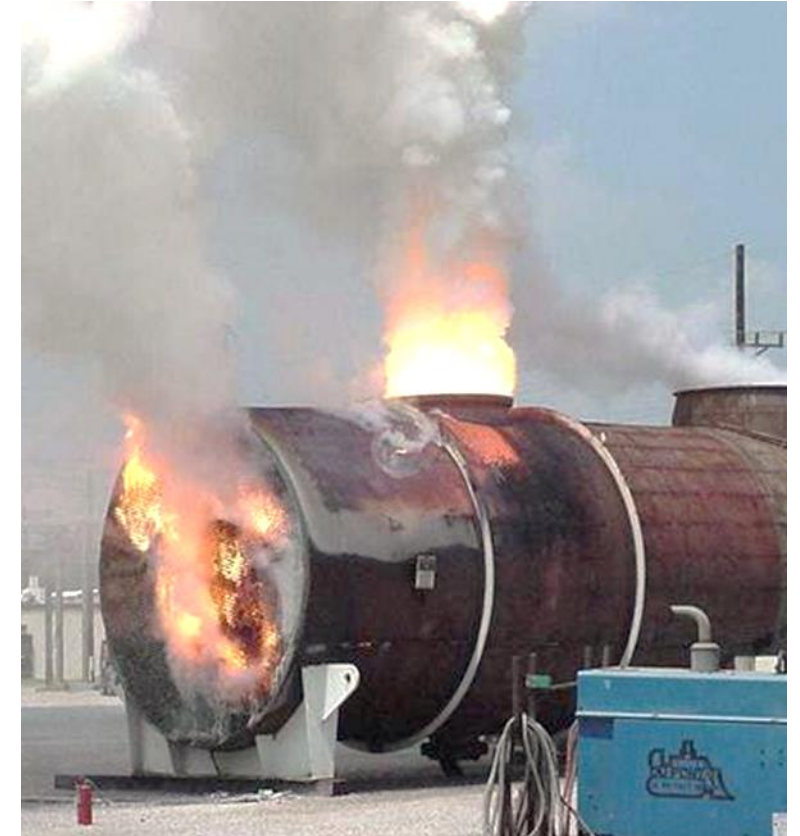
- The price can go down as well as up
- Gain share v fixed price
- When was the Chinese Olympics
- Programme of works
- Up to 35% savings on one project through clustering
- De-risking



# Decontamination

How clean is clean

- Different mind set
- Most cases not trying to maintain asset value
- Different methodology
- What is “clean”?
- Asbestos/NORM etc.
- Record keeping
- Capture knowledge of key people before you lose them
- Unknown plant status to known status



## Reuse of plant and equipment

LNG plant:

- >10,000m<sup>3</sup> Perlite
- Normally sent to landfill
- Re-used as aggregate in the manufacturing of construction building blocks
- Plan 3 – 5 years before closure



