Australian Government

Australian Nuclear Science and Technology Organisation

Planning for final operation of the HIFAR Reactor

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Outline

- HIFAR Introduction
- Expectations
- Operational Challenges

HIFAR

- 10 MW
- First criticality on 26th January 1958
- Used for
  - Industrial & medical isotope production
  - Neutron scattering
  - Silicon doping

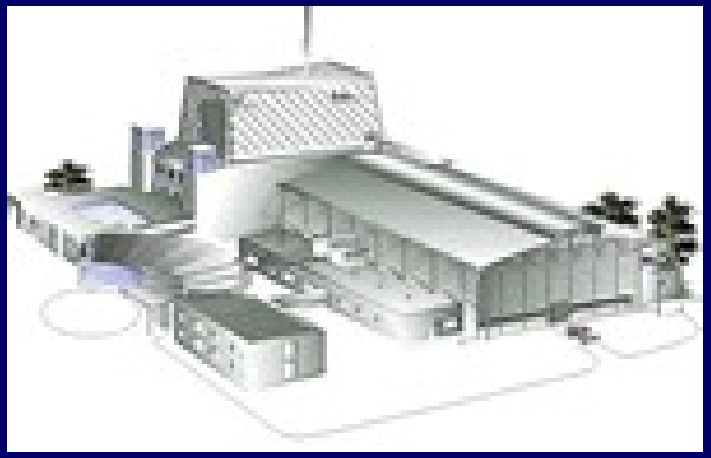
Expectations

- OPAL planned to be operational by late 2006
- Safe and reliable operation of HIFAR
- HIFAR and OPAL dual operation to ensure continuos supply of reactor based services
- Sufficient staffing and resources for dual operation
- Maintain TGA pharmaceutical licence
- HIFAR operation until December 2006
- Smooth transition from HIFAR to OPAL

Challenges

- Staffing
- HIFAR's ageing plant
- Fuel supply
- Regulatory expectations
- Plans for Decommissioning

Staffing



Staffing

- Additional HIFAR operators and support staff recruited
- Changes to shift rostering
- Share support staff between HIFAR and OPAL
- Utilise ANSTO personnel from other divisions

HIFAR Plant

- 2006 is HIFAR's 49th year of operation
- 35 day operating cycle
- Scheduled shutdown time increased from 3.5 days per cycle to 4.5 days per cycle
- Additional maintenance and measurements for fuel conversion program
- More preventative & predictive maintenance
- Increased safety culture awareness

Fuel Supplies

- Original fuel assemblies manufactured by UKAEA (93%, 80% & 60% U235)
- RISO, Denmark – 19.75% U235
- Safety category 1 project to convert HIFAR to Low Enriched Uranium (LEU) silicide fuel
- Currently over 50% converted to LEU fuel

Fuel Supplies

- Expectation to operate until December 2006
- Additional LEU Fuel required
- Contract signed with CERCA, France to supply additional fuel assemblies
- Enriched uranium of US Origin
- US FRRSNF acceptance program

Regulatory Expectations

- Continuing Safe operation compliant with Safety Analysis and Operating Limits and Conditions
- Notification of changes made to plant or operating practices

HIFAR Decommissioning

Three Options

- Short decay period then return to greenfield site
- Remove all activated plant & equipment and maintain as a heritage building or museum
- Remove unactivated plant & equipment and apply a long term care and maintenance program

Conclusion

- Plans are in place for transition of staff from HIFAR to OPAL
- Highlighted awareness of safety culture
- Additional fuel supplies from CERCA