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# DISPOSAL OF SPENT FUEL FROM GERMAN NUCLEAR POWER PLANTS

- PAPER WORK OR TECHNOLOGY? -

R. Graf

GNS mbH, Hollestr. 7A, 45127 ESSEN - GERMANY

W. Filbert

DBE TECHNOLOGY GmbH, Eschenstr. 55, 31224 PEINE - GERMANY



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- Introduction
- Disposal scheme for high-active and/or heat-generating waste
- Reference concept POLLUX
- BSK 3-concept
- DIREGT-concept
- Summary and conclusion



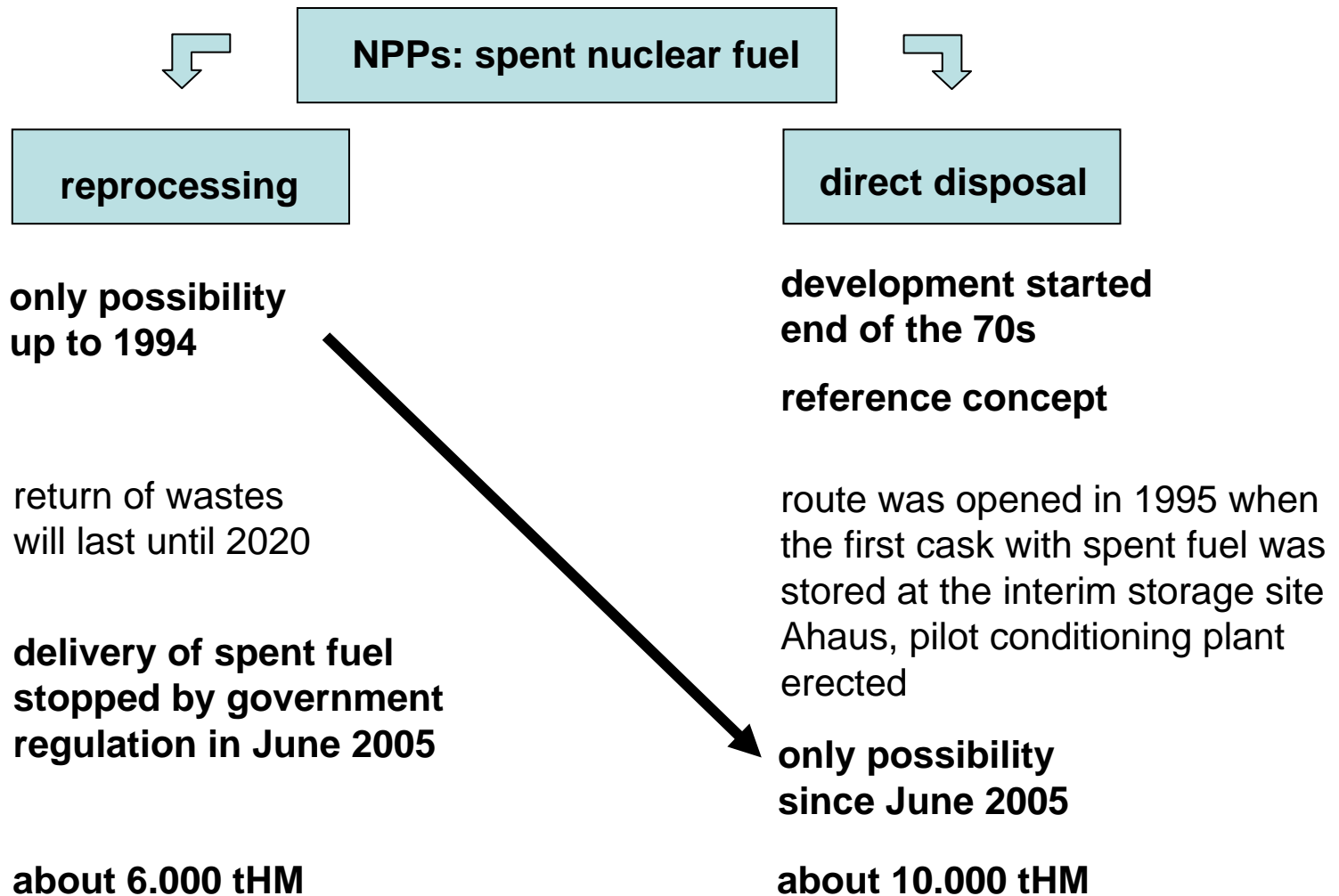
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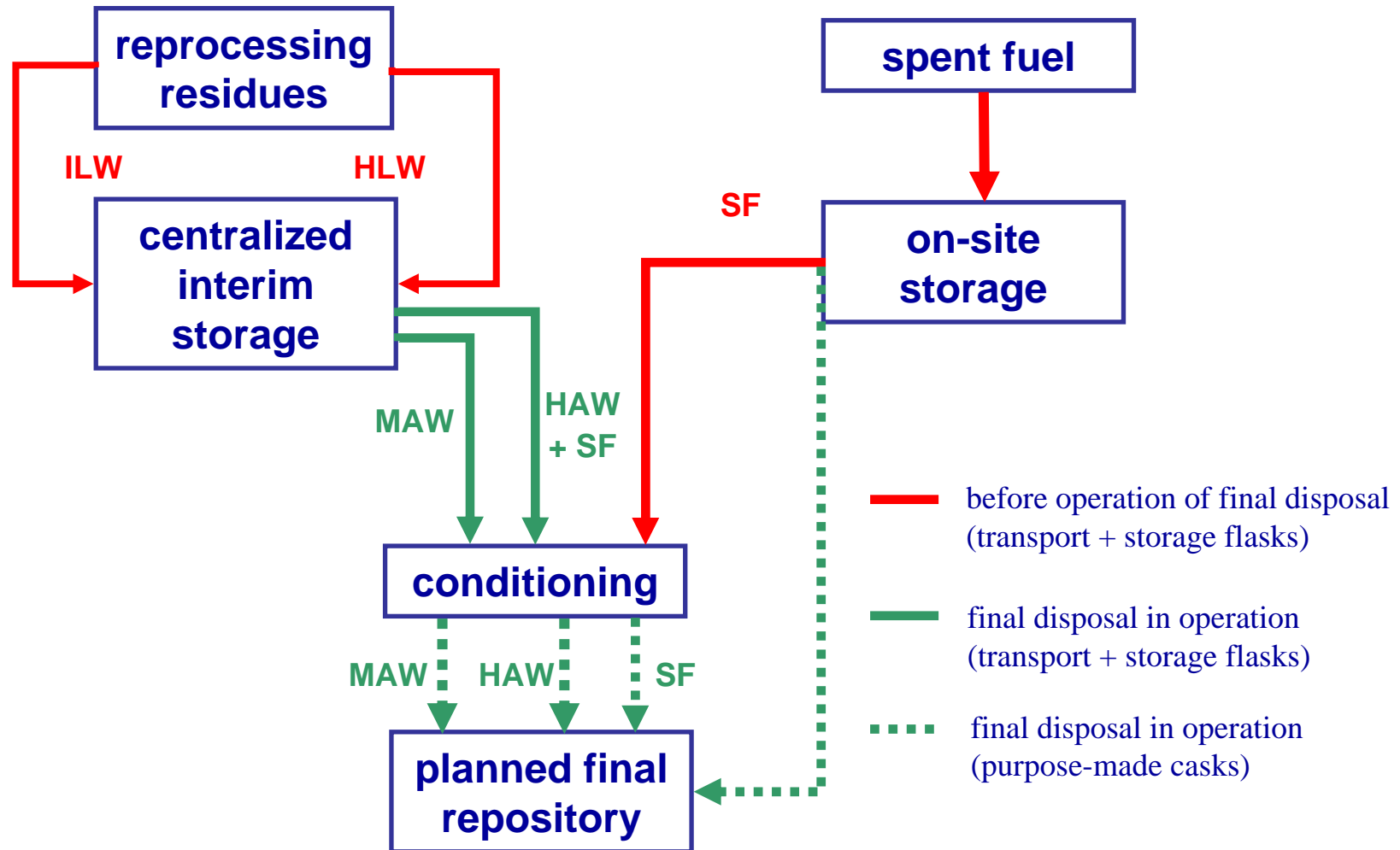


