



PROGRESS IN THE PREPARATION OF A DECOMMISSIONING PLAN

WORKSHOP ON RESEARCH REACTOR
DECOMMISSIONING ACTIVITIES: COST ESTIMATES
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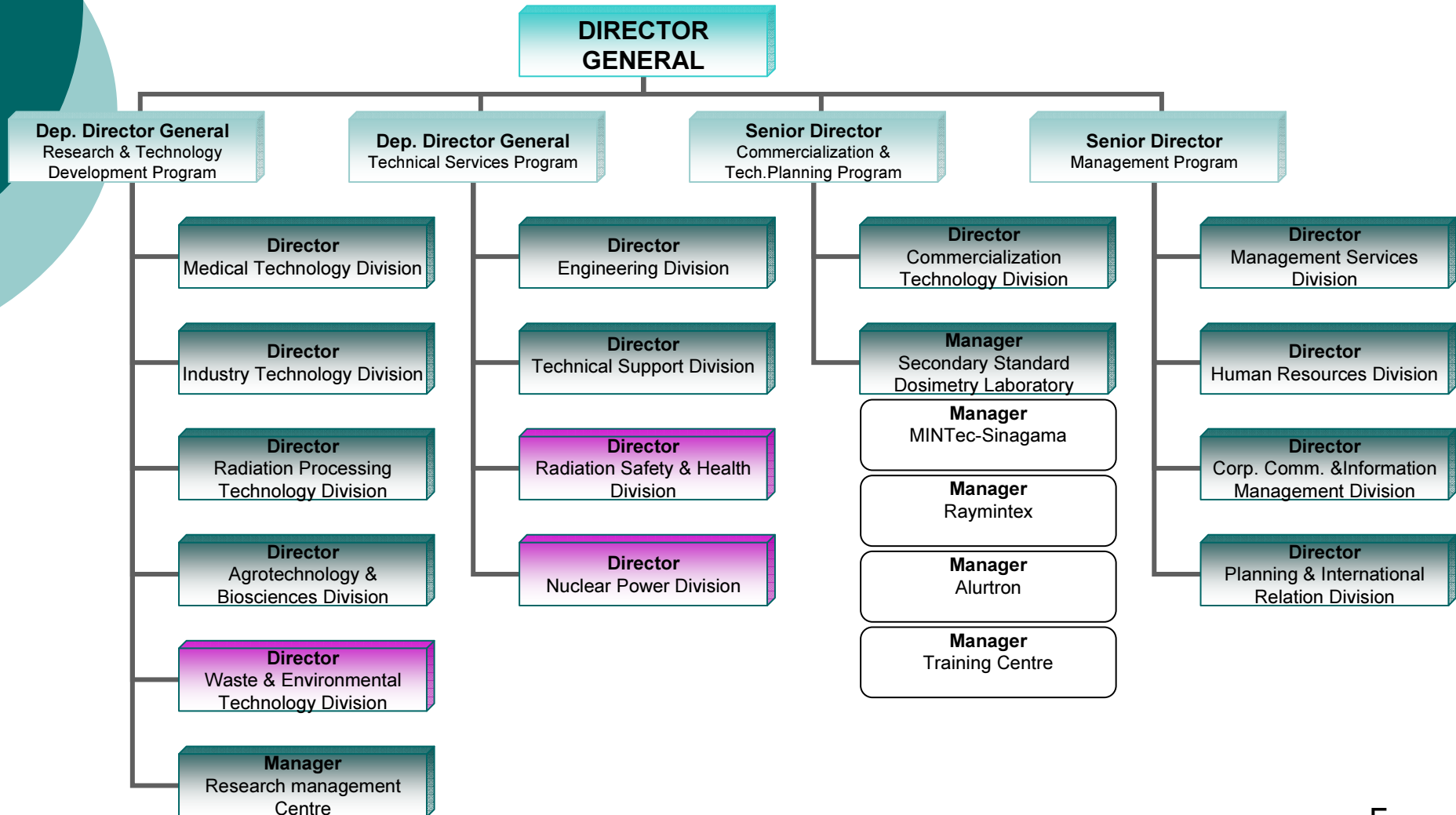
INTRODUCTION

- research reactor TRIGA Mark II Puspatti (RTP) operation since 1982
- no foreseeable intention to shutdown the facility in the immediate future
- Safety Analysis Report; Chapter 19
- aspects to facilitate the decommissioning process have been considered from beginning
- considerations,
 - *during design and construction*
 - *during operation*

REAKTOR TRIGA PUSPATI



NUCLEAR MALAYSIA: ORGANIZATION STRUCTURE





CURRENT ACTIVITIES

- propose upgrading RTP power from 1MW to 2MW or 3 MW
- preparing detail techno economic study for upgrading RTP
- designing fuel transfer cask as well as spent fuel storage tank - under preliminary process



