Credible Assurance to the International Community

Special Symposium for the IAEA 50th Anniversary
Global Challenges for the Future of Nuclear Energy and the IAEA
11 April 2007

Jill N. Cooley
Director, Division of Concepts and Planning
Department of Safeguards

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IAEA Safeguards

- Purpose - To provide assurance about the exclusively peaceful use of nuclear material and facilities
- Objectives - Timely detection of diversion and deterrence through risk of early detection
- Task - To verify correctness and completeness of declarations made by States

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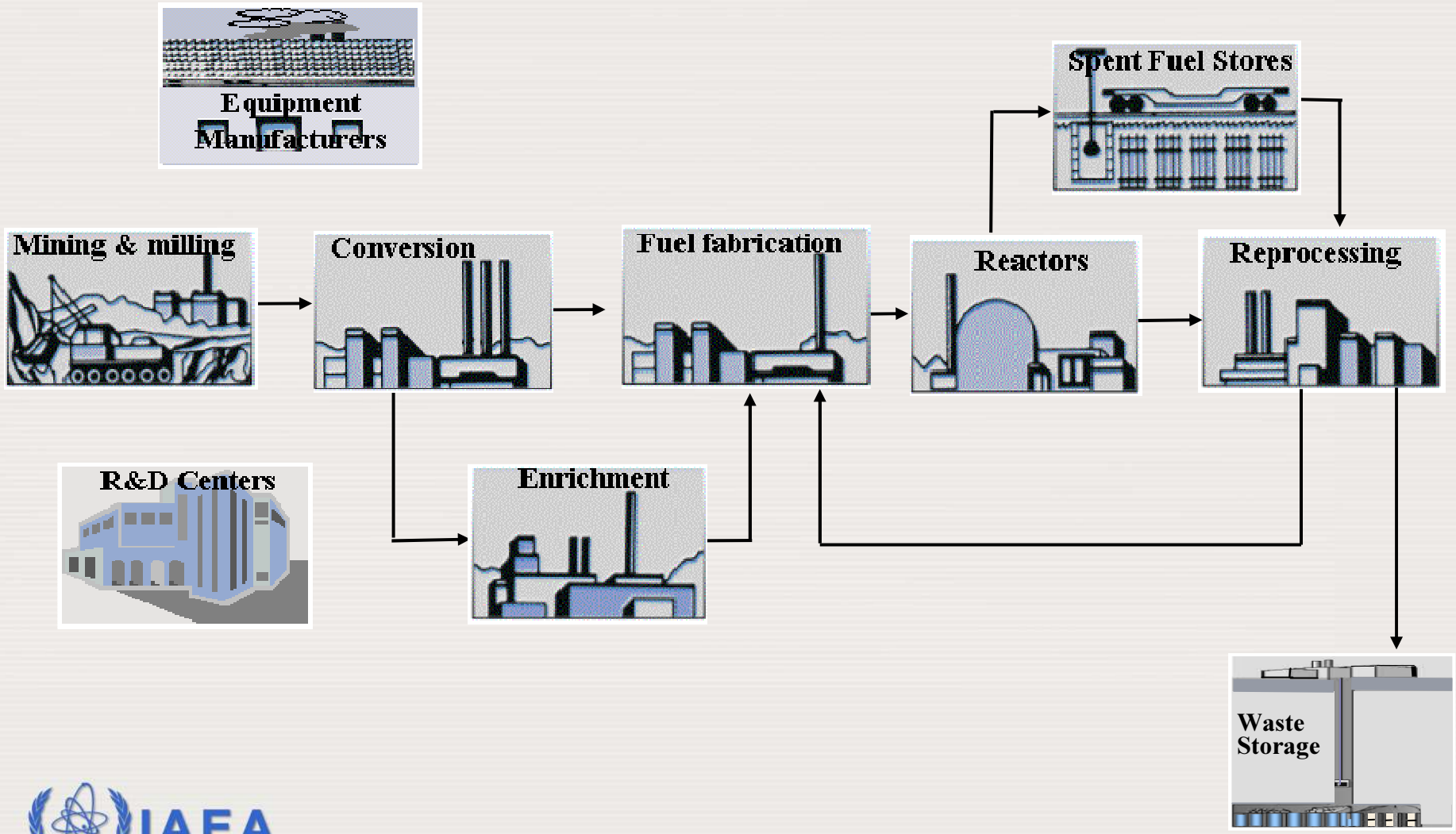
Nuclear Fuel Cycle



