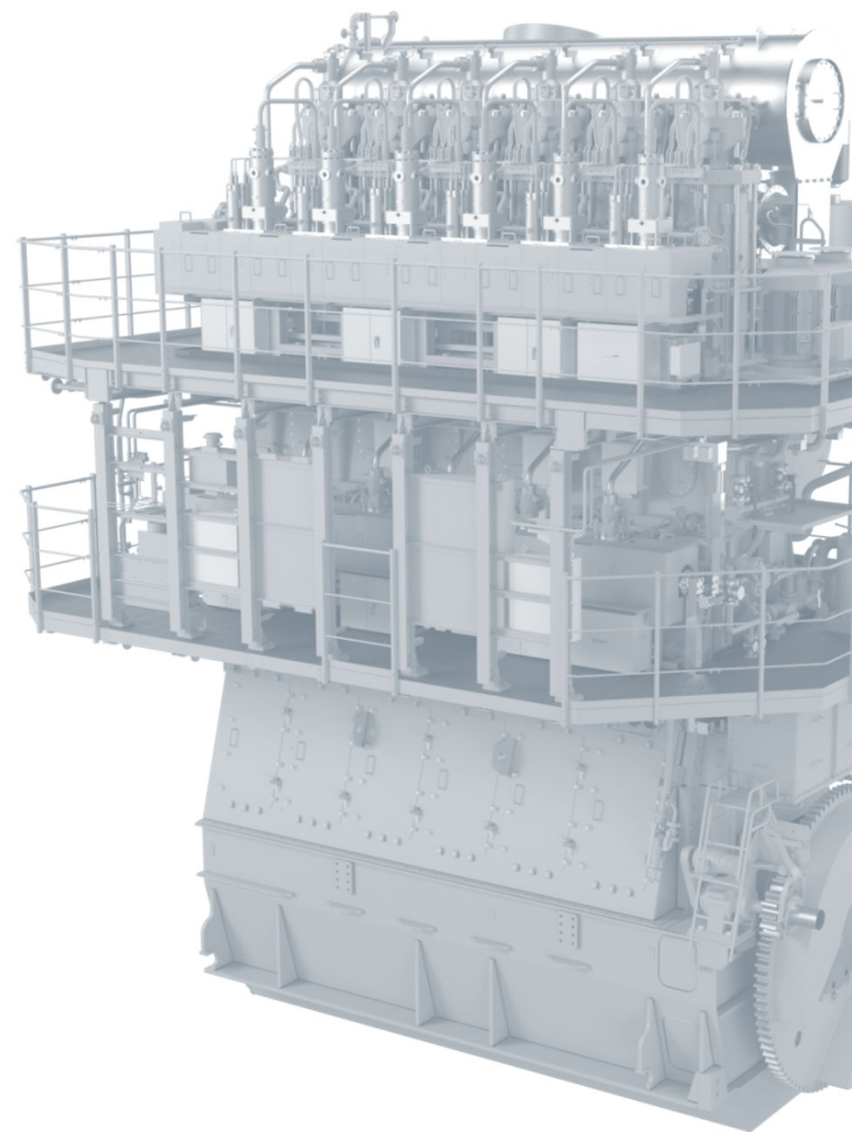


Tier3 Regulations Technology of UE Engine **LP-SCR system**

November 2020

Japan Engine Corporation



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| 3 | Actual Arrangement for Shop Test |

Design Concept

➤ Simple configuration and operation

- ✓ Switching the SCR operation does not affect the engine and turbocharger performance, but **it switch the valves only**.
- ✓ **Simple configuration:**
For engine optimized operation, only one valve is controlled.
- ✓ **Good response and stability** in the maneuvering and for load fluctuation in heavy weather