# Spent fuel from NPPs: Reprocessing and Direct Disposal

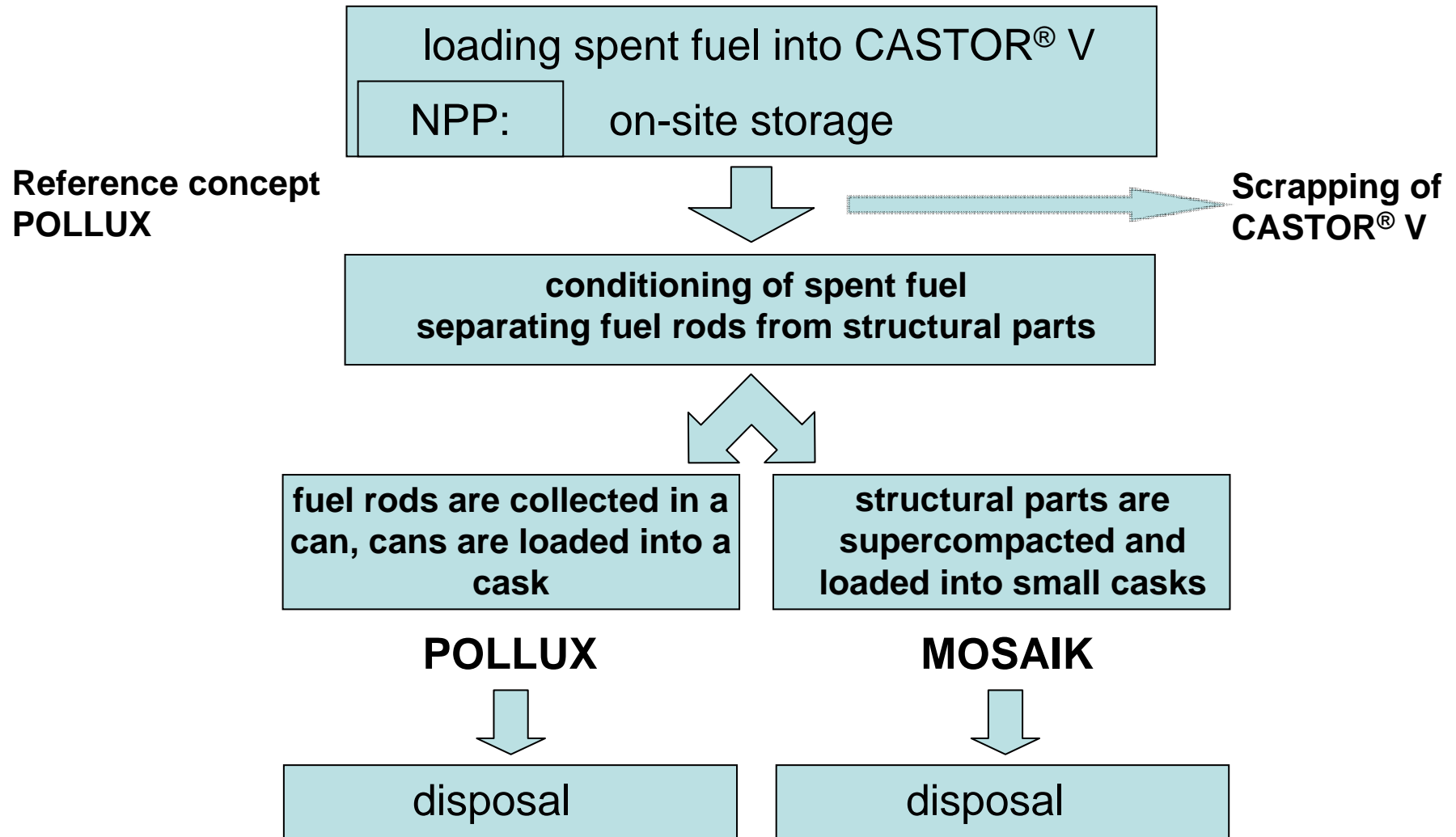
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# Reprocessing Residues and Spent Fuel Disposal Routes