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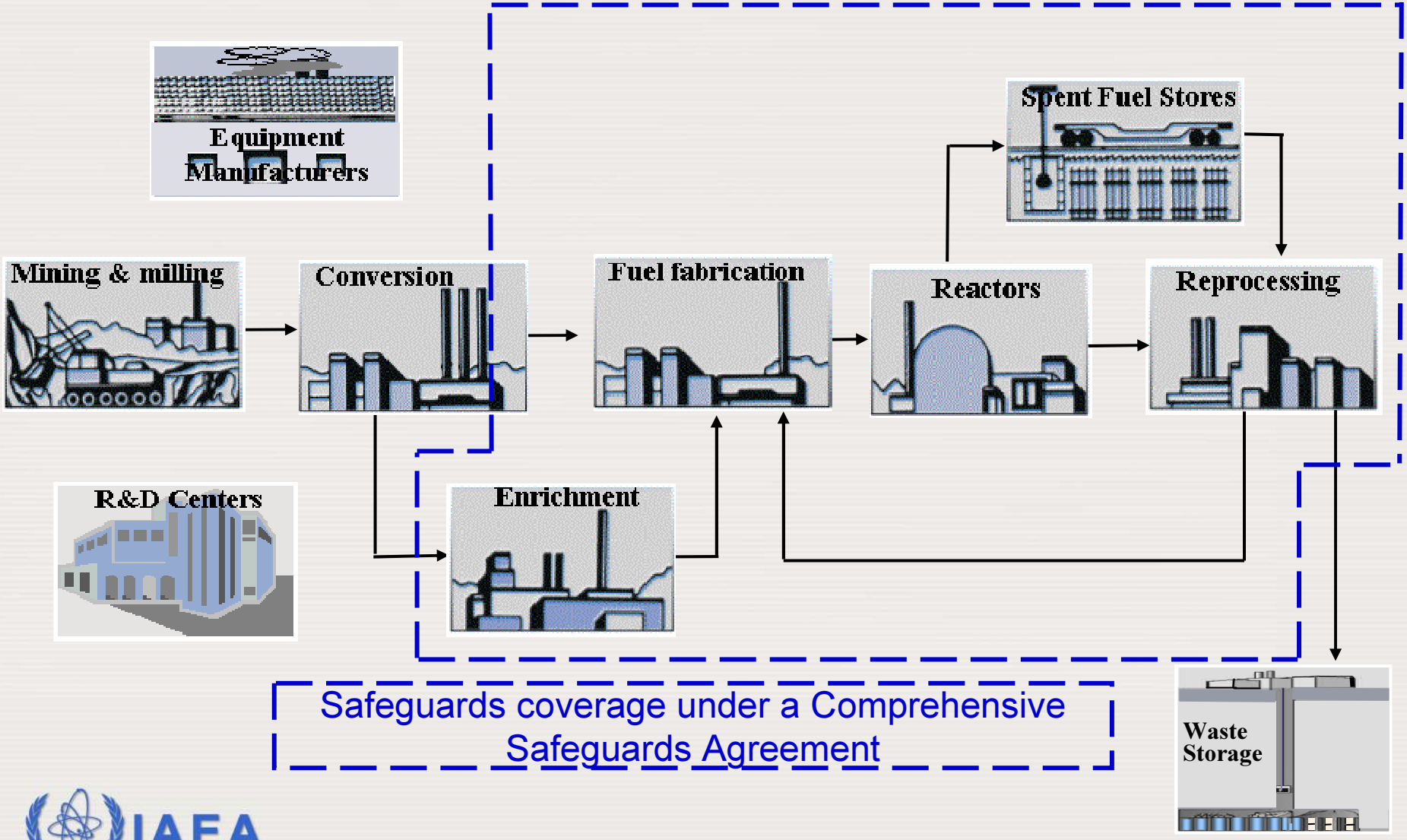