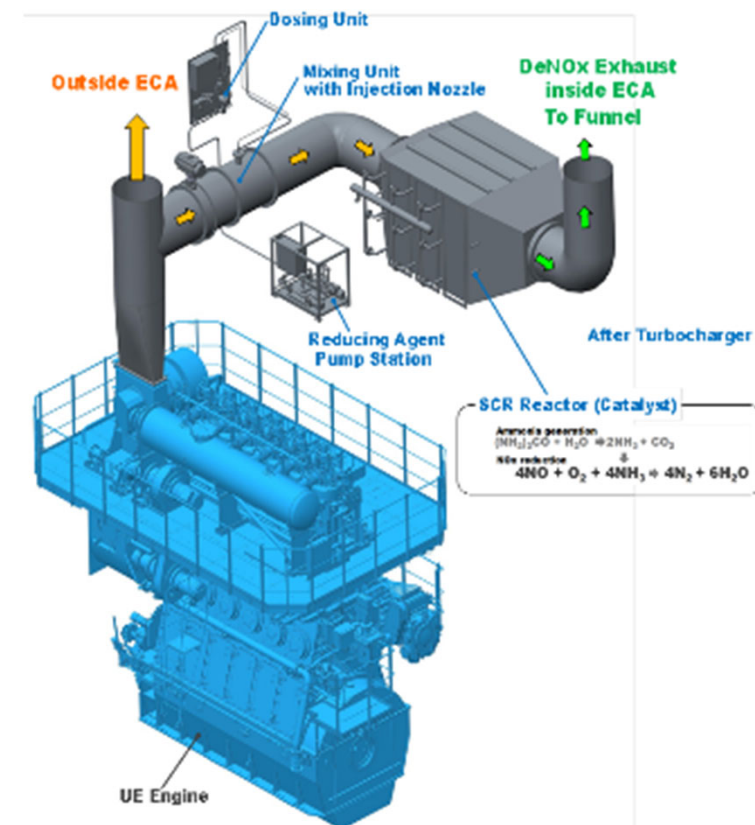
➤ Good performance and high reliability

- ✓ Minimum SFOC penalty to achieve the exh. gas temperature required for denitration
- ✓ **Kept and verified high reliability**
in fundamental and full-scale on-board tests, started from national project.

➤ Reduction of CAPEX / OPEX

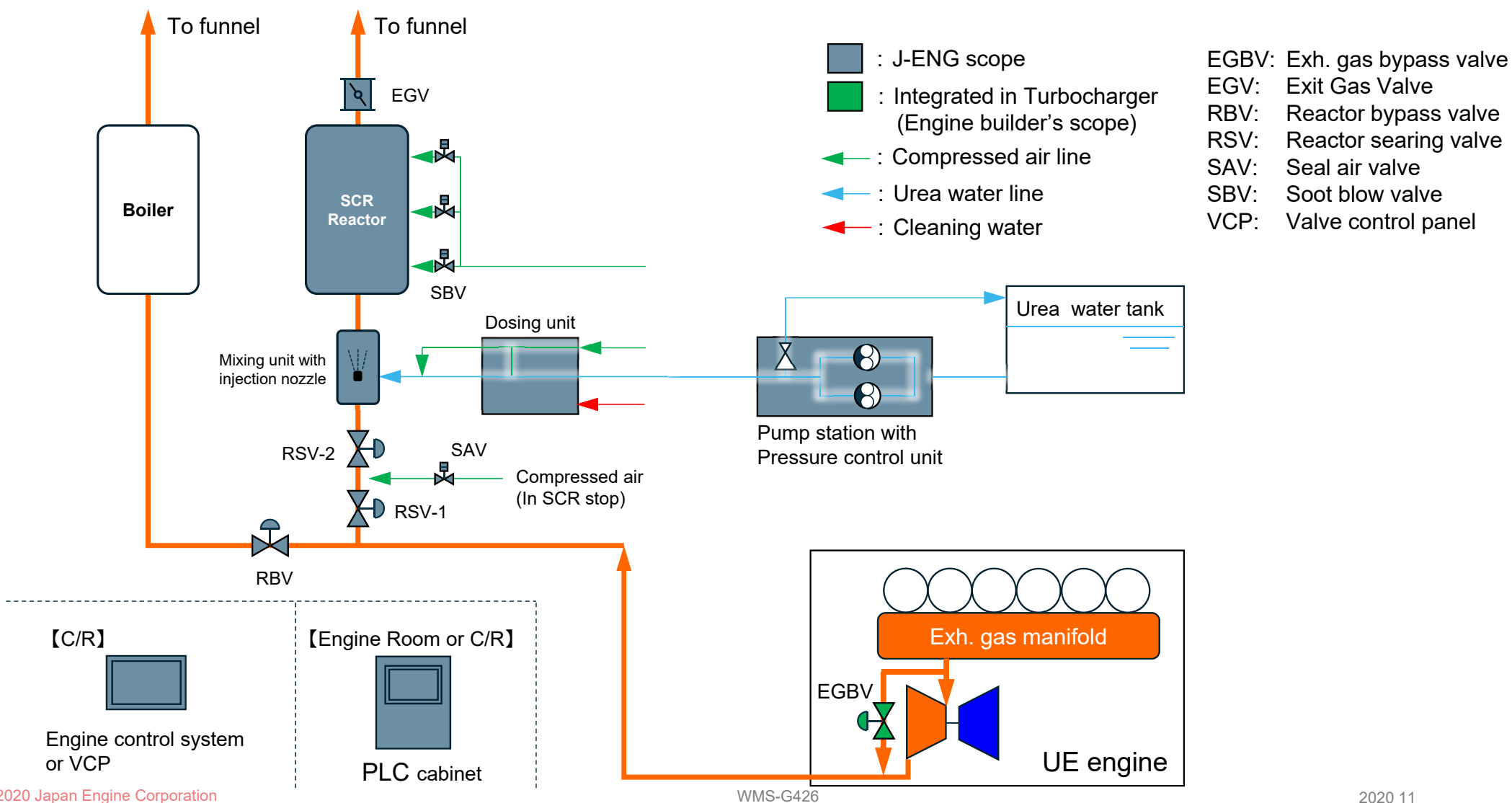
- ✓ **Low maintenance cost**, due to simple configuration
- ✓ **Contribute the low fuel cost**, due to SFOC advantage

