



Perspectives on Decommissioning NPPs in Japan

- Decommissioning technologies in Hitachi-GE Nuclear Energy supporting the Japanese Nuclear Power Plants —

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Nuclear Power Service Business Dept.

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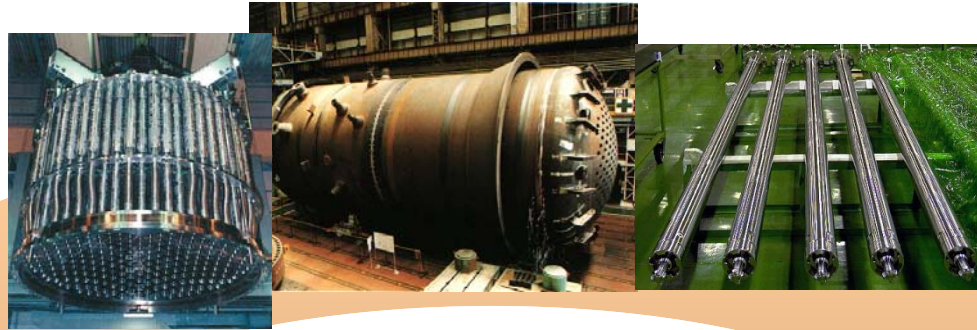
【Ref.】 Nuclear Power Plants in Japan

1. Introduction of Hitachi-GE Nuclear Energy

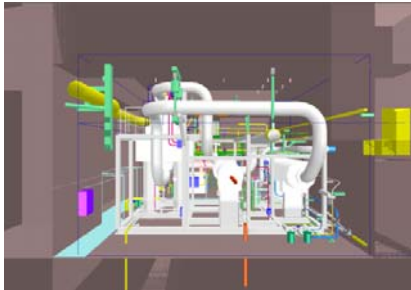


HGNE provides wide range of technologies and services on NPP

Manufacturing



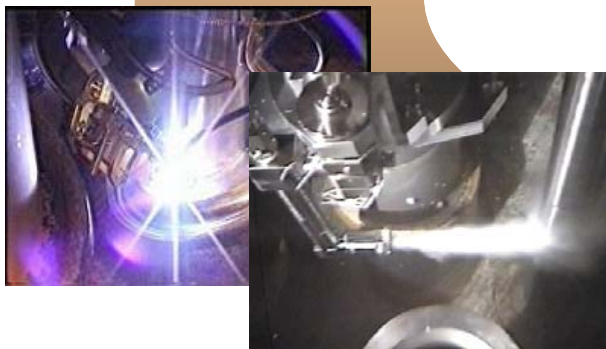
Design



Construction



Provide Integrated Services with Hitachi Group Companies & GEH



Services

(Maintenance & Modification)



