Radiation safety management practices in 19th preventative maintenance of Kori unit 4 and future plans

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Protectio n Control

Reduction radiation dose exposure

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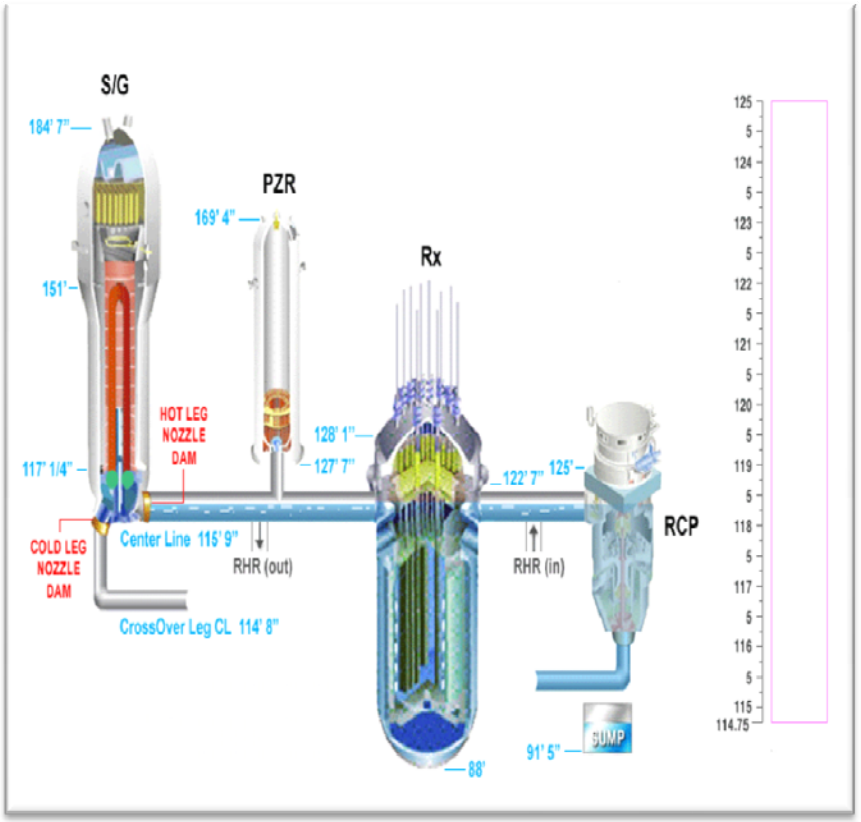
Reduction Of Radioactive Waste

Worker Management	Protection Control
Practices of process control by each water level control of S/G secondary side	Automatic decontamination device for contaminated protect wear

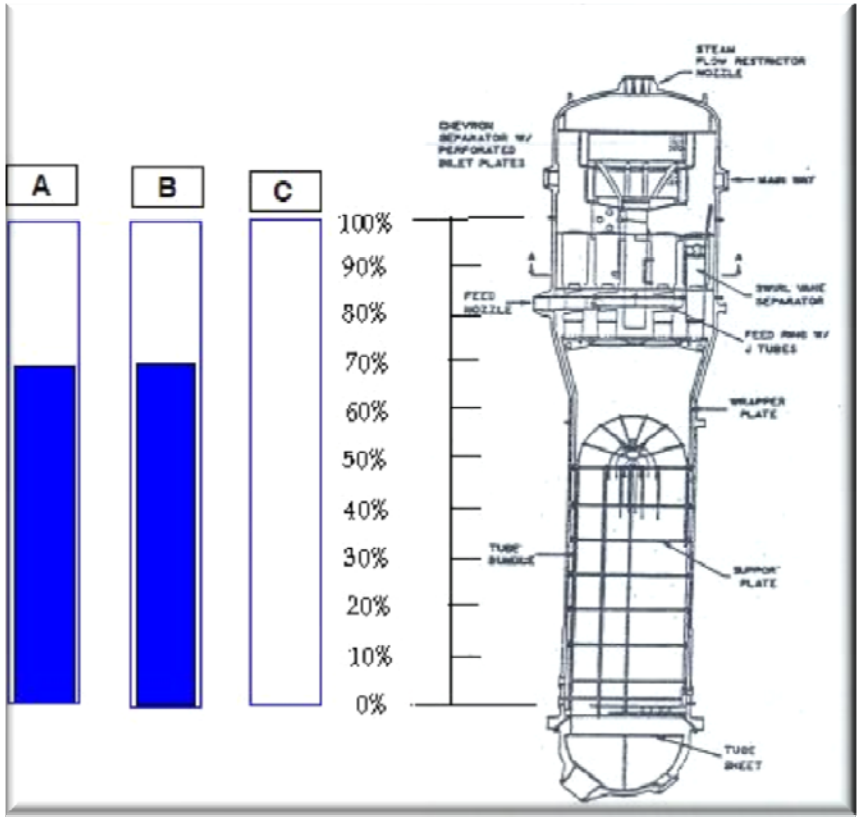
Improvement practices of Radiation Safety Management – the point