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Nuclear Material Accountancy

Inspectors counting and identifying fresh fuel at a power reactor

Verification of UF_6 cylinders

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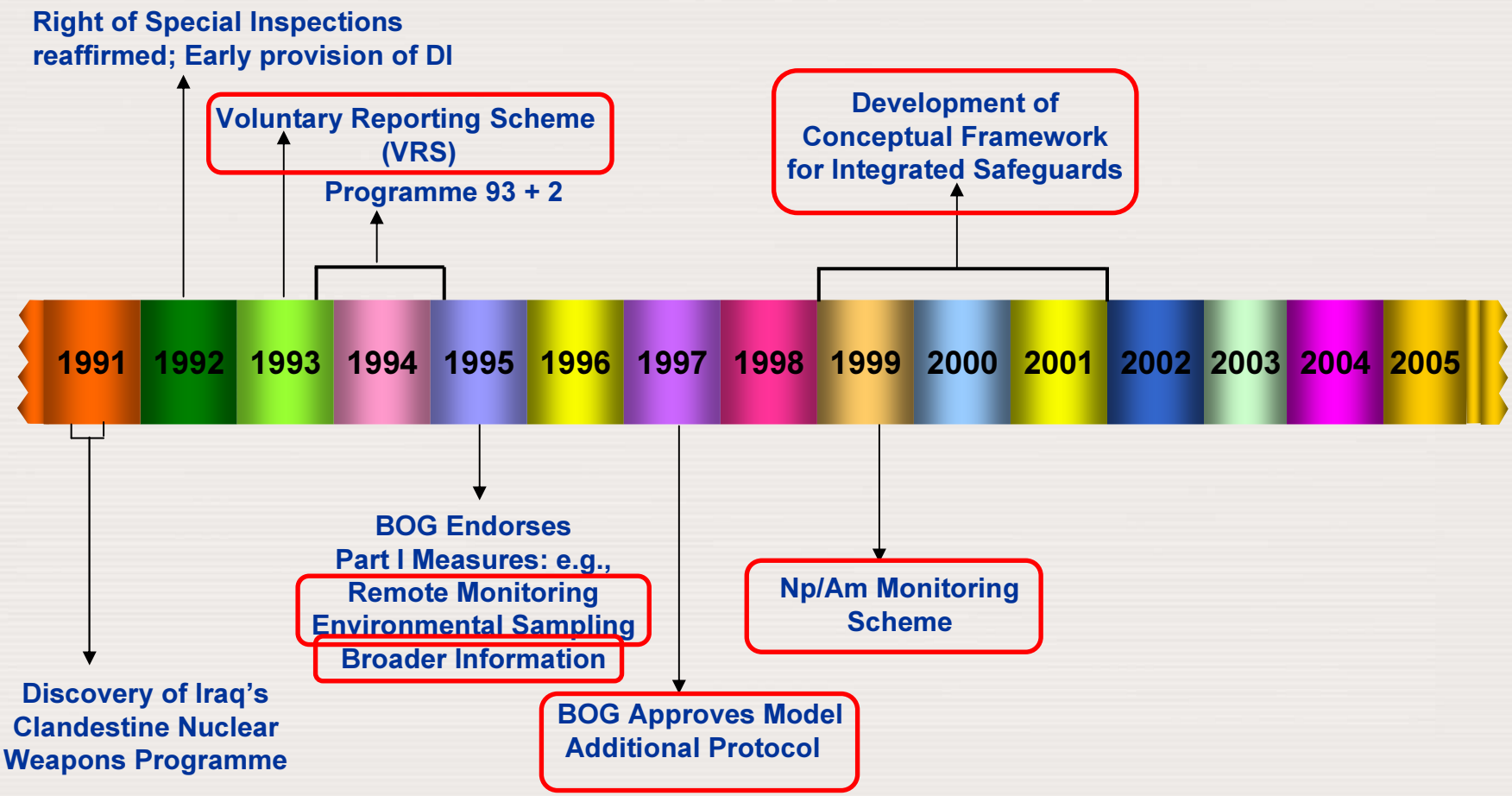
Containment and Surveillance