Fuel Supply



Fuel Cycle & Waste Management

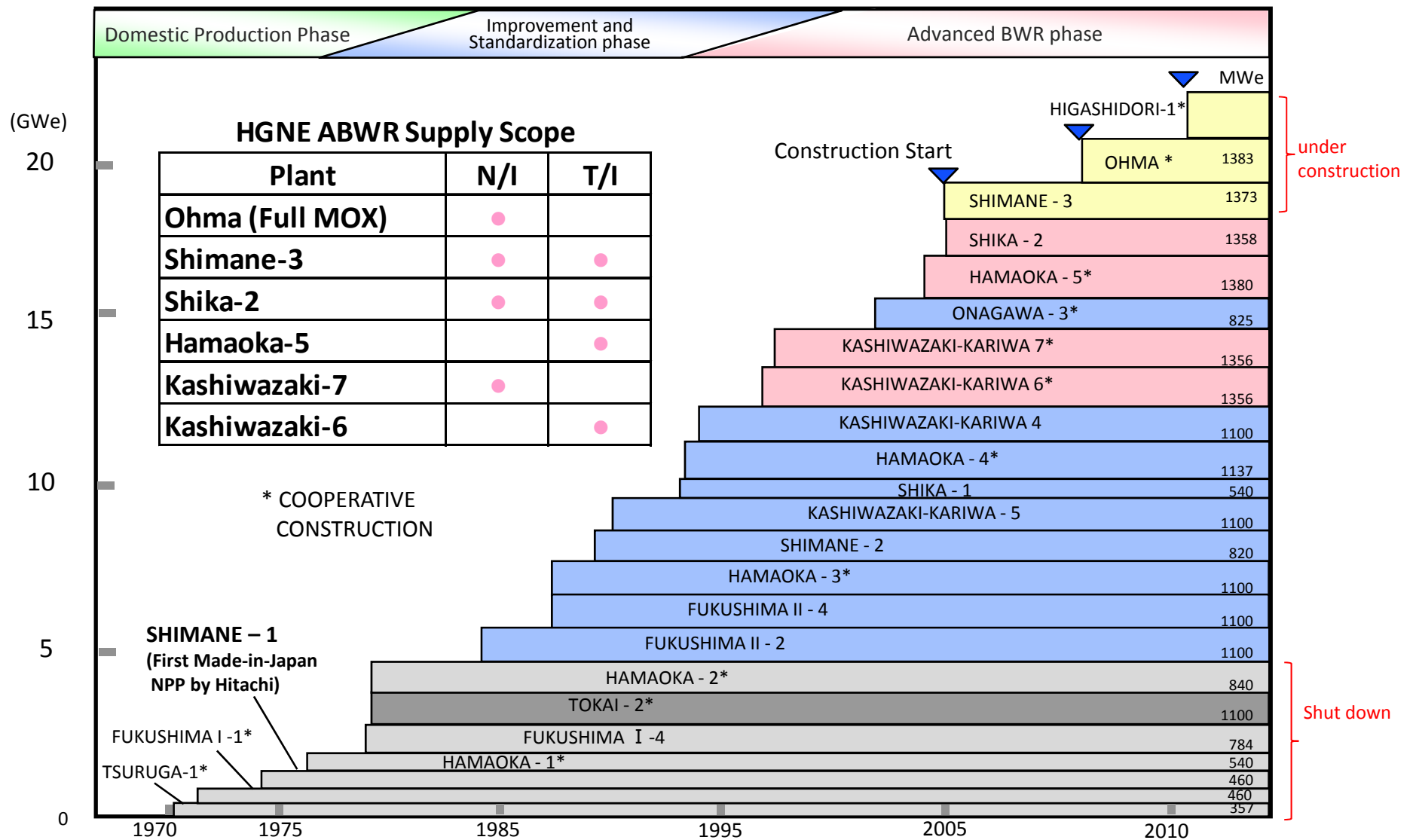


Spent Fuel Storage

1. Introduction of Hitachi-GE Nuclear Energy



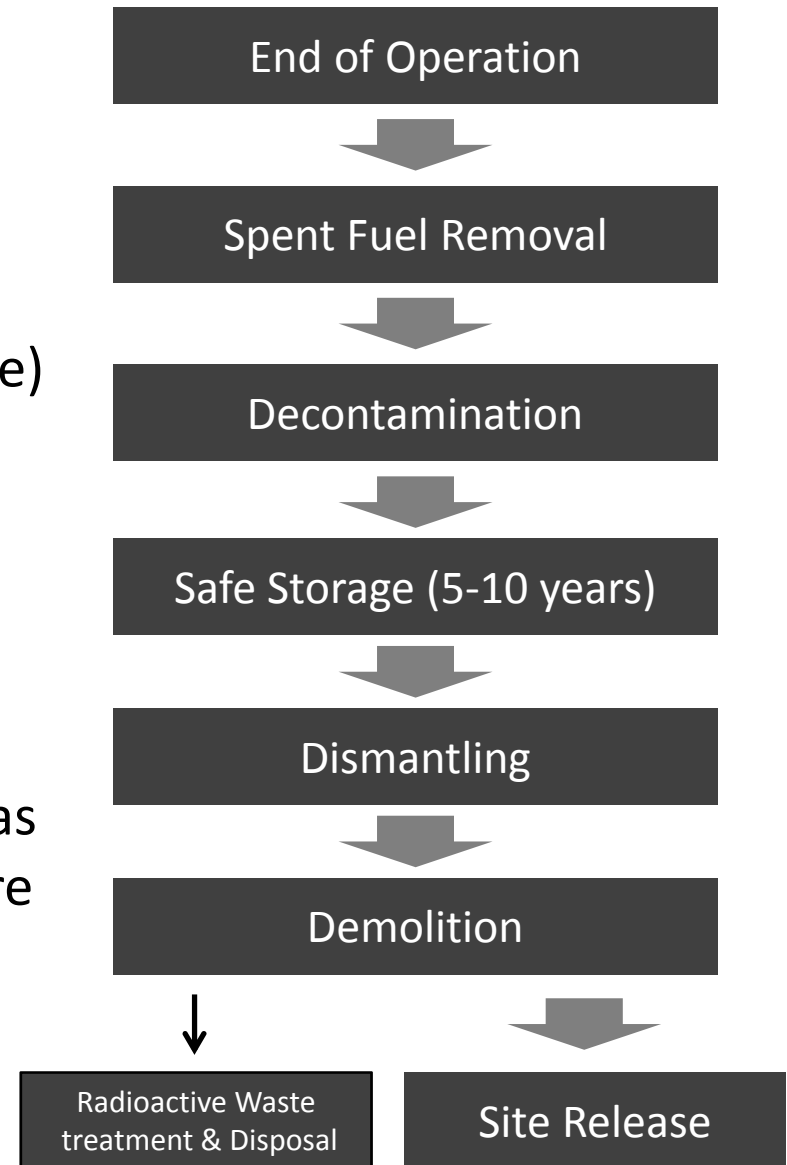
Continuous NPP construction experience for about 50 years



