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Review of Operational Readiness of the OPAL Reactor

John Ward

Regulation and Policy Branch

Nuclear Safety, Reactors

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OPAL Reactor

- OPAL Operating Licence was issued on 14 July 2006
- OPAL Reactor – 20MW Open Pool Light Water Reactor
- Designed to operate for 340 days per year
- Main applications – Radioisotopes, Silicon Doping, Neutron Beam Research

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The first reactor to be licensed by ARPANSA through every stage

Site Preparation

Construction and Pre and Cold Commissioning

Hot Commissioning and Operation

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Review of Physical Plant and Systems

(under Construction Licence)

- Principal task in lead-up to operating licence decision
- Covered detailed engineering, manufacture and installation of physical plant and engineered systems
- Subject to regulatory licence conditions requiring prior approval of ARPANSA CEO
- Request for Approval System (RFA)

Heavy burden on regulatory resources

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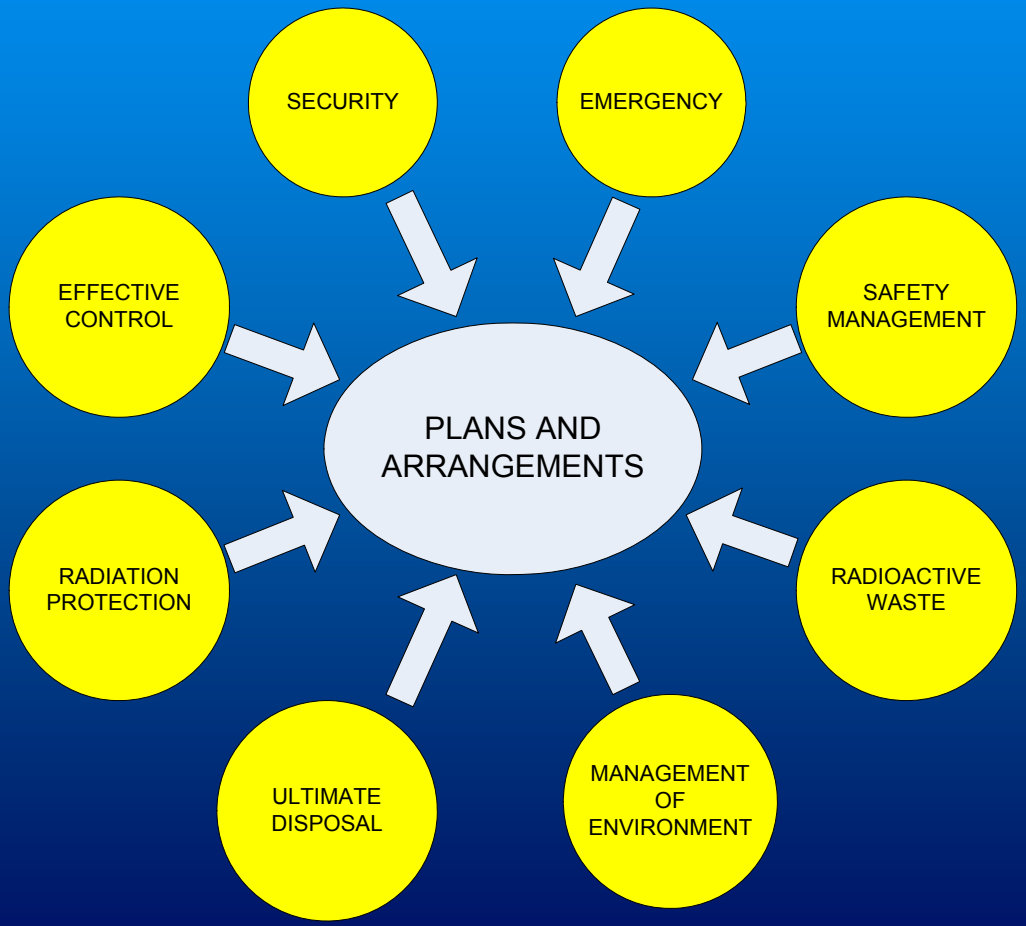
Review of Plans and Arrangements for Managing Safety

- Safety recognised as a function of physical systems, operational instructions/procedures and organisational culture
- Plans and arrangements key element of application