Surveillance cameras being serviced

Sealing of a spent fuel rack

Strengthening the Safeguards System



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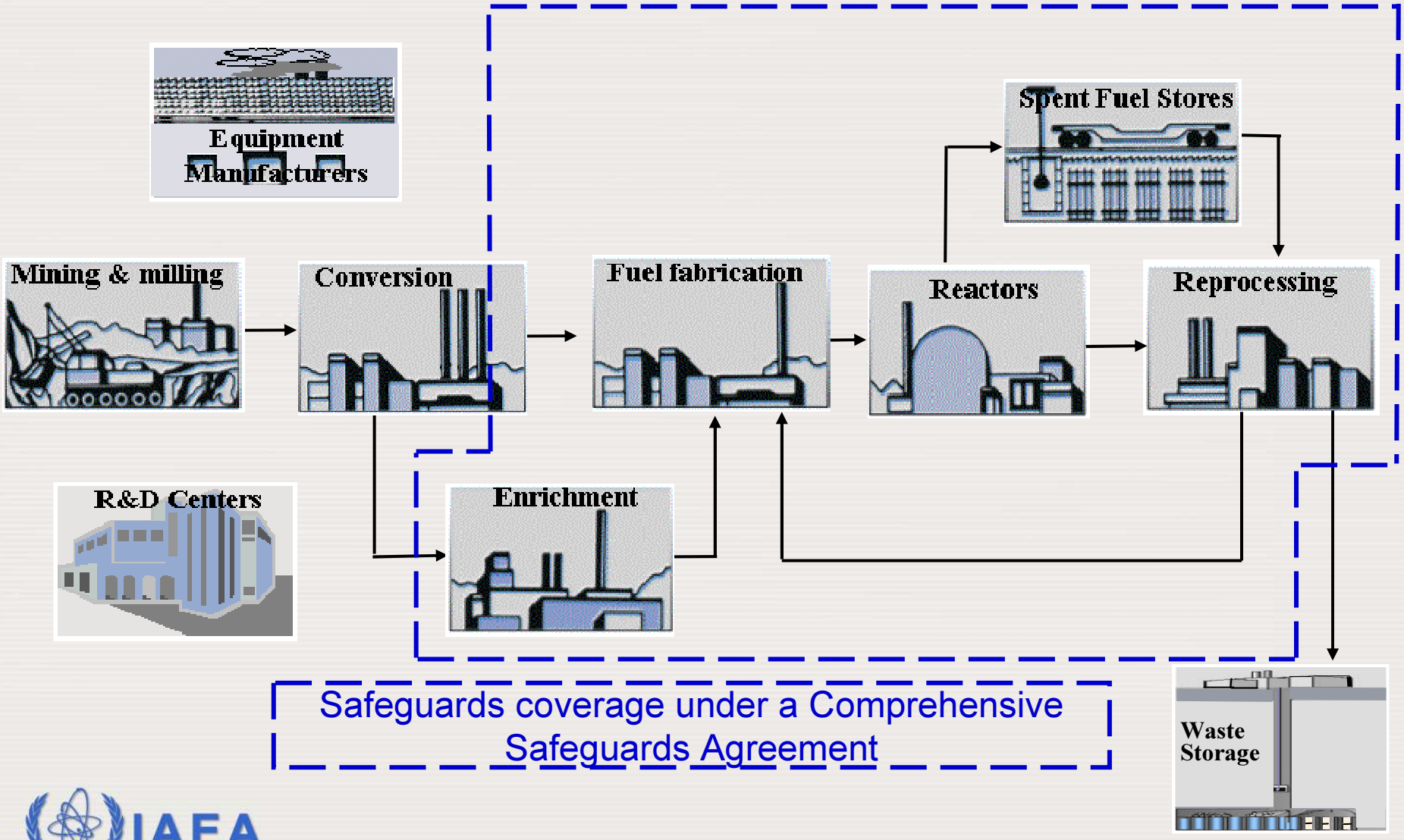
New Legal Authority