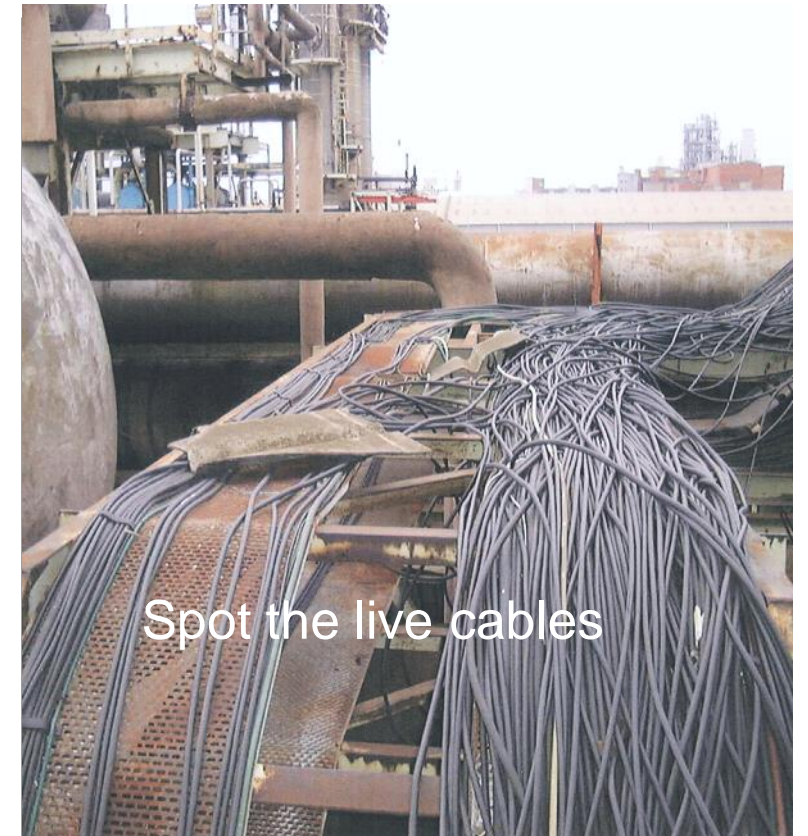
# Isolations

## On site

- Location, standard, dead legs
- Identification
- “Tartan” equipment

## Site boundary

- Timescales / complexity of the process
- Gas isolations



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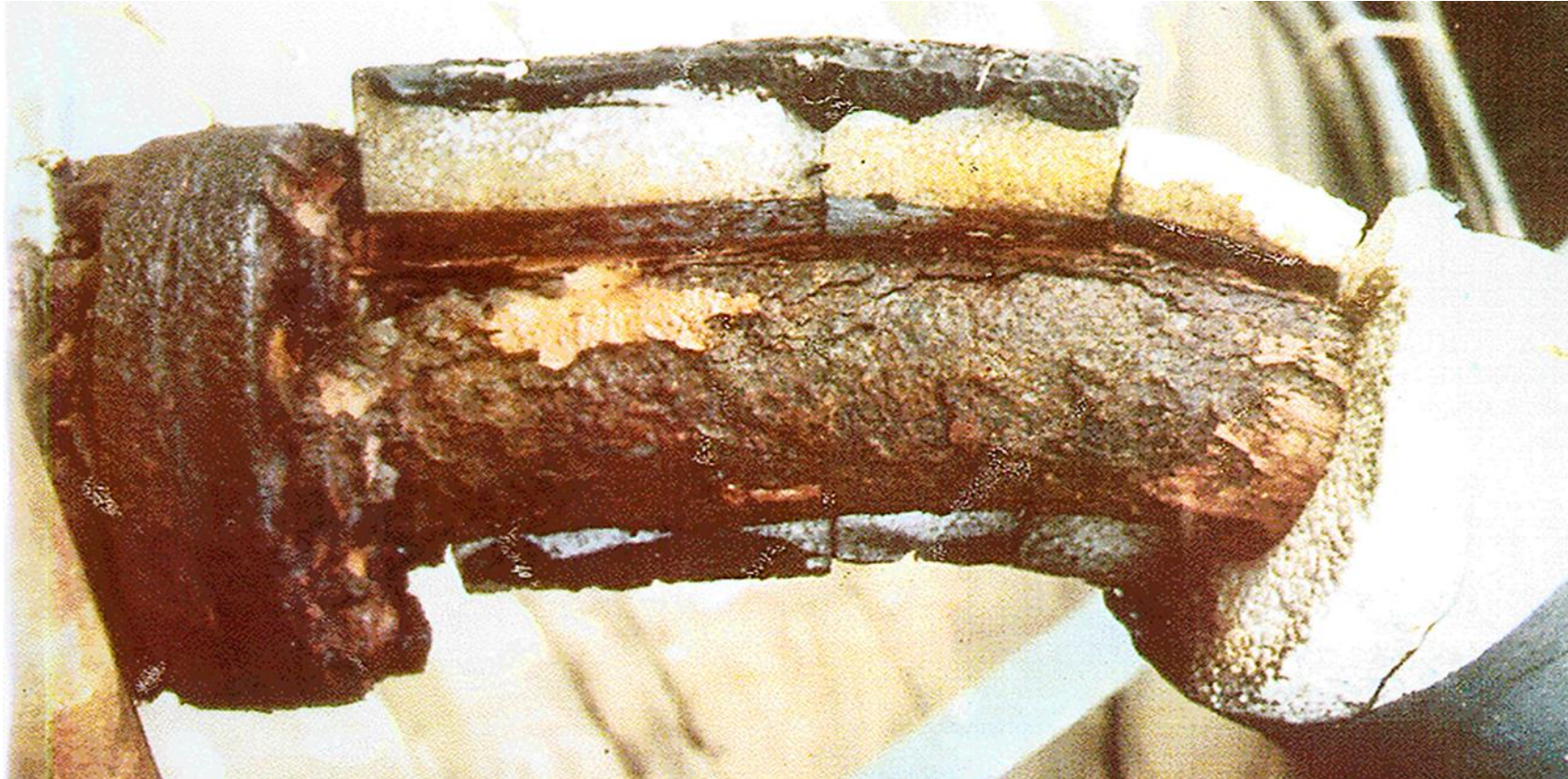
## Other issues

- Identify potential risks and hazards
- People change and leave
- Keep all information:
  - As built
  - Inspection records
  - P&IDs etc.
  - Traceability
  - “We believe everything you tell us, yet we believe absolutely nothing”

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## When times are tough

Demolition goes on hold and this is what happens!



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# Nuclear

The journey – when does decommissioning start?

- From operation to a decommissioning mind set
  - Same journey from design to construction to operation to decommissioning

“You will knock a nail into wood with a hammer but you probably would not use the same hammer to take it out again” source unknown

# Onshore – V- Offshore

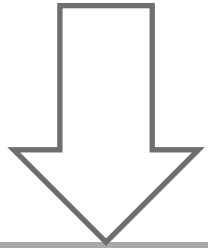
What's the difference?

Hazards	Onshore?	Offshore?
Flammable Atmospheres	✓	✓
Chemical Residues	✓	✓
Asbestos	✓	✓
NORM	✓	✓
Large Scale Steel Structures	✓	✓
Strict Regulatory Regime	✓	✓
Environmental Hazards	✓	✓
Deep Water	✗	✓
Difficult Access	✓	✓

# Summary

Transferable skills

Reverse engineering  
decommissioning



Onshore expertise

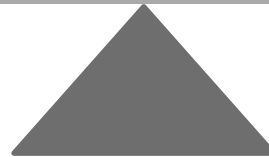
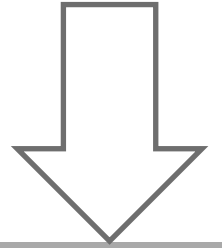
Embedding learning  
from other sectors

Technology challenge

- Modularisation
- Standardisation

Collaboration

Demolition  
contractor



Increased cost



Perceived increased risk

**ABB**