

THE REFURBISHMENT/UPGRADING DILEMMA

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Current Projects at INVAP Involving Research Reactors

Upgrading	1 MW – training & research
Const./Comm.	100 kW - training
Detailed Design	30 MW - multipurpose
Preliminary Design	30 MW - multipurpose
Conceptual Design	10 MW - production

There are few upgrading/refurbishment projects compared with the large number of related inquiries received by INVAP.

They often involve:

- Intermediation through IAEA
- Poorly prepared business plans
- Biased approach to the real problems
- Incomplete identification of stakeholders

- **Identifying needs**
 - Compliance with present safety and security standards
 - Obsolescence and ageing
 - New roles and niches at local and regional scale

- **Shaping the modifications**
 - Definition of refurbishment or upgrade
 - Definition of required performance
 - Identification of reference designs or modifications performed in similar facilities

- **Project launching**
 - Nomination of Project Team
 - Drafting of Business Plan
 - Identification of current and potential Stakeholders
 - Identification of potential Contractors/Suppliers

- **Initial implementation**
 - Assessment of status of non-replaceable components
 - Definition of core conceptual design
 - Definition of fuel type and reflector
 - Definition of power range

- **Contributors to cost assessment**
 - EPC (contractor/supplier)
 - Service disruption
 - Dismantling and preparatory activities
 - Licensing
 - Staff preparation: incorporation, training, accreditation
 - Future operation costs and their influence on the business plan

- **Implementation**

- Procuring/manufacturing new equipment
- Defueling and clean up
- Removal and disposition of old SSC
- Installation and preoperational tests
- Staff training and accreditation
- Commissioning and return to routine operation

Control Rooms Upgrade

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