2. Decommissioning in Japan

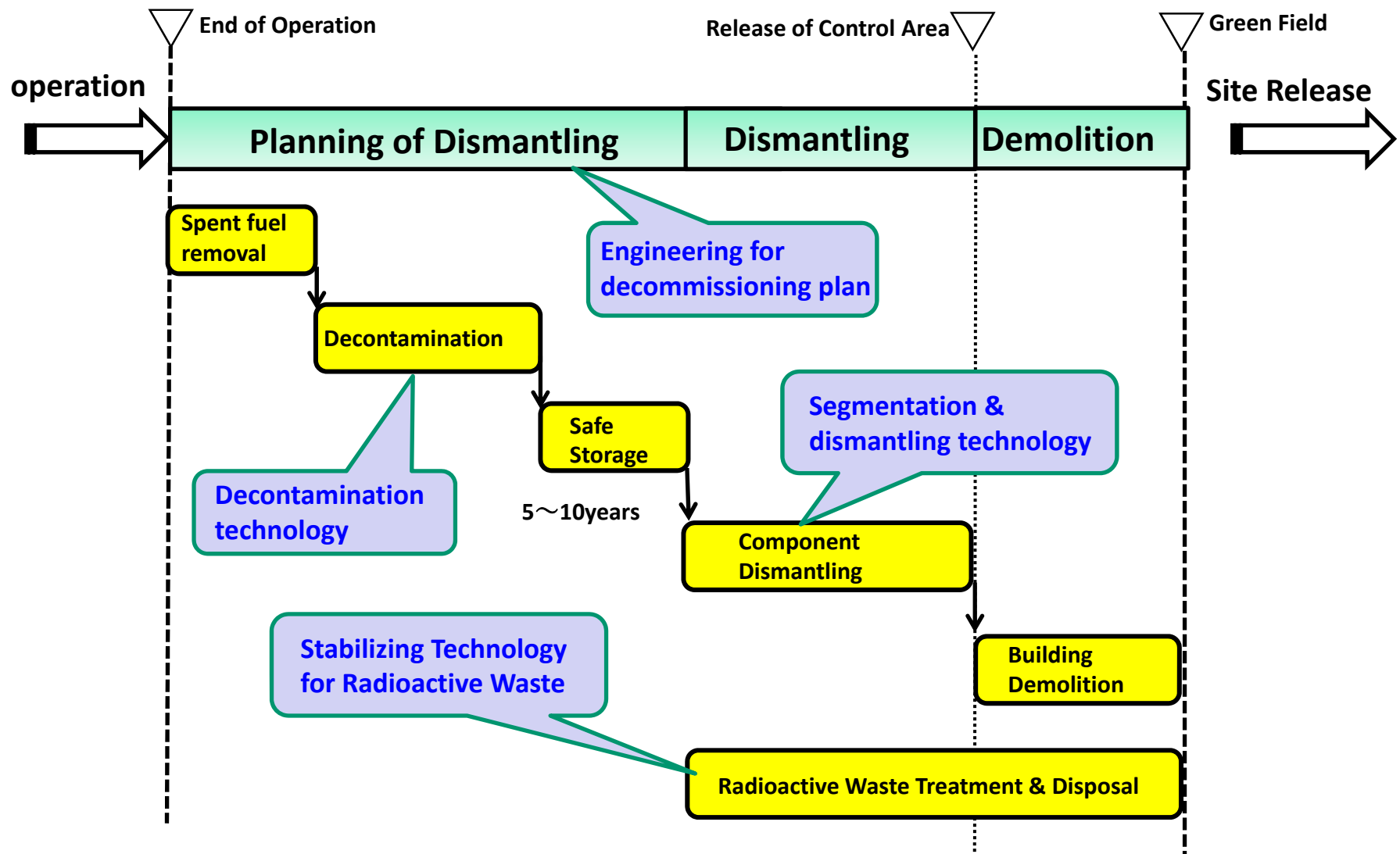
Japan has just started LWR decommissioning effort