- No black-box: SCR control system is developed by J-ENG.
- Smooth switching of SCR operation
- Optimized operation for compatible performance and reliability

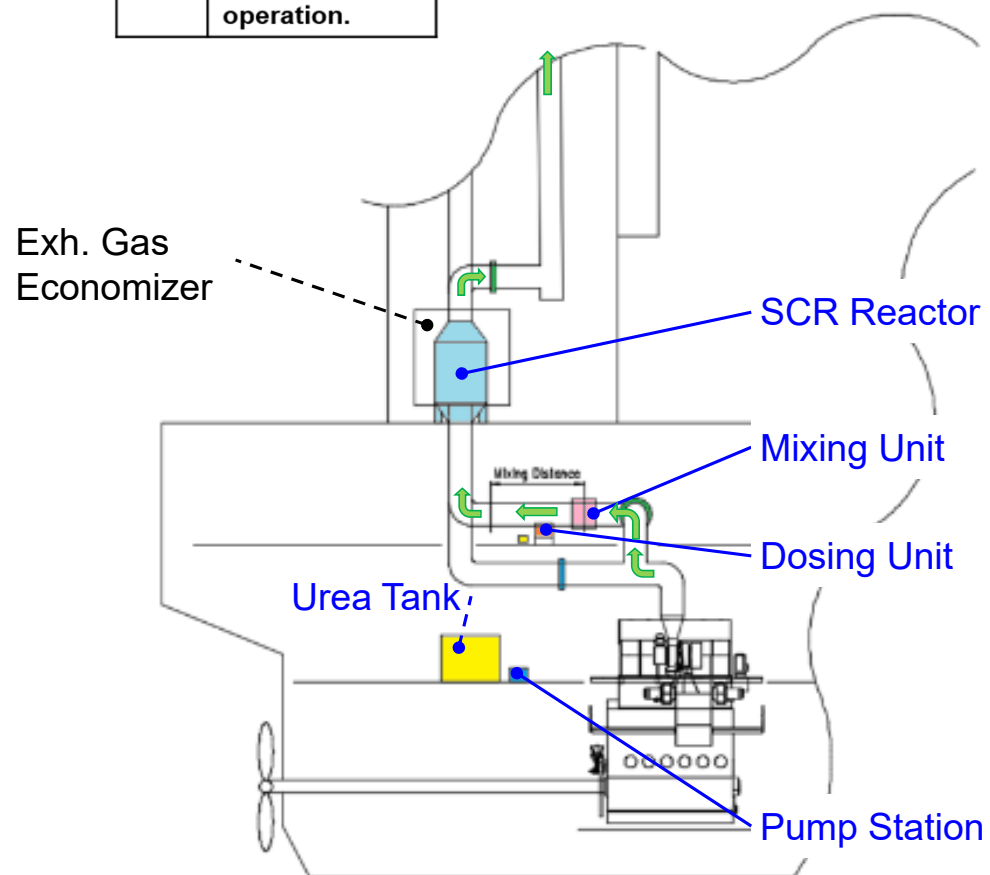
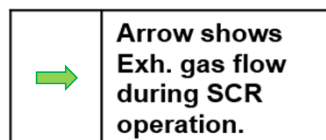