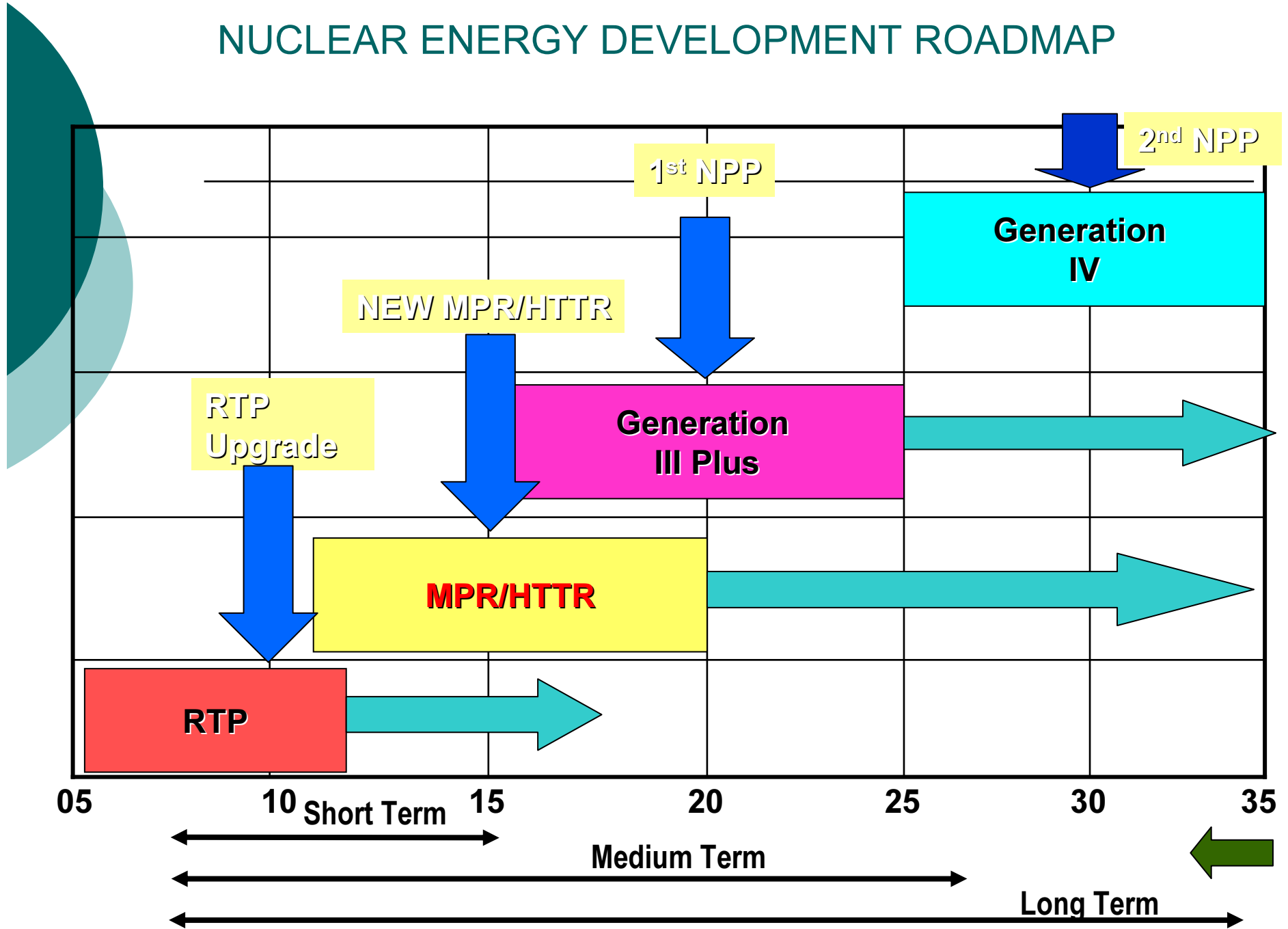
CONCLUSION

- working towards developing a decommissioning plan
- to follow progress in the field of decommissioning technology available in the world



THANK YOU

NUCLEAR ENERGY DEVELOPMENT ROADMAP





Preliminary Techno Economic Study of Upgrading RTP

- *For upgrading to 2-MW and above power level, it is envisaged that both the core top and bottom grid plates need to be replaced. For the 3-MW power level, almost the entire core structure need to be dismantled and replaced with a new core structure To facilitate these engineering modifications, the following is a listing of the items that comprise the scope of work for the upgrade to 3 MW:-*
- **Spent Fuel Storage Tank**
 - *Most of the nuclear materials, especially the irradiated fuel elements in the reactor tank must be removed from the reactor to reduce the radiation exposure during installation of various components in the core. In total, there are more than 100 irradiated fuel elements.*
 - *The tank must be designed such that the k-effective of the storage rack is within the acceptable limits as speculated in the license.*



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- **Fuel Transfer Cask**
 - *A fuel transfer cask need to be made available for transferring each and every irradiated fuel element from the reactor tank to the Spent Fuel Storage Tank above*
 - *Source term calculations must be performed to determine the maximum level of gamma radiation and neutrons from the highest burnup fuel element.*
- Crane
 - *The crane system need to be extended so that the fuel transfer cask can be used to transfer irradiated fuel elements from the reactor tank to the spent Fuel Storage tank and vice versa.*