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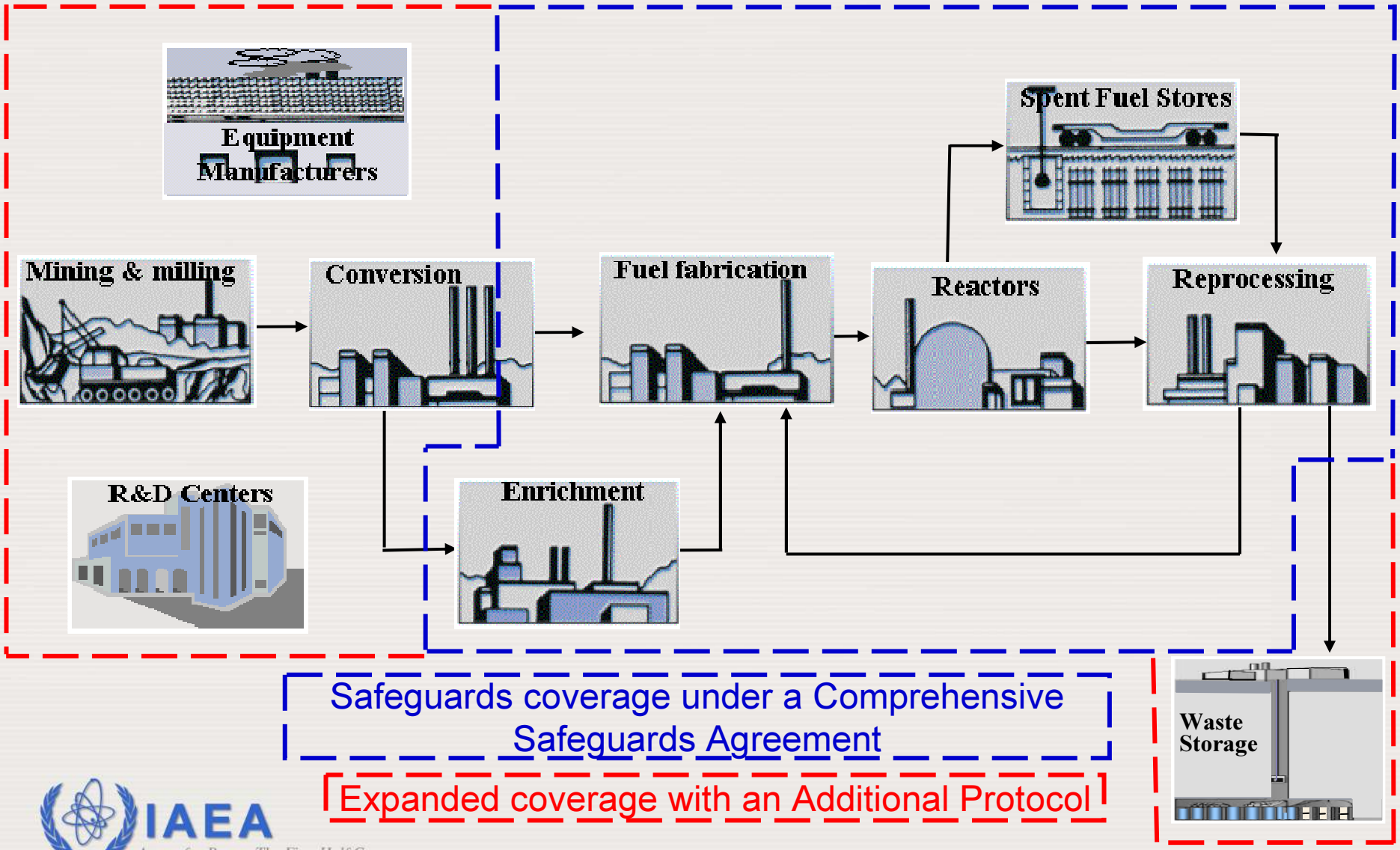