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The OPAL Business Management System

- Provides detail not specified in Plans
- Majority of documents not available until 2006
- 430 documents
- Documents subject to change
- Presented significant challenge to already stretched resources

- Assessment one input to CEO decision

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Regulatory Requirements

- Applicant must comply with ARPANS Act and Regs
- Information provided must establish that operations are without undue risk to people and environment
- Applicant must show that there is net benefit from operation
- Applicant must show that risk and doses are ALARA
- Applicant must show capacity to comply with the regulations and conditions imposed under the Act

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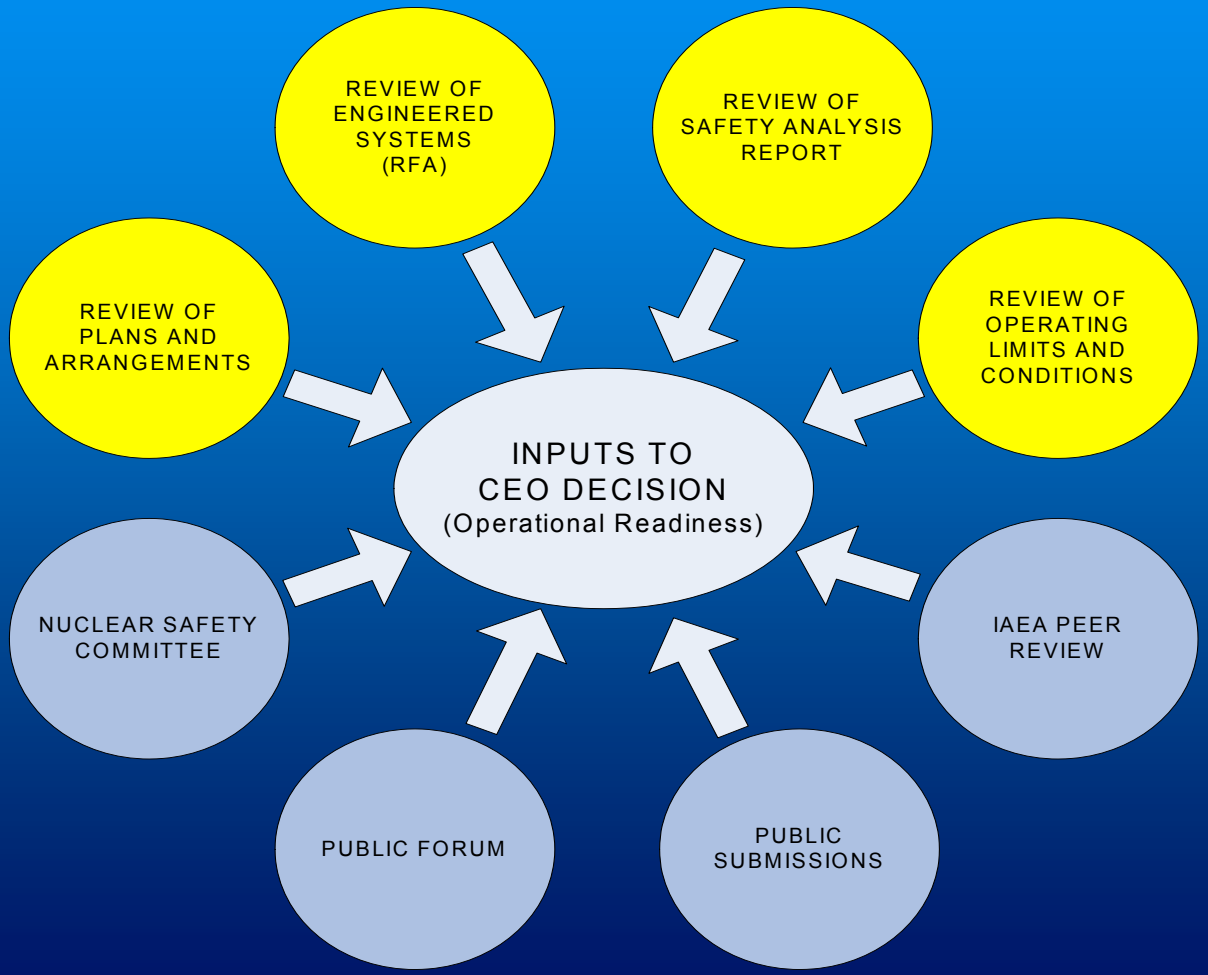
Input to CEO Decision to Grant Licence