# Spent Fuel Disposal: Disposal Casks in Drifts of the Repository



# Pilot Conditioning Plant Gorleben

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# Pilot Conditioning Plant Gorleben

TSC-casks

TSC-cask  
without  
secondary lid

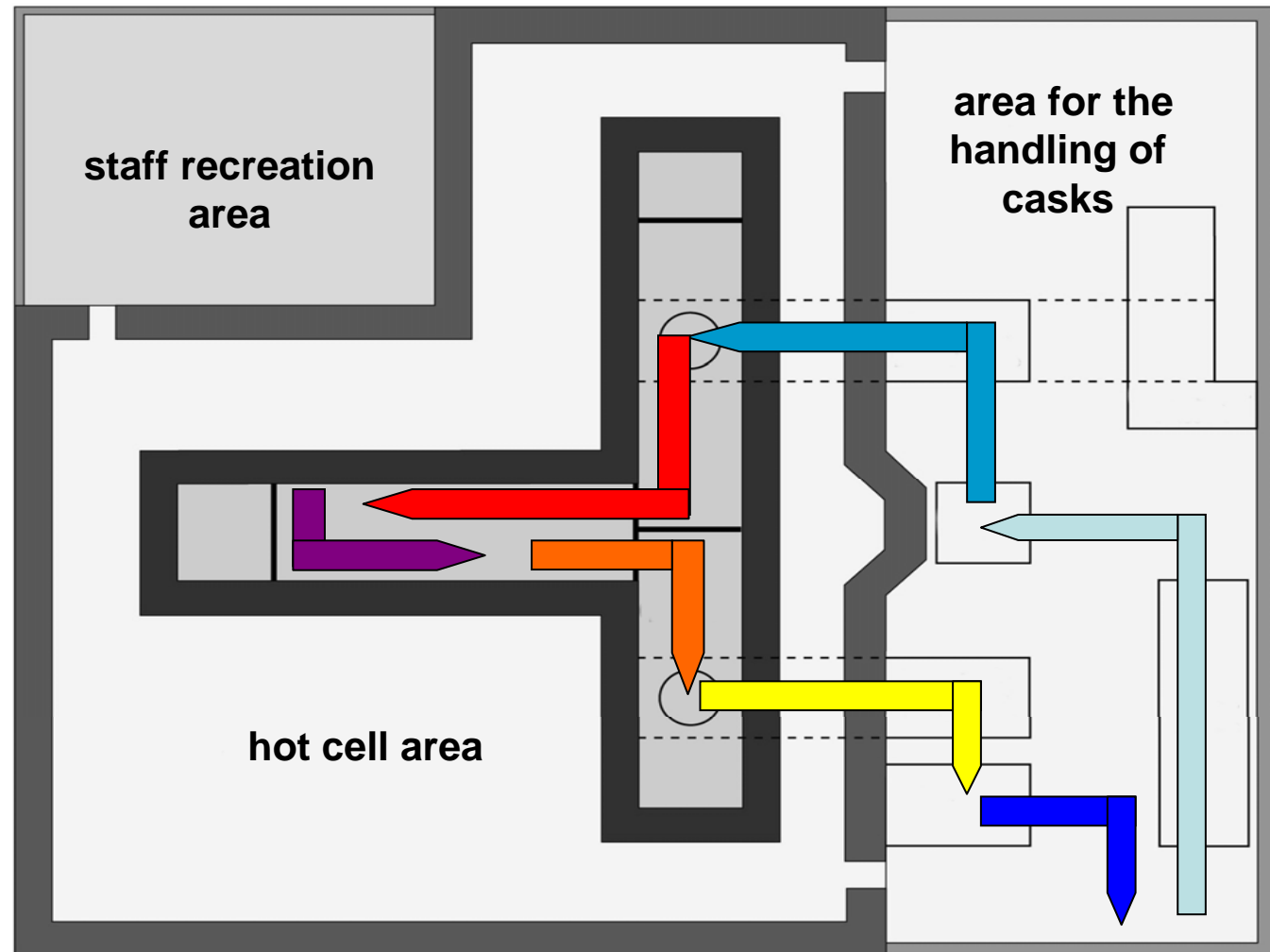
fuel assemblies

fuel rods

cans with fuel  
rods

POLLUX<sup>®</sup>-cask

POLLUX<sup>®</sup>-cask  
with welded lid



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# Pilot Conditioning Plant Gorleben

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Hot cell for separating fuel rods from structural parts