Reduction radiation dose exposure of workers by process control depend on each water level control of S/G secondary side

RCS water level



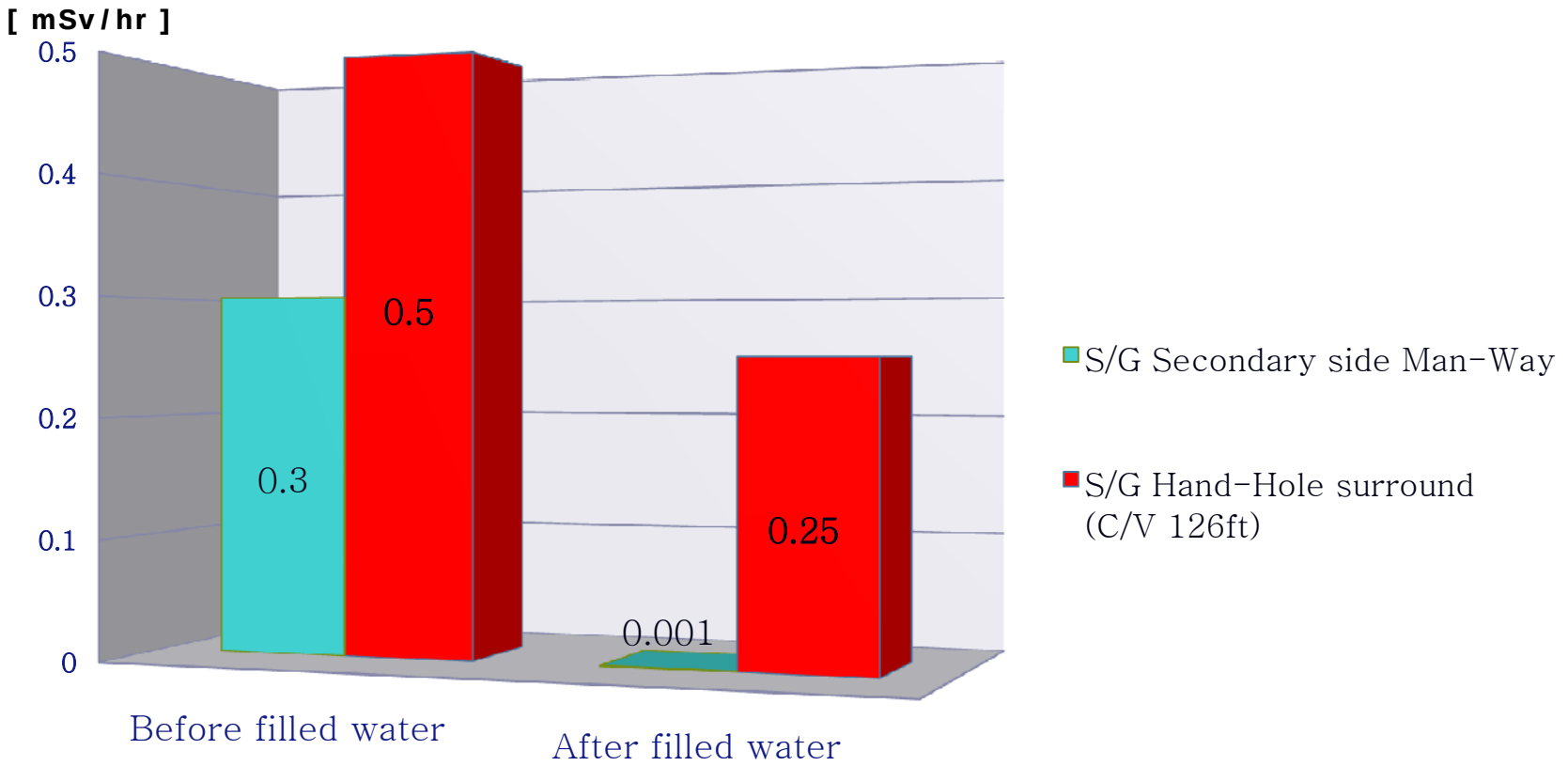
S/G secondary side water level



Improvement practices of Radiation Safety Management – the point

Reduction radiation dose exposure of workers by process control depend on each water level control of S/G secondary side

Comparison of radiation dose at main point due to water level of S/G secondary side



Improvement practices of Radiation Safety Management – the point

Reduction radiation dose exposure of workers by process control depend on each water level control of S/G secondary side