【Outline of 6UEC33LSE-C2-SCR】

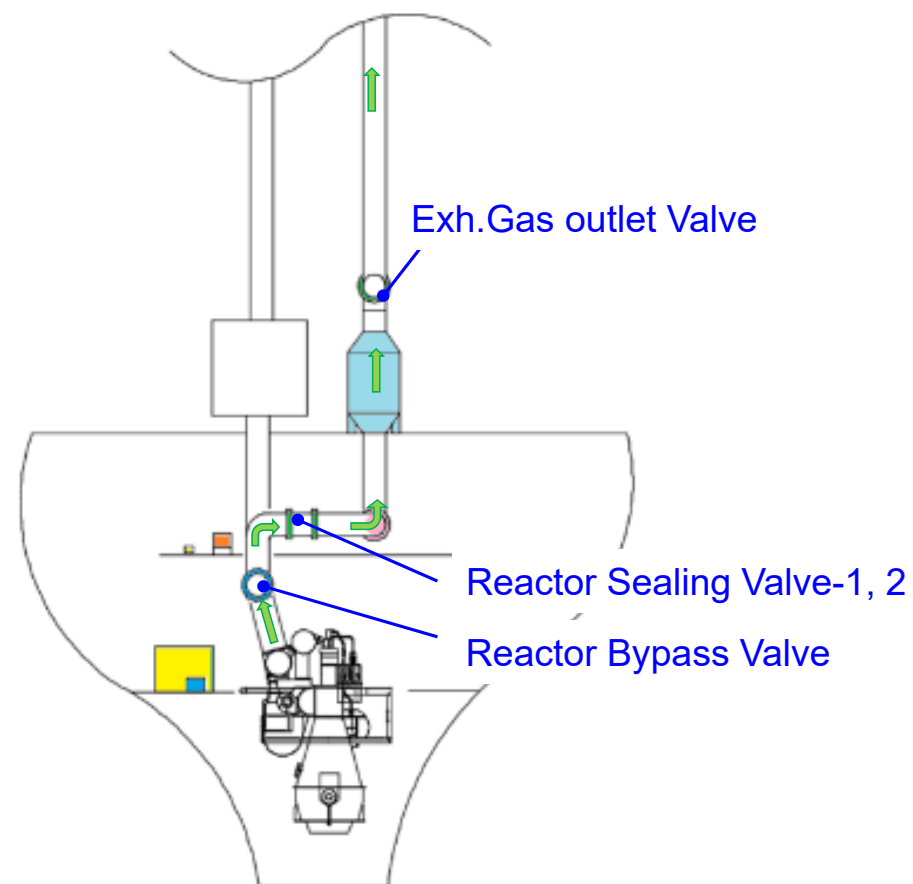
Configuration of LP-SCR System



Example Arrangement on board



View from stbd. side

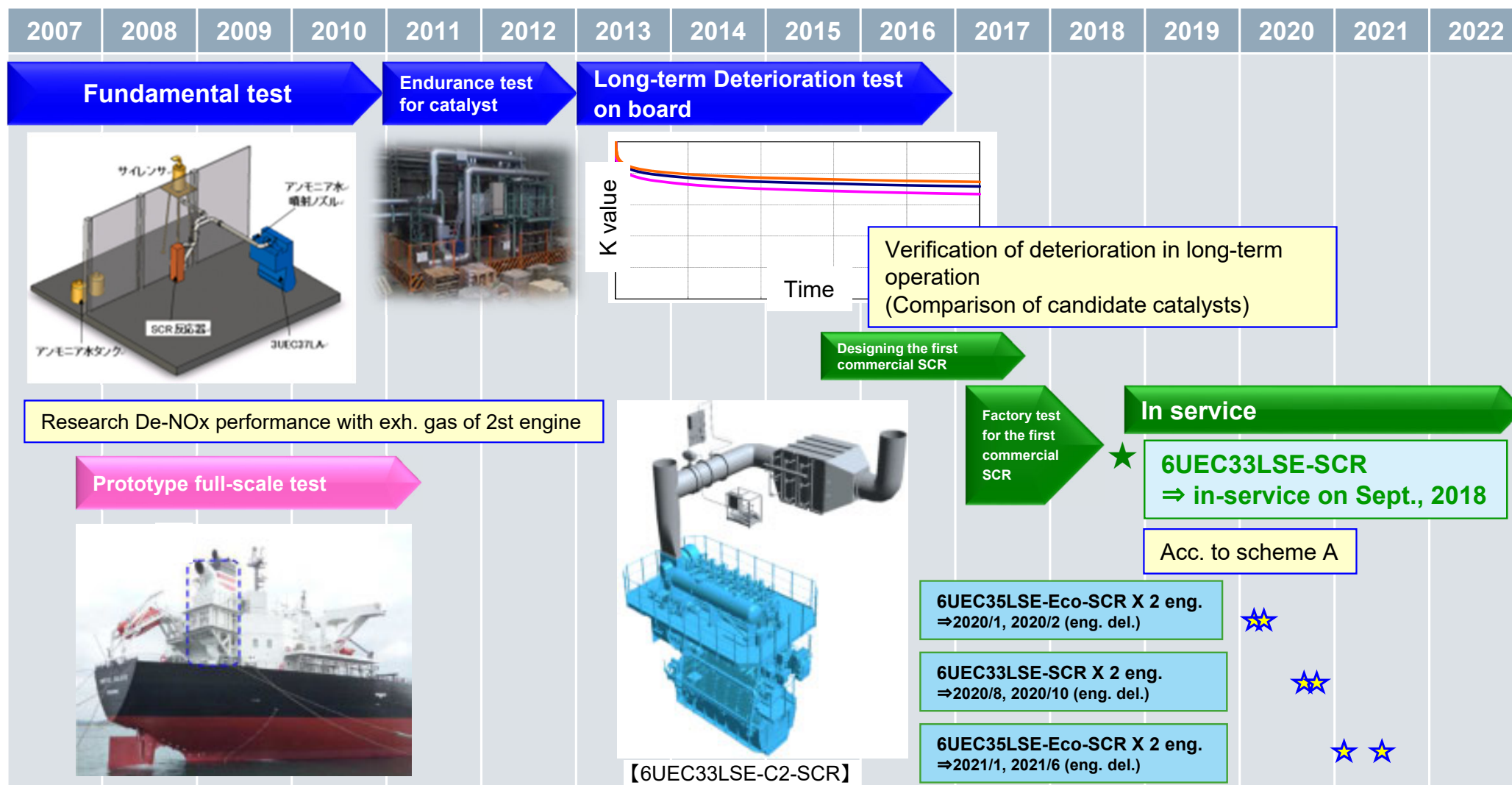


View from ore side