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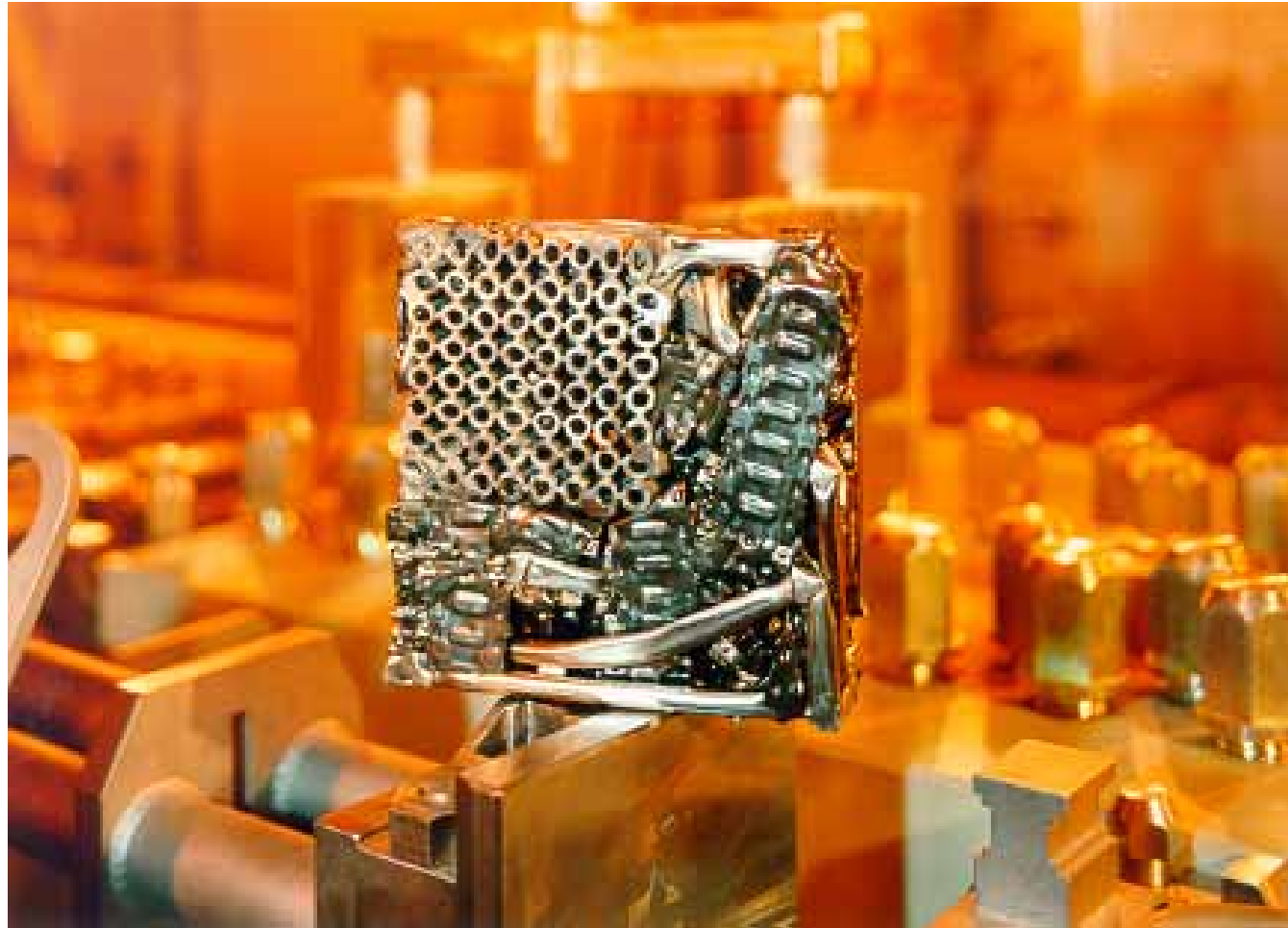




# Pilot Conditioning Plant Gorleben

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Compacted  
structural  
parts of a fuel  
assembly



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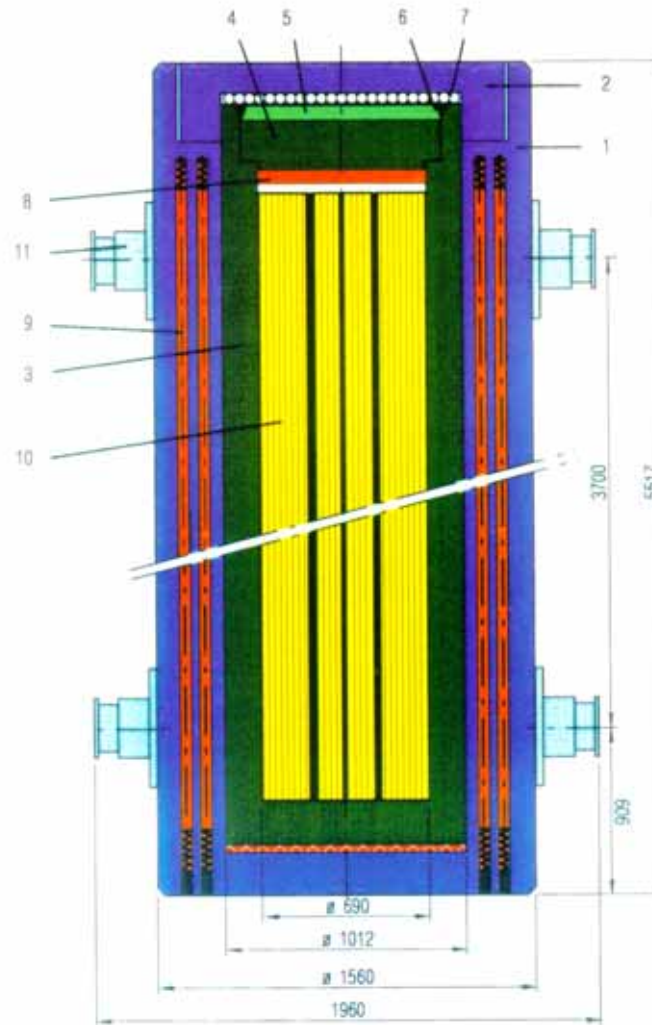
# Spent Fuel Disposal: Reference Concept POLLUX