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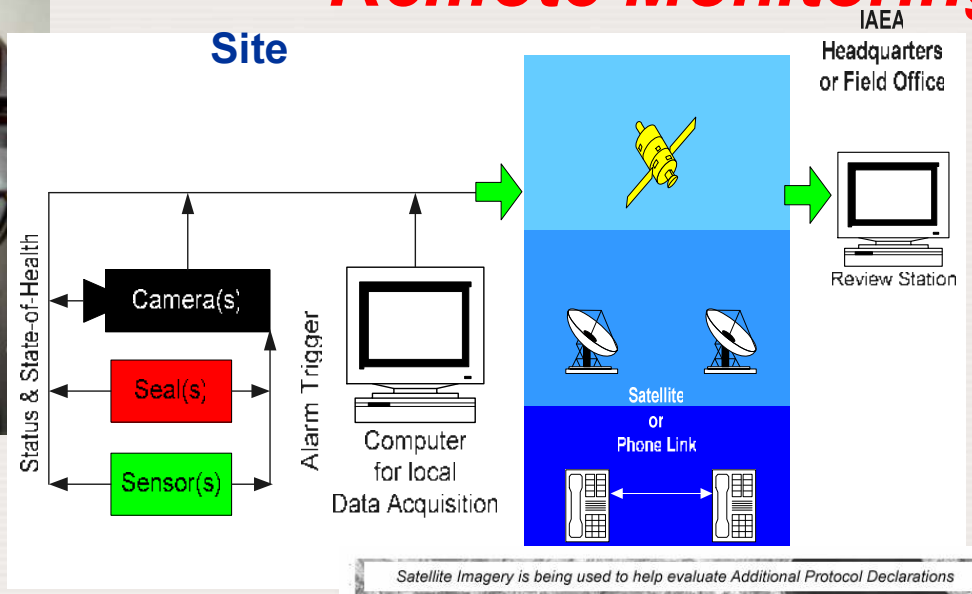
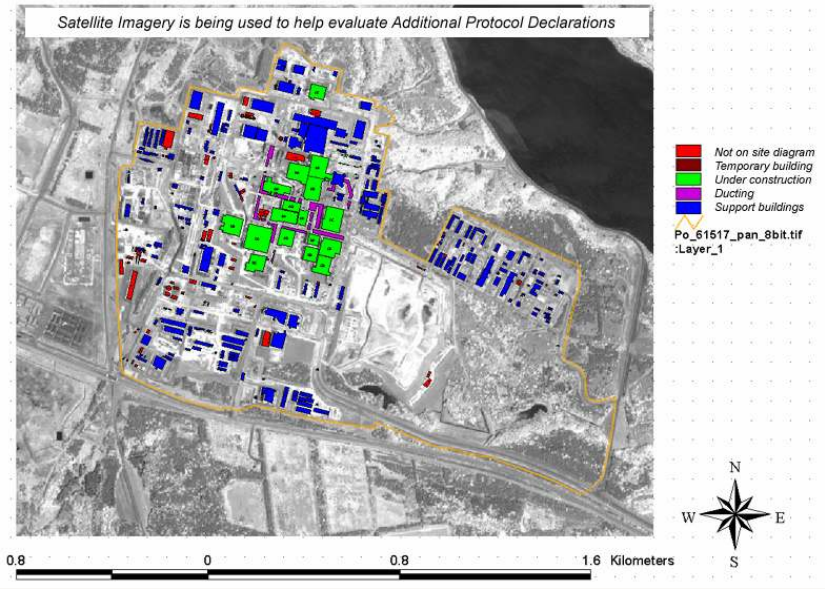
Advanced Technologies