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Method of Assessment

Regulatory Guideline on
Review of
Plans and Arrangements

www.arpansa.gov.au

- Structure of review based on ARPANSA guideline
- 338 individual guidelines in 7 categories
- Guideline not mandatory
- Compliance provides confidence that regulatory requirements have been considered/reached
- The BMS was assessed against each individual guideline in turn
- Assessment made against international standards

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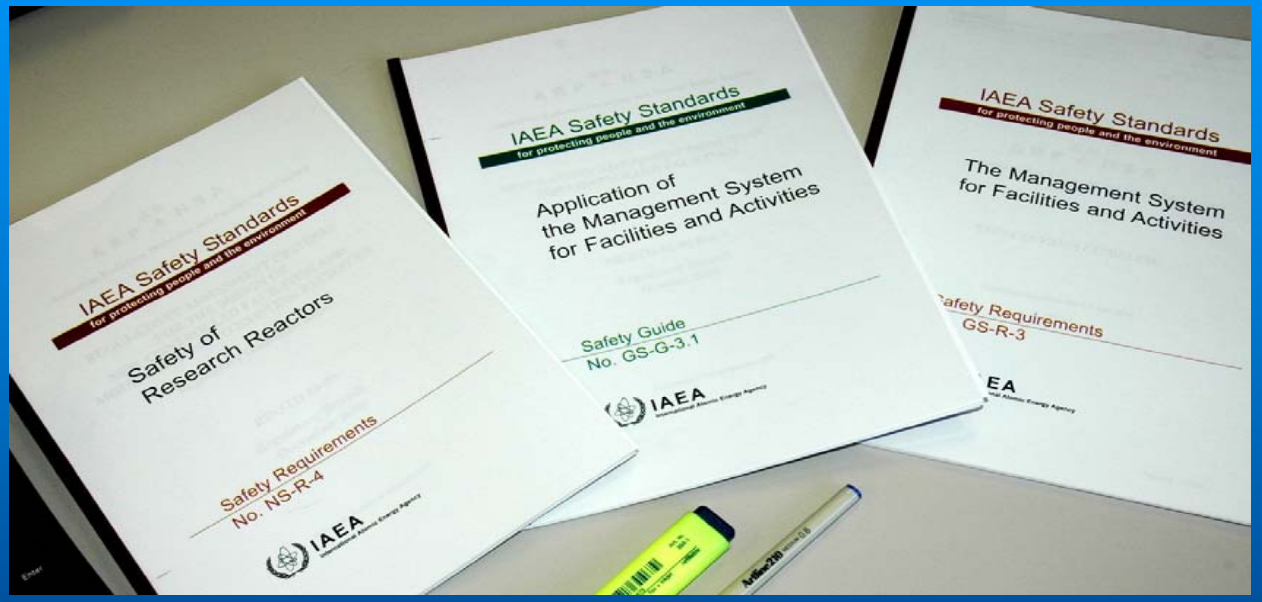
International Best Practice



- Applications must consider current IBP
- IAEA Safety Standards and OECD NEA main sources

- Where guideline was not fully satisfied, consequences and mitigating controls were considered

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Assessment of Operational Readiness

Regulatory Assessment Report
Operational Readiness

- Undertaken in Parallel with ANSTO's BMS development
- Opportunity to provide early advice to applicant
- Applicant able to make improvements
- Regulatory advice based on pre-established criteria – not the whim of the assessor
- Advice positive overall but also identified follow up actions

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Conclusions

- Review method provided well founded advice to CEO
- Ensured a comprehensive understanding of the OPAL Safety Management System by regulatory staff
- 25 recommendations for matters to be kept under review
- Knowledge of BMS essential for the application of regulatory checks and balances
- Ongoing regulatory challenge is to ensure that BMS continues to assure safe operation, provide continuos improvement and reflect IBP in Nuc and Rad Safety

"A regulatory body will assure the level of safety that it demonstrates it is prepared to accept"