POLLUX-cask

Mass: 65 t

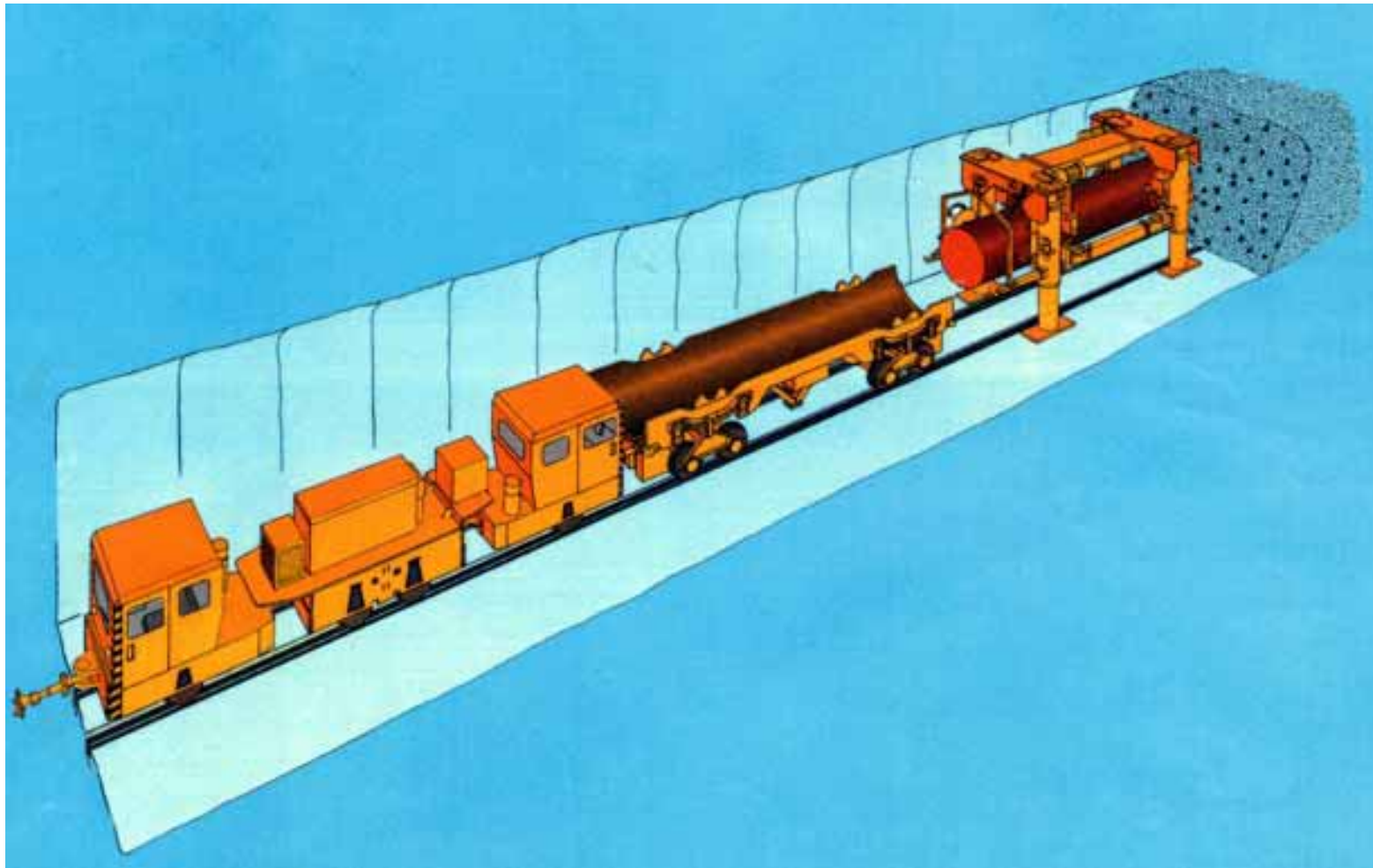
Content: ca. 5 tHM

Fuel rods from  
10 FA from PWR or  
30 FA from BWR



# Final Disposal: Reference Concept POLLUX

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## Final Disposal: Reference Concept POLLUX