Environmental Sampling

Remote Monitoring



Satellite Imagery



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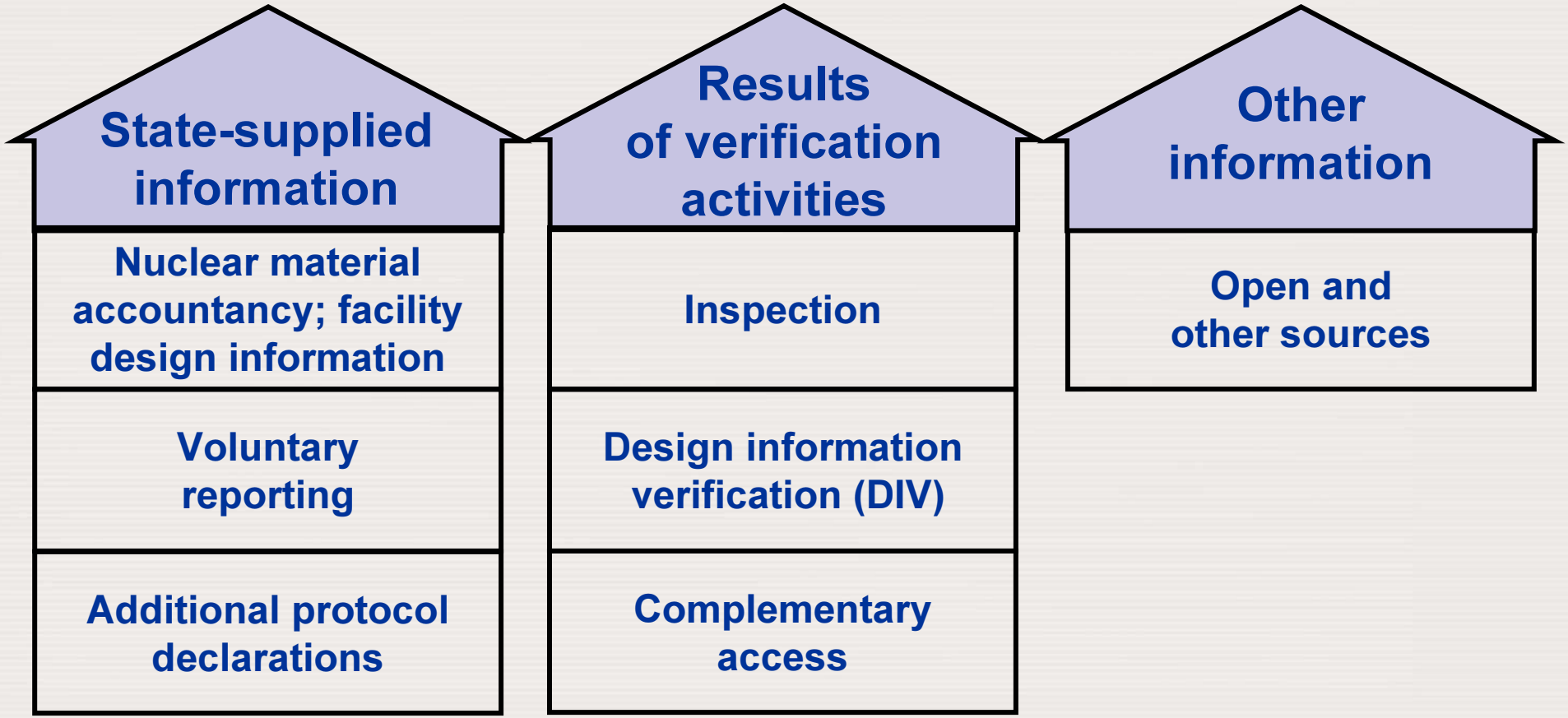
Broader Information Sources