- Three decommissioning strategies:
 - 1) Immediate Dismantling
 - 2) Deferred Dismantling(Safe Storage)
 - 3) Entombment
- Japan takes “Deferred Dismantling” strategy to reduce dose and rad-waste volume
- Currently, 9 reactors (light water and gas cooled) are under decommission, where
 - ✓ 3 reactors are under dismantling
 - ✓ 6 reactors are under licensing for decommissioning

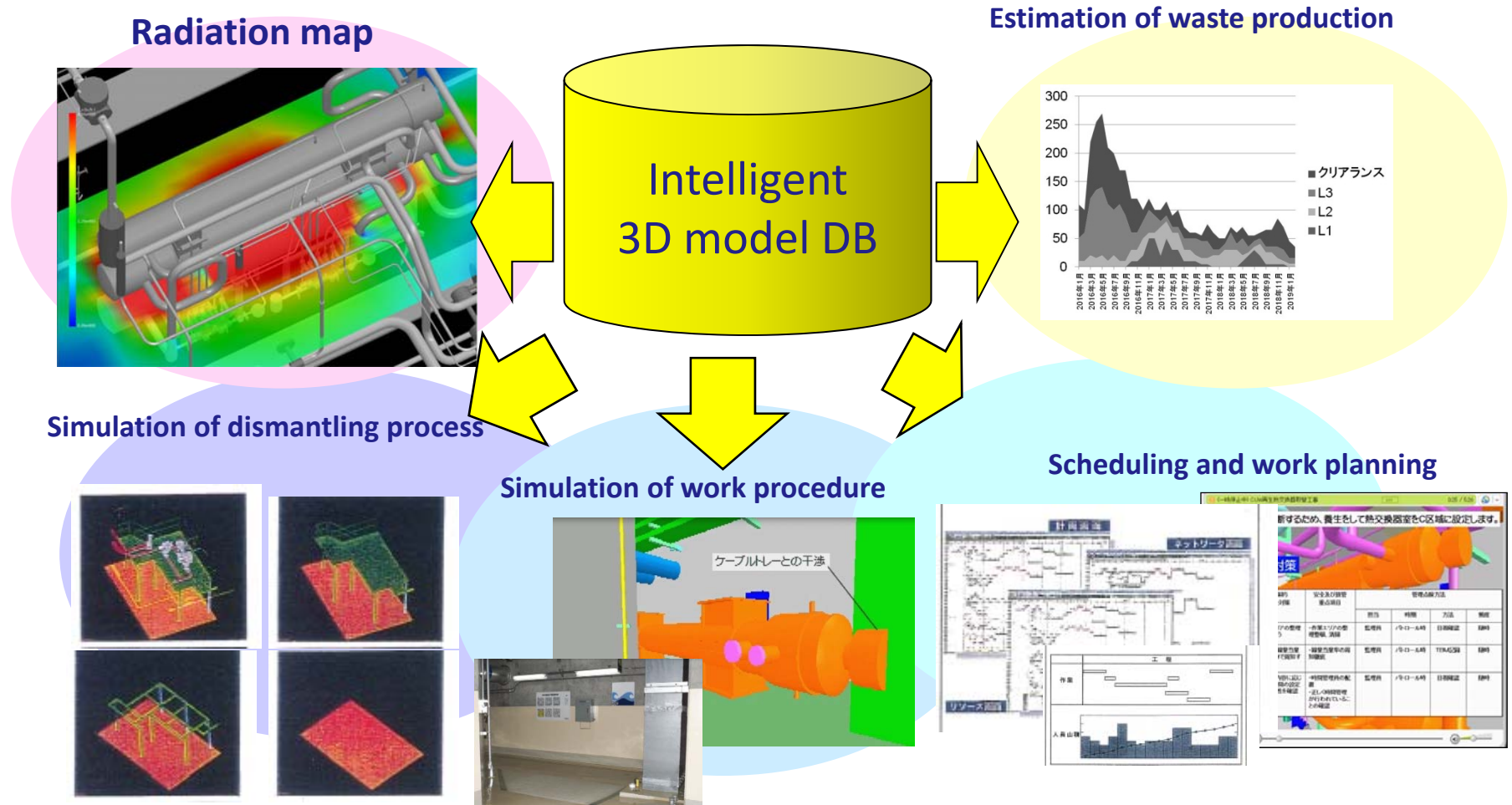


2. Schedule & Roadmap for Decommissioning

Technologies from NPP can be used in various decommissioning phases

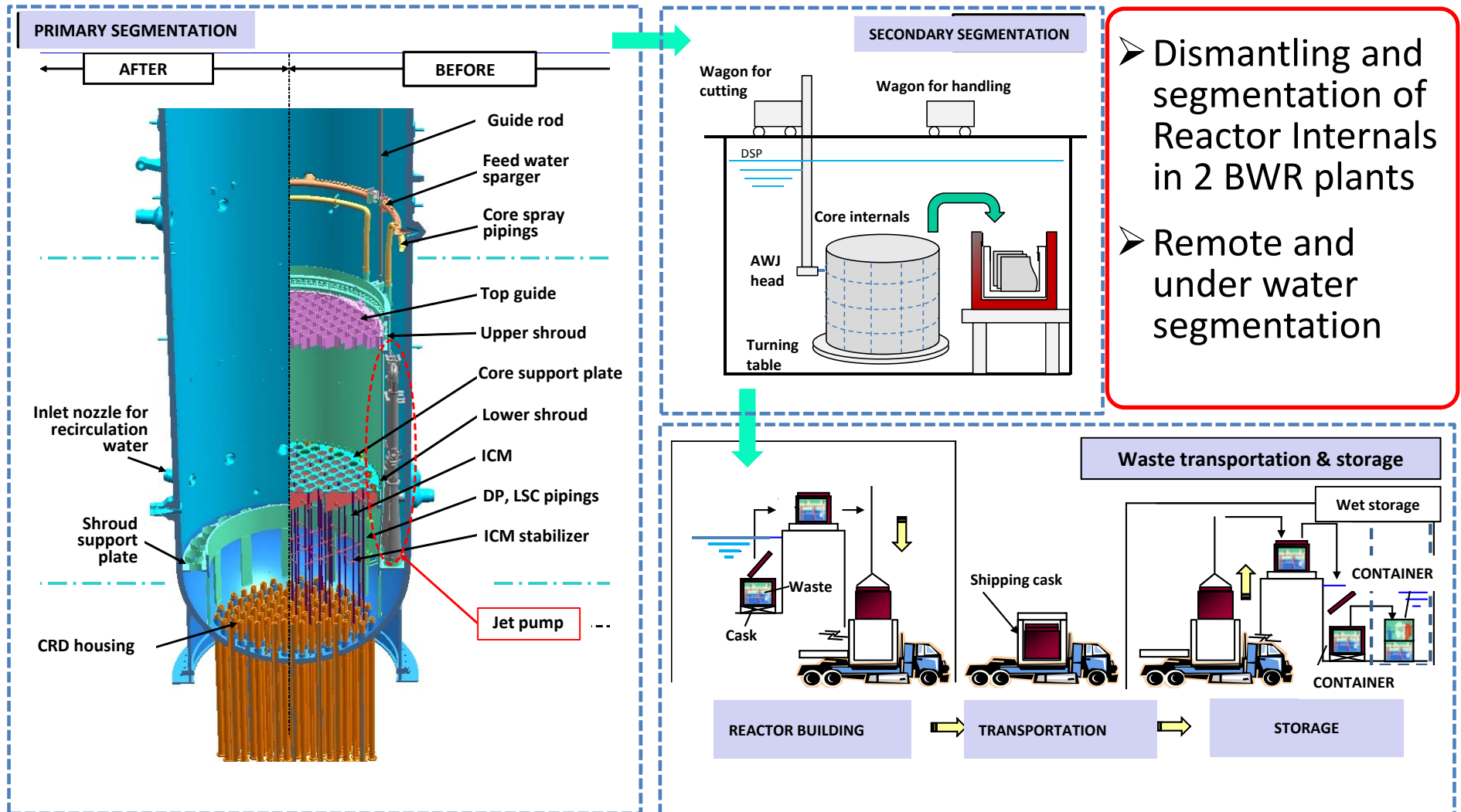


Application of “Intelligent 3D model DB” for decommissioning plan based on NPP construction experience