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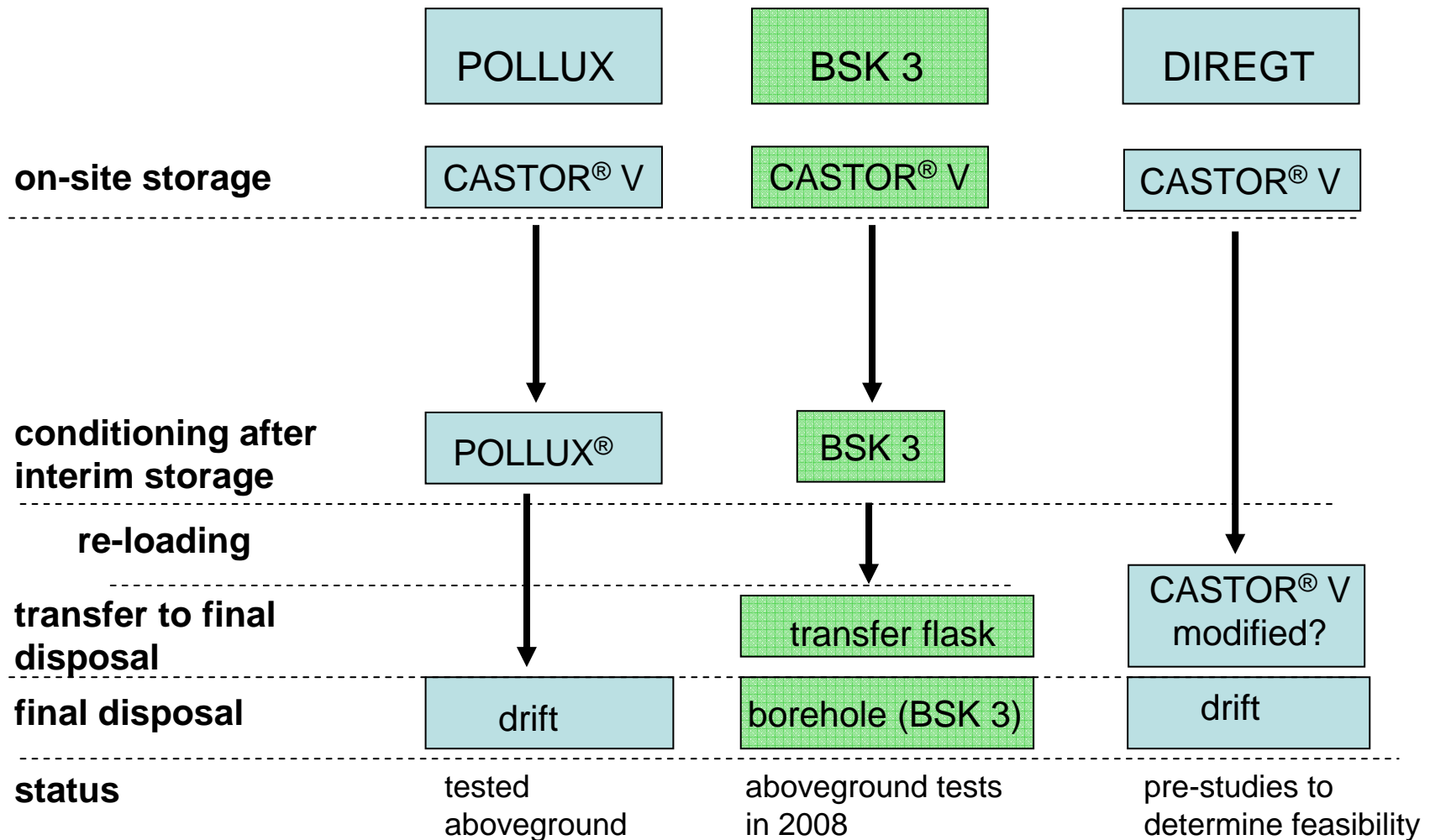


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# Concepts for Direct Disposal of Spent Fuel