Process control by each water level – S/G moisture separator work

- Perform to the work at inside of S/G secondary side Man-Way

○ impossible to emplace of shielding

○ hot and humid of workplace → not easy to wear shield garment

- Process control for moisture separator work and Lancing/FOSAR

○ keep the water level more than 70% – space radiation dose rate↓

○ Lancing / FOSAR working with fully drained – space radiation dose rate ↑

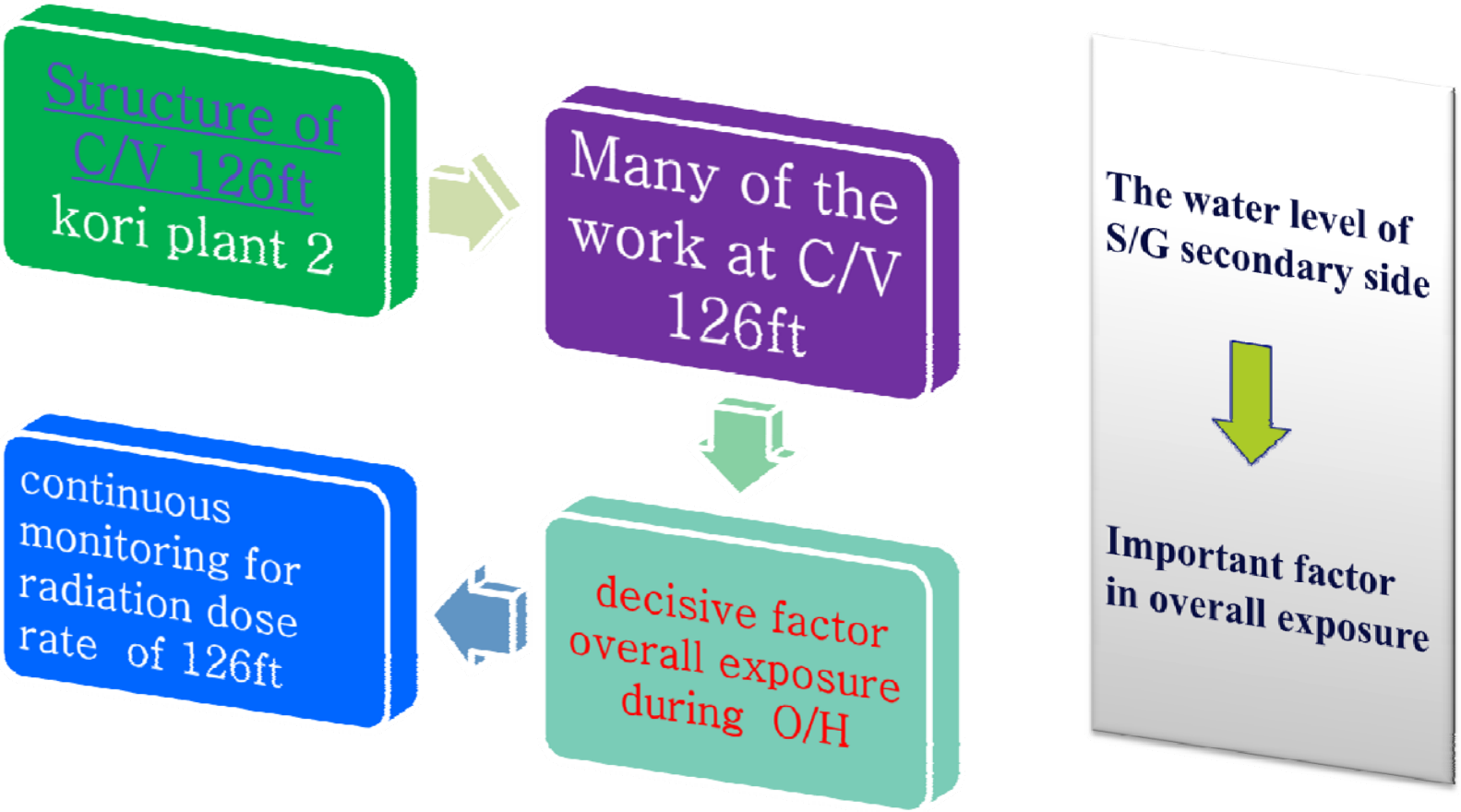
○ process control in order to not perform the working of moisture separator and Lancing / FOSAR at same time