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Development History

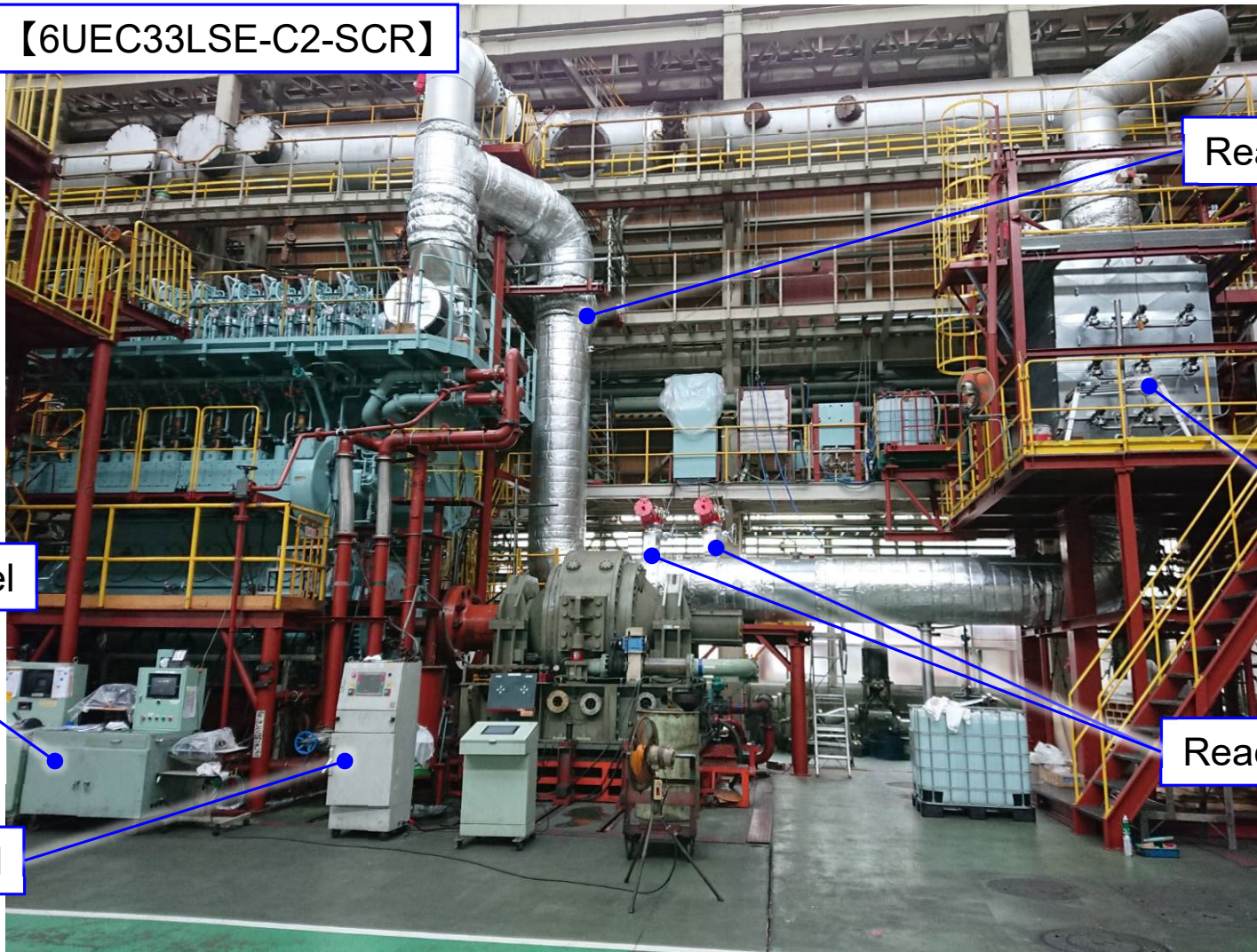


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Outline

【6UEC33LSE-C2-SCR】



Reactor Bypass Valve

SCR Reactor

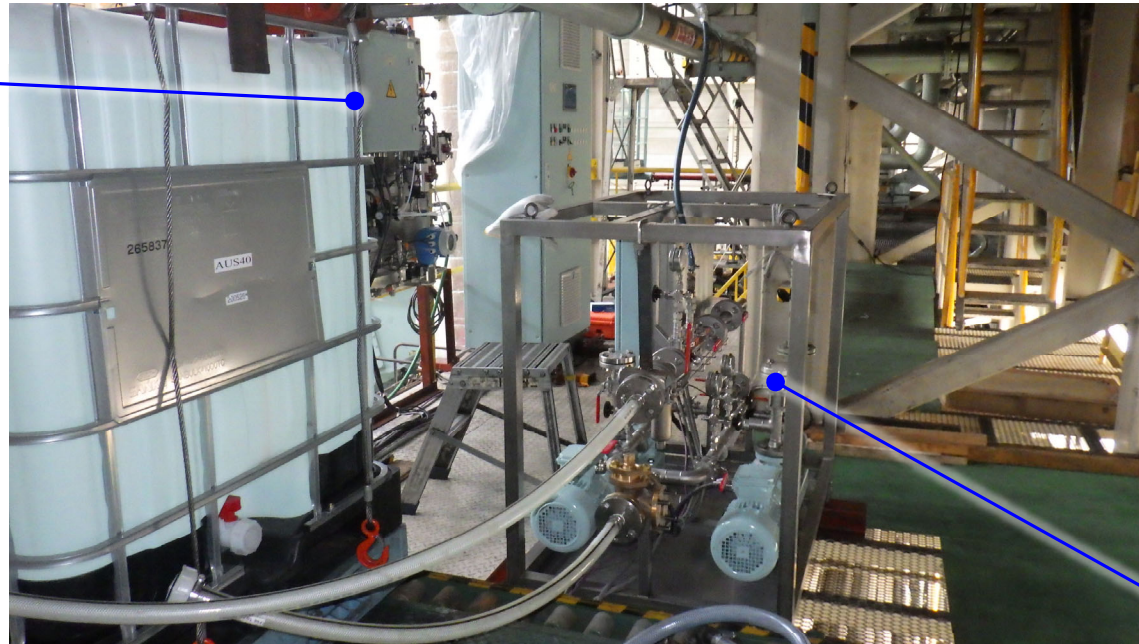