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State Level Approach to Safeguards

- Use of all information about a State's nuclear programme to plan, implement and evaluate safeguards activities in a State ("information driven").
- A comprehensive State evaluation, conducted to provide as complete a picture as possible of a State's nuclear programme, used as basis for drawing safeguards conclusions.
- For a State with a comprehensive safeguards agreement (CSA) and an additional protocol (AP) in force, the objective is to draw the broader safeguards conclusion.
- With a broader conclusion, it is possible to optimize safeguards implementation under CSAs and APs – *Integrated Safeguards*.

Challenges to Safeguards Implementation

- Implementing additional protocols in more States
- Drawing the broader safeguards conclusion and moving to integrated safeguards
- Safeguarding complicated and different types of facilities

Major Safeguards Implementation Efforts

- Rokkasho Reprocessing Plant
- JMOX Project
- Chernobyl
- Enrichment plants in U.S. and France
- India
- DPRK

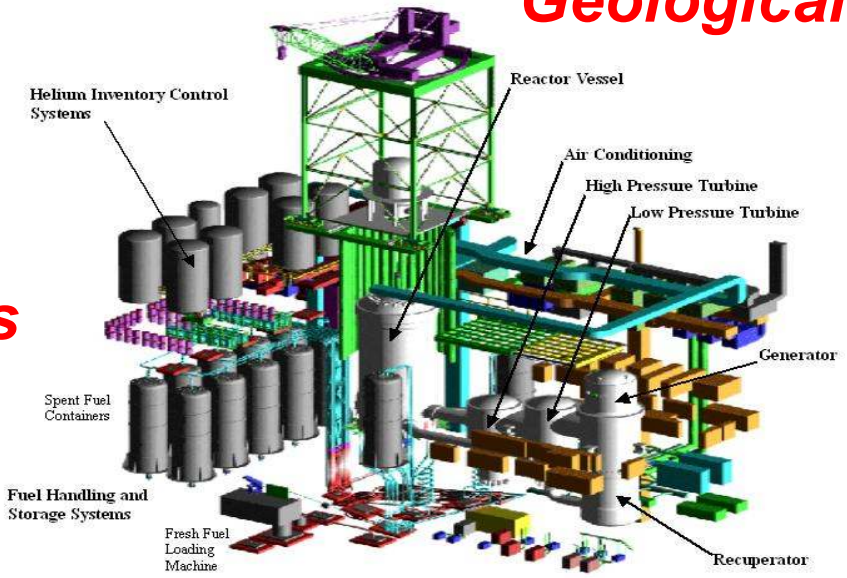
Development of New Approaches

Decommissioning

Fig. 13: First segment of RPV closure head
onto its temporary position on the biologic

Geological Repository

Pebble bed reactors



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Further Strengthening of Safeguards

- Conclusion and full implementation of existing safeguards instruments
  - All NNWS NPT parties to conclude CSAs
  - States to fulfill all legal obligations under safeguards agreements and APs
  - All States to conclude APs
- Expanding technical capabilities (expanding the NWAL; broadening satellite imagery; use of novel technologies)
- Broader information

Some Implementation Statistics for 2005

- Number of facilities under safeguards 925 (in 72 States)
- Nuclear material under safeguards 140 000 SQs (90 t Pu; 845 t Pu in spent fuel; 30 t HEU; 57 t LEU)
- Number of Inspections 2 150
- Number of complementary accesses 160
- Metal seals (detached and verified) 17 500
- Other seals (verified in situ) 9 700
- Nuclear material samples 800
- Environmental samples 800

Regular Budget: $109 M; Extrabudgetary: $13M

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