→ keep the water level more than 70% at working of moisture separator

Improvement practices of Radiation Safety Management – the point

Reduction radiation dose exposure of workers by process control depend on each water level control of S/G secondary side

Process control for each water level – 126ft



Improvement practices of Radiation Safety Management – the point

Reduction radiation dose exposure of workers by process control depend on each water level control of S/G secondary side

Process by each water level – 126ft

S/G 'A'

Lancing & FOSAR working With complete drainage → *Complete Lancing & FOSAR / conform fill water* → *Orderly progression other working (ISI, RCP, snubber, valve)* → *complete The working*

S/G 'B'

Orderly progression other working (ISI, RCP, snubber, valve) → *After drainage S/G Lancing & FOSAR* → *Complete Lancing & FOSAR / conform fill water* → *Orderly progression other working* → *complete The working*

S/G 'C'

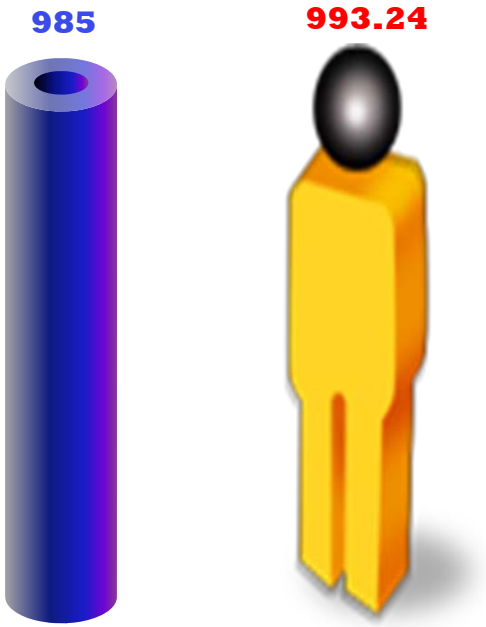
Orderly progression other working (ISI, RCP, snubber, valve) → *After drainage S/G Lancing & FOSAR* → *complete Lancing & FOSAR / conform fill water* → *complete The working*

Improvement practices of Radiation Safety Management – conclusion

Reduction radiation dose exposure of workers by process control depend on each water level control of S/G secondary side