Reactor Sealing Valves

Valve Control Panel

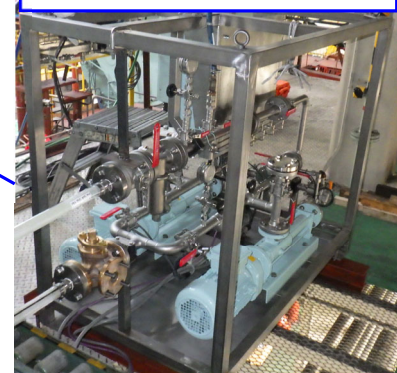
SCR Control Panel

Urea water supply system

Dosing Unit



Pump Station



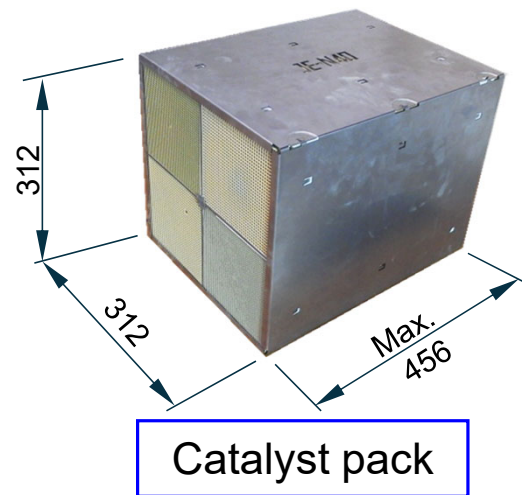
SCR Reactor

Reactor
(Vertical installation)