4. Dismantling & Segmentation Technology

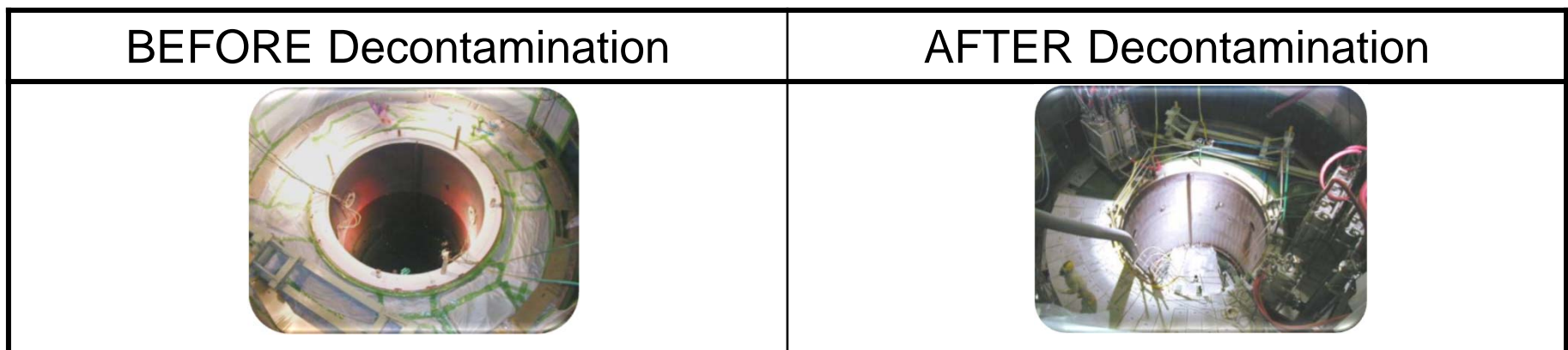
Major modification experiences to lead to reactor dismantle - Reactor Internal Replacement in 2 BWR plants -