4R 18 O/H

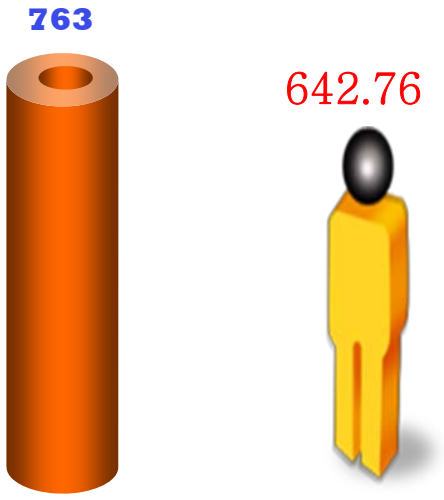
단위[man-mSv]



Exceeded 8.24 man-mSv

4R 19 O/H

단위[man-mSv]



Reduction 120.24man-mSv

Future plan for radiation safety management

Automatic decontamination device for contaminated protect wear

Automatic decontamination device for contaminated protect wear – instroduction

summary

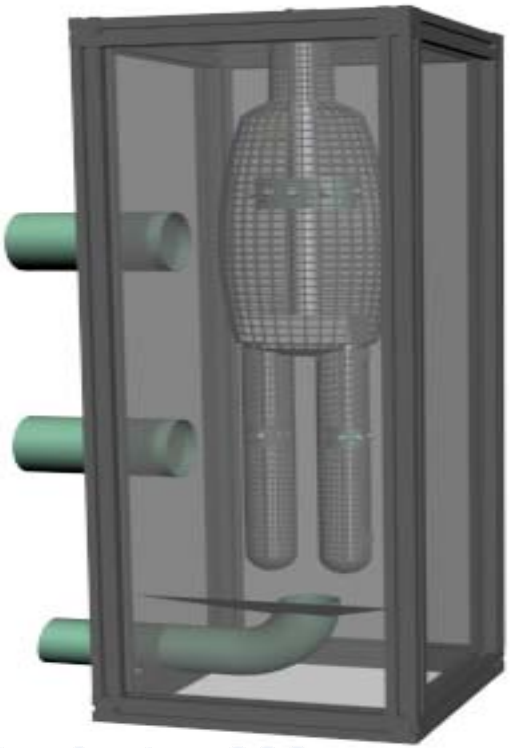
- current laundry system depend on clean water only without detergent in order to eco-friendly

- laundry system without detergent
  - Reduction of effect decontamination
  - Operational difficulties
  - Increase in liquid radio active waste
  - Increase in Solid radio active waste

issues

- **increased activities of re-laundering and drying**
- **Increase in liquid radioactive waste**
- **Increase in non-integrity of laundry facilities**
- **Increase in concentration of particulate fine dust**
- **Lack of systematic management**

Automatic decontamination device for contaminated protect wear – point



Vertical : 200cm
Width : 120 * 130cm
Power : 220V
Air supply : air service line
spec : mash type mannequin / air injection nozzle/ control box/air outlet

Development of device

Fabrication of minute mash style mannequin

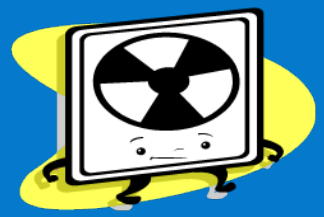
cover protect wear

- fabrication of closed structure
- device for connected with hood
- stereoscopic rotation air injection by dual pressure