# Spent Fuel Disposal using the Borehole Technology

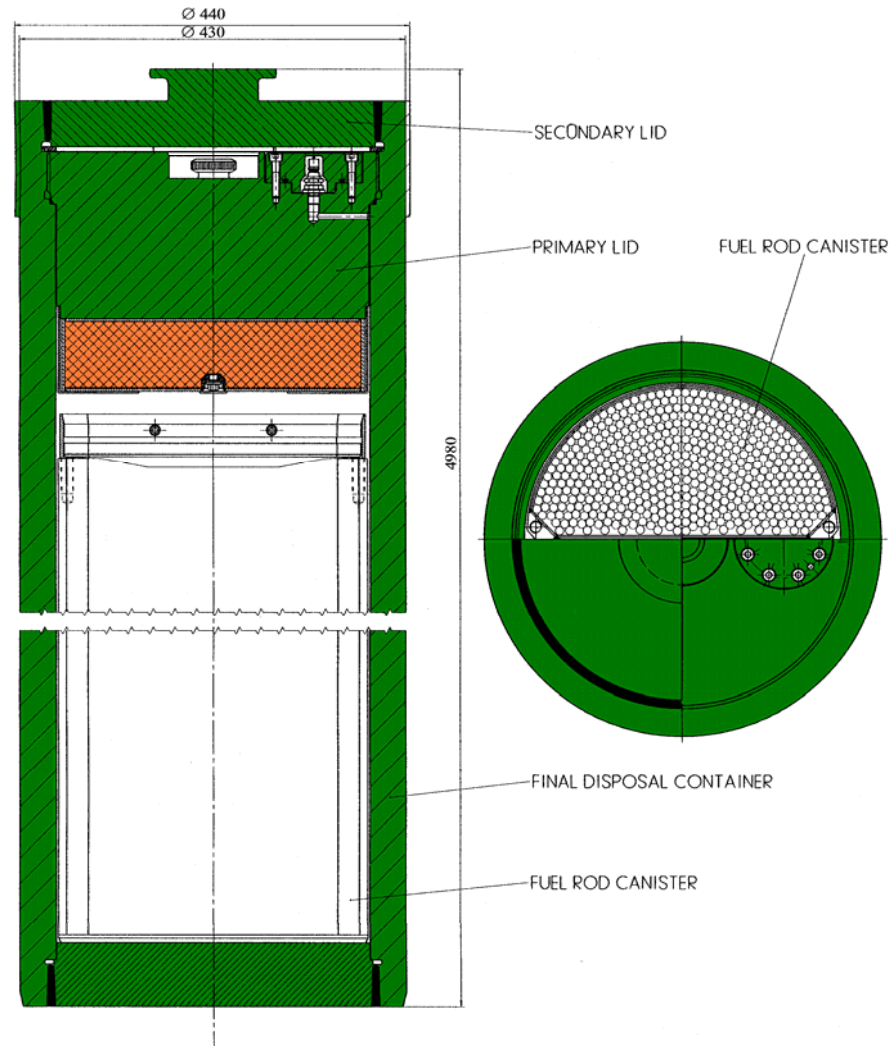
## BSK 3-concept

### Disposal cask

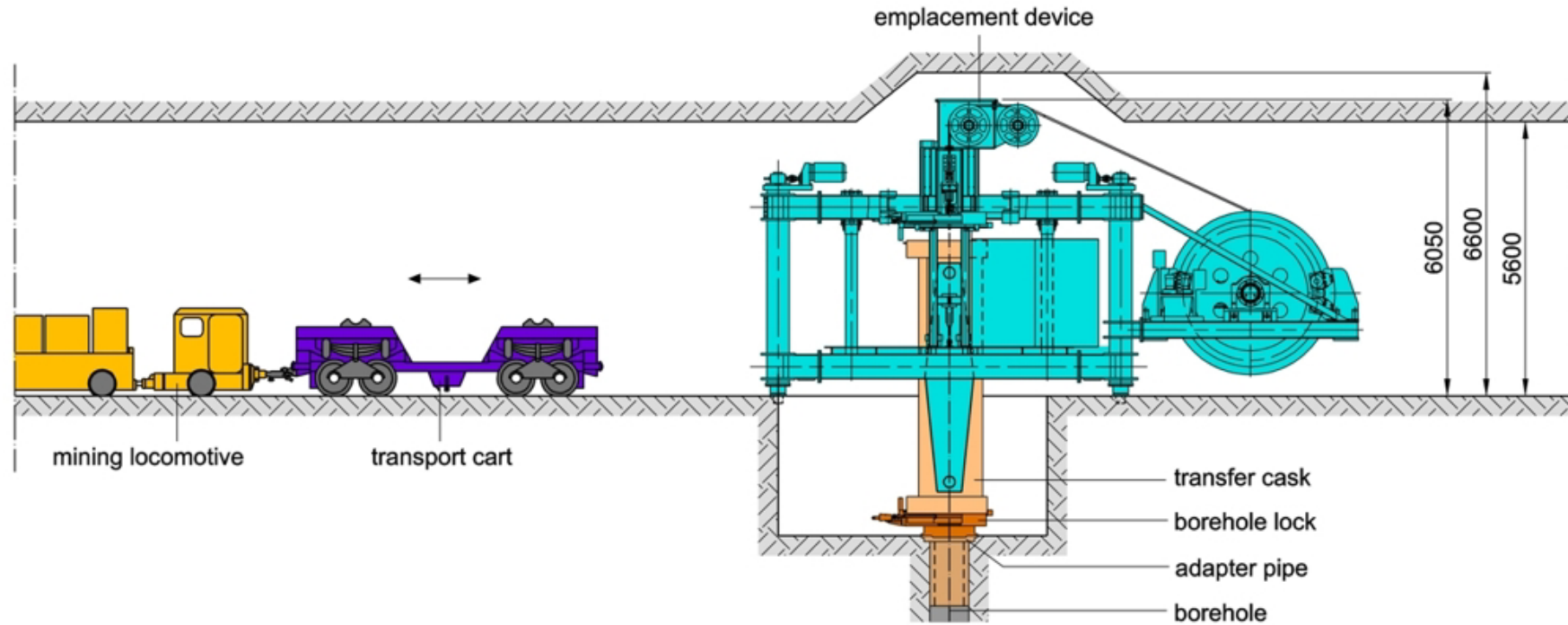
BSK 3/9 for fuel rods of  
3 PWR-FA or 9 BWR-FA

### Remark:

Borehole emplacement is  
also used for the disposal  
of reprocessing residues



# Spent Fuel Disposal using the Borehole Technology



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# Final Disposal Concepts: Drift, Borehole