5 . Decontamination Technology

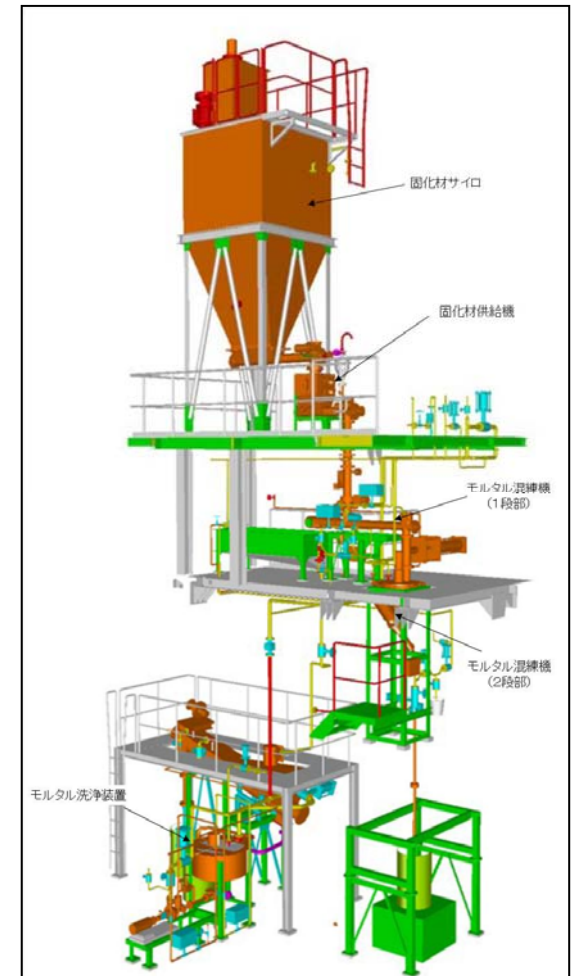
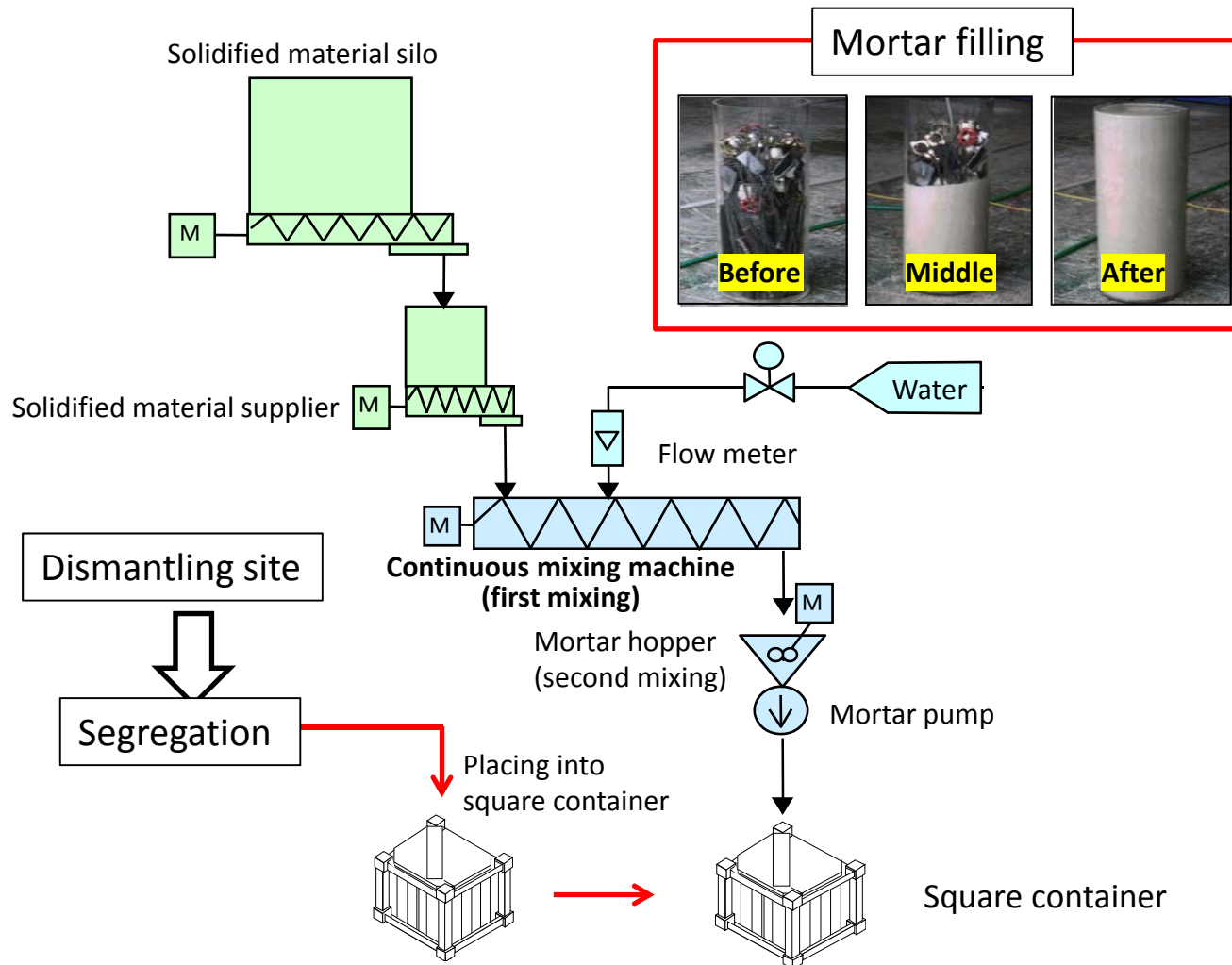
Chemical Decontamination: Viable technology to reduce dose for both existing plant services and decommissioning

- Based on the proven chemical decontamination method of “**HOP**”, HGNE has capability to apply the HOP to the PLR, CUW, RHR and Reactor internals as required.
- Target decontamination factor 20~100 is expected to achieve a target dose equivalent rate(0.05mSv/h).
- Decontamination of dismantled equipment is also planned to reduce waste disposal volume.
- Necessity of chemical decontamination application will be confirmed based on actual condition in each plant.