Development of

automatic system

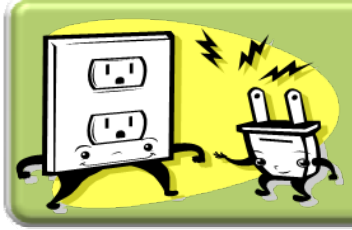
Expected effection



Reduction of radioactive waste

★ reduction of liquid & solid radioactive waste

- reduce processing cost
- reduction of drums



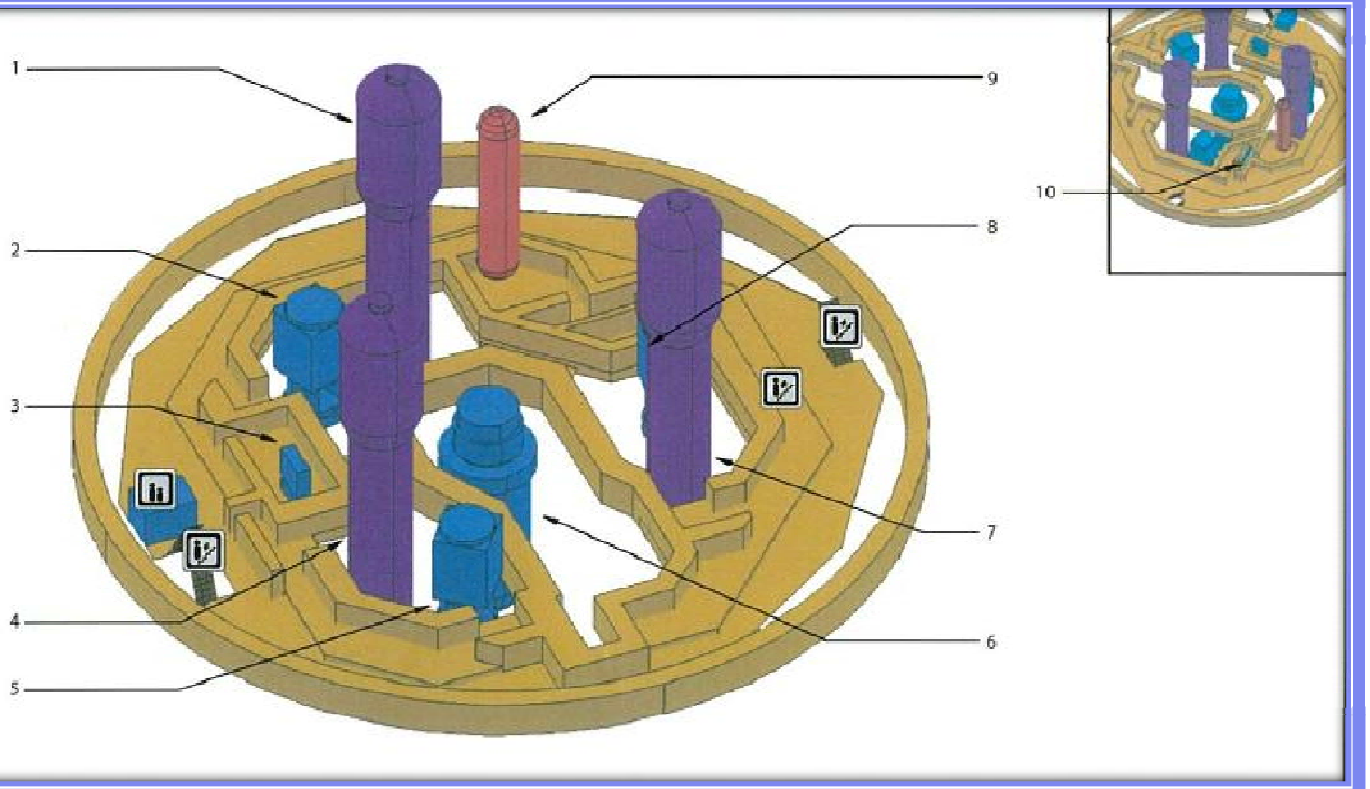
Reduction of the number of re-washing and drying

Solution of increase in concentration of fine particulate dust problem

Systematic management for contaminated protect wear

Structure of C/V 126ft_ kori plant 2

번호	기기번호	명 칭
1	BB-B002	Steam Generator B
2	BB-P002	RCP B
3	-	Seal Table
4	BB-B003	Steam Generator C
5	BB-P003	RCP C
6	BB-T001	Reactor
7	BB-B001	Steam Generator A
8	BB-P001	RCP A
9	BB-T002	Pressurizer
10	BG-X002	Excess Letdown Heat Exchanger



Thank You !

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