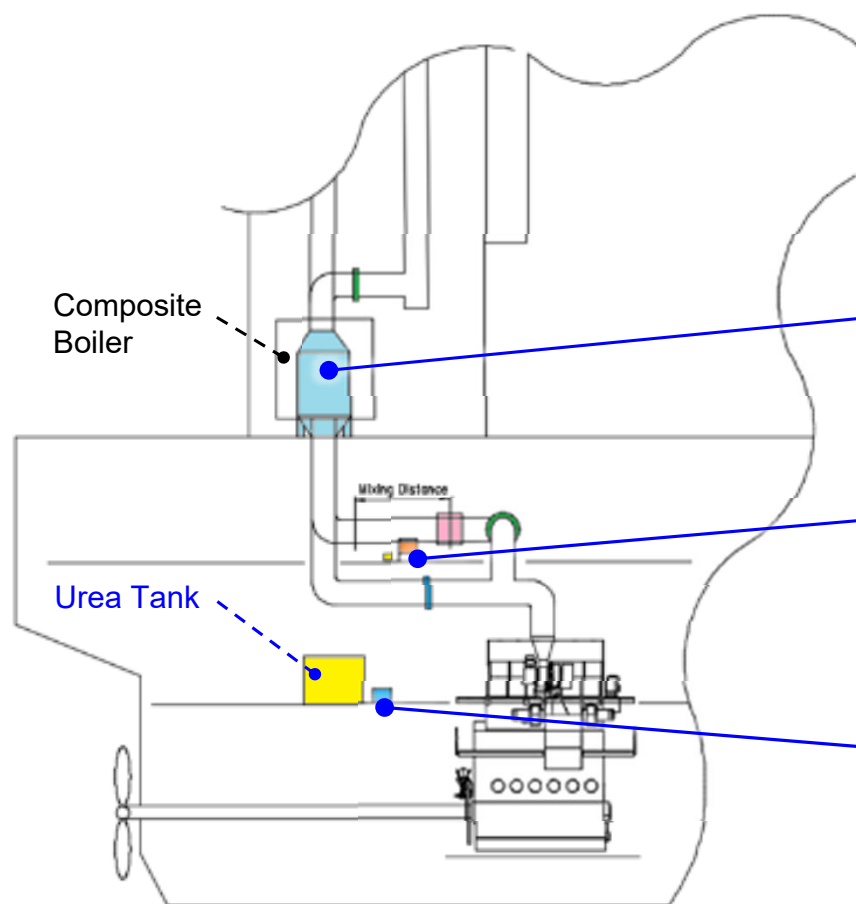


Soot Blower

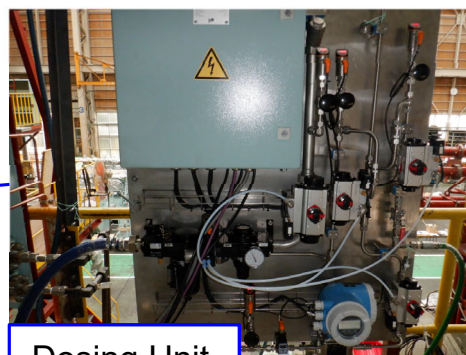
Catalysts



On-board Arrangement (1)