## Reference concept

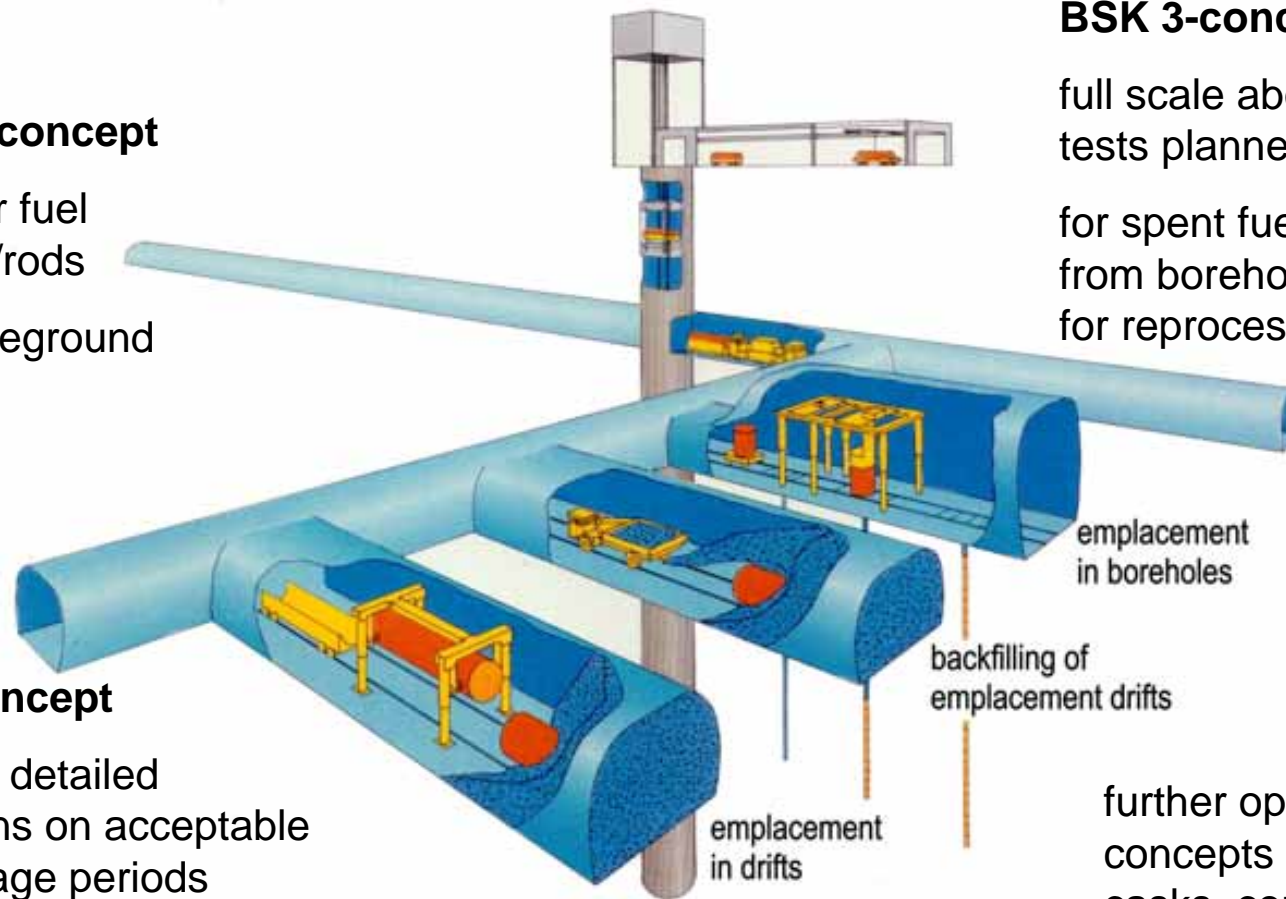
POLLUX for fuel assemblies/rods

tested aboveground full scale

## DIREGT-concept

pre-studies, detailed investigations on acceptable interim storage periods

for spent fuel and reprocessing residues



## BSK 3-concept

full scale aboveground tests planned for 2008,

for spent fuel, developed from borehole technology for reprocessing residues

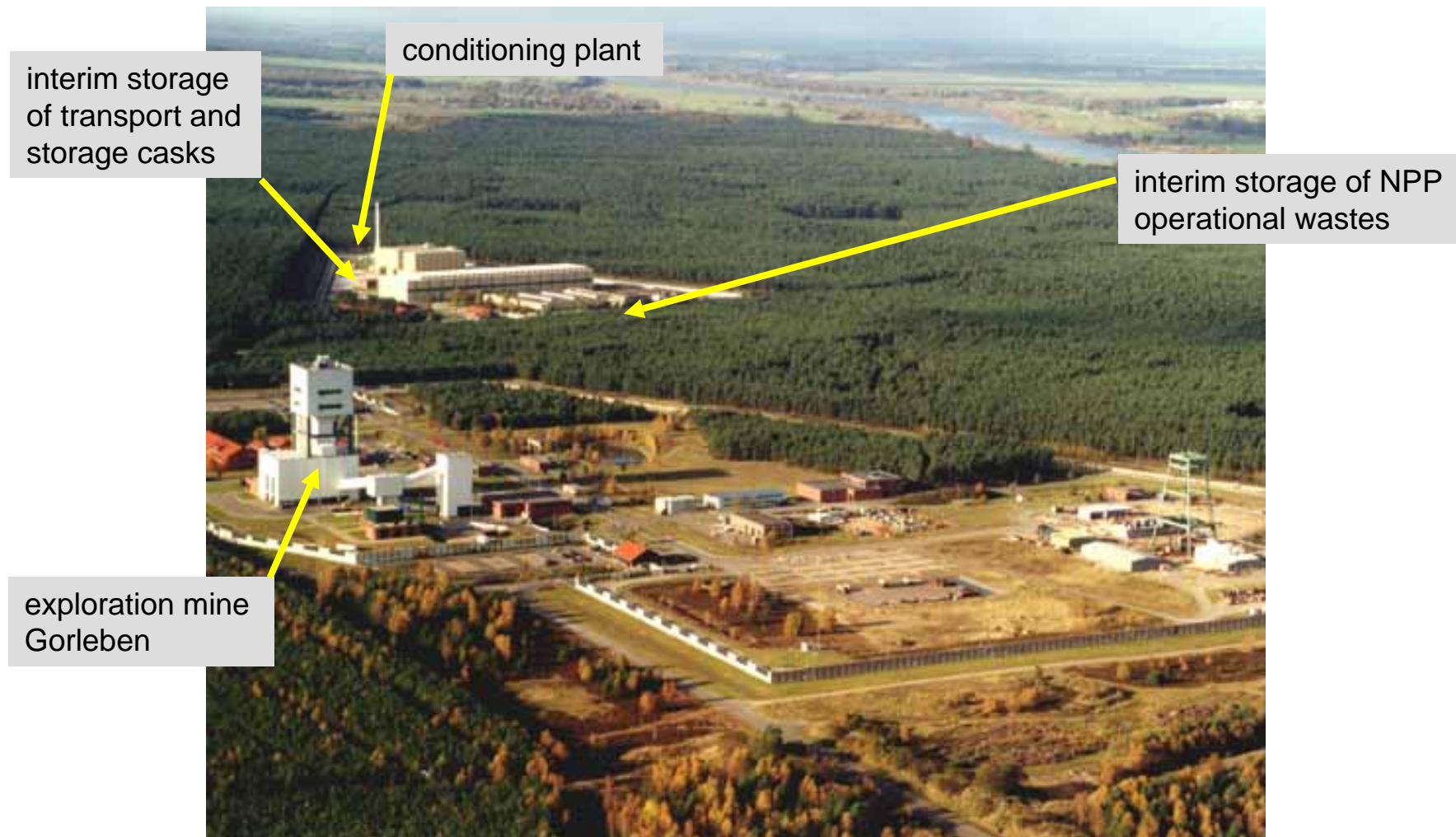
further optimisation of concepts regarding casks, conditioning, emplacement concepts





# Existing Plants for Conditioning and Interim Storage of Fuel Assemblies and Exploration Mine Gorleben

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