



Ensuring Nuclear Safety in fleet mode of Indian PHWRs

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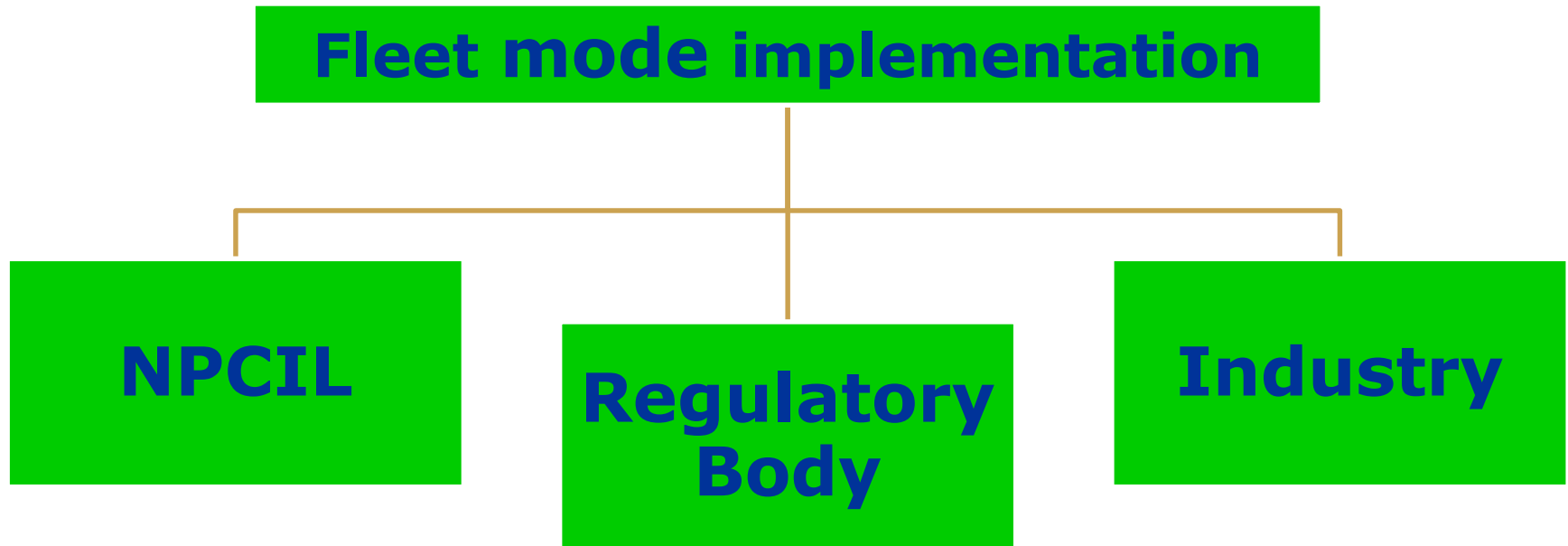
Setting up of Fleet mode Reactors

- First time in the history of DAE financial sanction is issued by Government of India for 10 reactors in fleet mode.
- The work on 2x700 MWe PHWRs at GHAVP has just commenced.
- All these reactors are planned to be progressively commissioned from year 2024 to 2031.



Setting up of Fleet mode Reactors

- The fleet mode schedule is drawn based on Industry feed back and achievable targets.
- The plan involves investment of about Rs. 1,25,000 Cr.
- 70% of this investment will be in manufacturing sector and 25% will be in Construction sector.
- This is a mammoth task and entire nuclear industry need to take up this challenge.



These agencies have a definite role to play for successful implementation of program.



Ensuring safety

- Ensuring safety of NPP begins from site selection and continues till decommissioning of the plant.
- Ensuring safety means ensuring the quality requirement as brought out during-
 - design & engineering,
 - procurement & construction and
 - Operation and maintenance of plant.



- Timely completion of project in itself ensures quality and thus safety. This requires-
 - A well planned project strategy to meet all requirements.
 - On time regulatory clearances.
 - Industry meeting schedule requirements.



Project Strategy

- Standardisation of design is the key.
- Keeping GHAVP-1&2 as the standard model, two enveloping designs; one for **soil strata** and other for **rock strata** have been envisaged.
- All construction drawings will be available prior to FPC.



Project Strategy

- Supply of free issue material for all major and critical equipment.
- Strategy for procurement of major equipment finalized to provide assurance regarding continuity of orders to the Industry.



Project Strategy

- Feed back obtained from industry is being appropriately addressed in tendering conditions.
- Augmentation of manpower for fleet mode implementation initiated, with immediate emphasis on enhancement in QA manpower.



Regulatory Support

- Regulatory clearance for two standard designs i.e. one for soil strata and other for rock strata.
- Project wise review to be limited to site specific design parameters and design documents.



Regulatory Support

- Combined siting and excavation consent.
- Early Regulatory clearance for DBGGM.
- Single construction consent for FPC and major equipment erection.



Challenges for Industry

- Mobilization of resources by Industry to maintain supply requirements.
- To build robust internal QA system and Focus on **First time correct approach.**
- Retention and development of skilled manpower in manufacturing, construction and quality assurance.



Challenges for Industry

- Simultaneous construction activity at multiple Sites.
- Strengthening financial capacity to meet large supply requirements.
- Quality issues in the recent past is an area of concern- Industry need to address.
- Expect Industry to learn from experience of KAPP-3&4 and RAPP-7&8.



- Timely completion of project and a strong quality culture in Nuclear Industry will ensure Nuclear safety.



Thank You