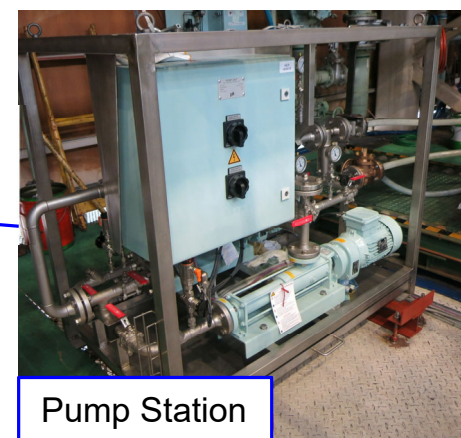
View from stbd. side



Dosing Unit

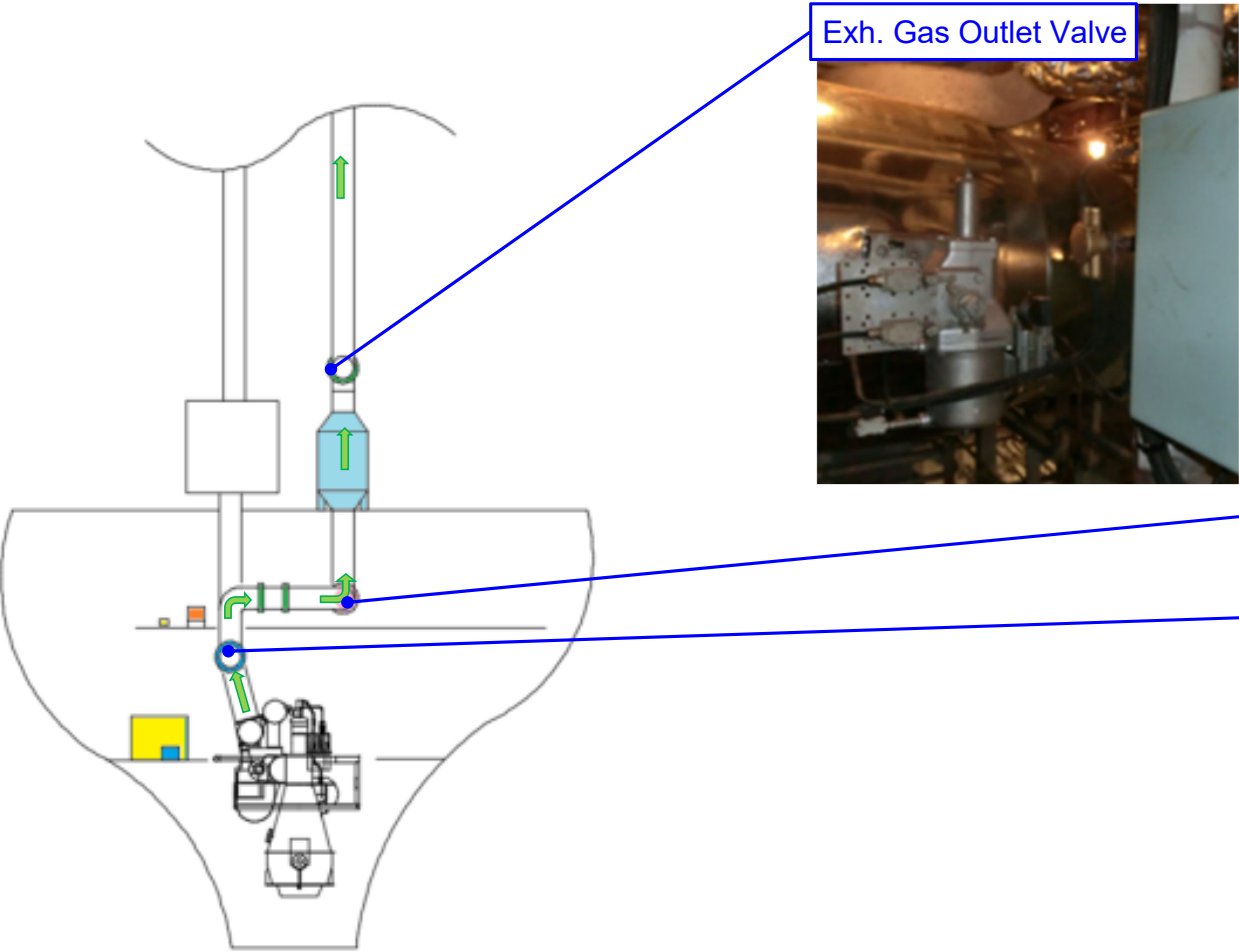


SCR Reactor

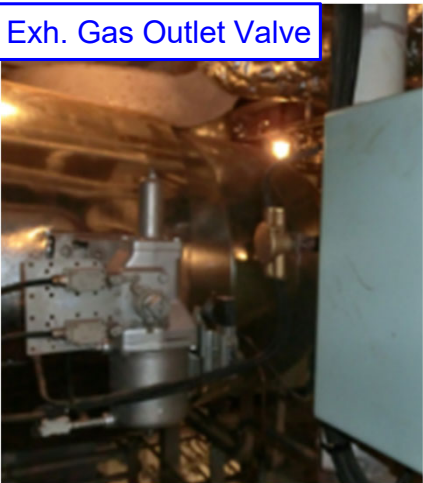


Pump Station

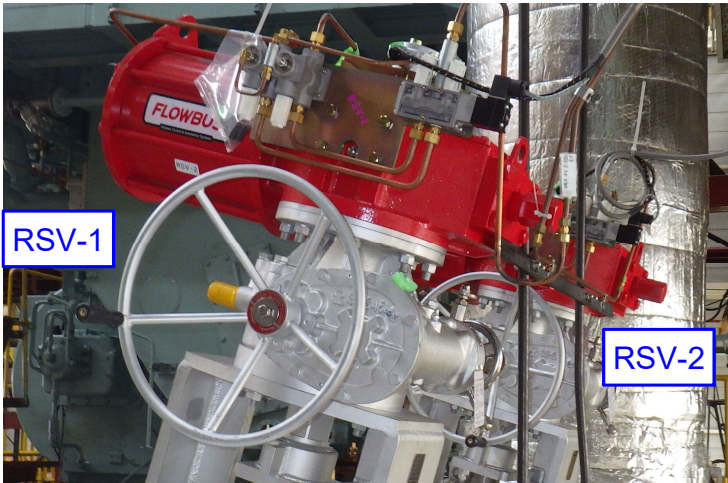
On-board Arrangement (2)



View from fore side



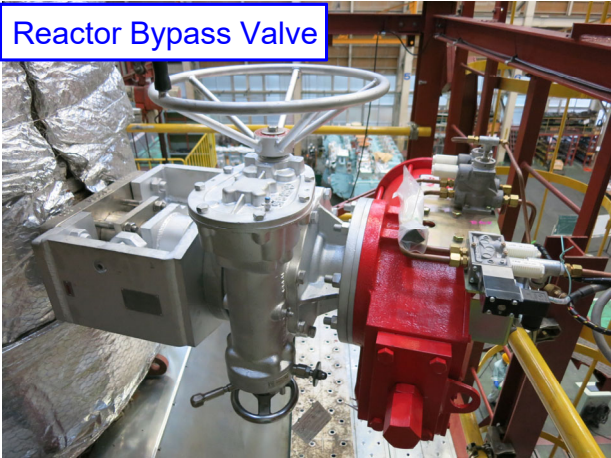
Exh. Gas Outlet Valve



RSV-1

RSV-2

Reactor Sealing Valve-1, 2



Reactor Bypass Valve

Thank you for your attention!!

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