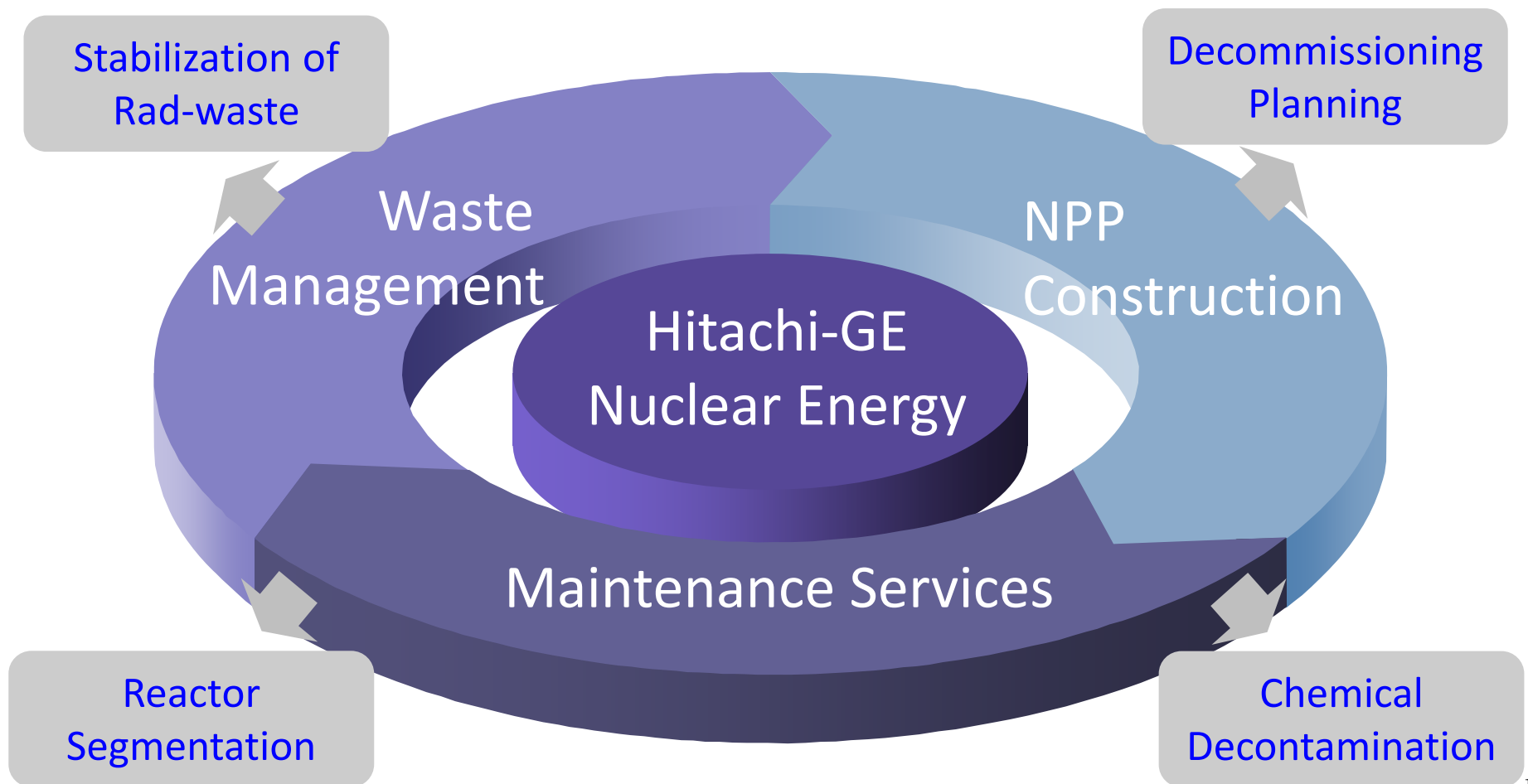


6. Stabilizing Techniques for Radioactive Waste

Experienced “Continuous mixing method” is adopted to make solidified waste packages



HGNE contributes to Japanese decommissioning projects with technologies from wide range of experiences on NPP



Thank you very much for your attention.

【Ref.】 Nuclear Power Plants in



Japan

It has been expected that nuclear decommissioning will increase due to limitation of 40years' life time.

