<Reference>
November 15, 2013
Tokyo Electric Power Company

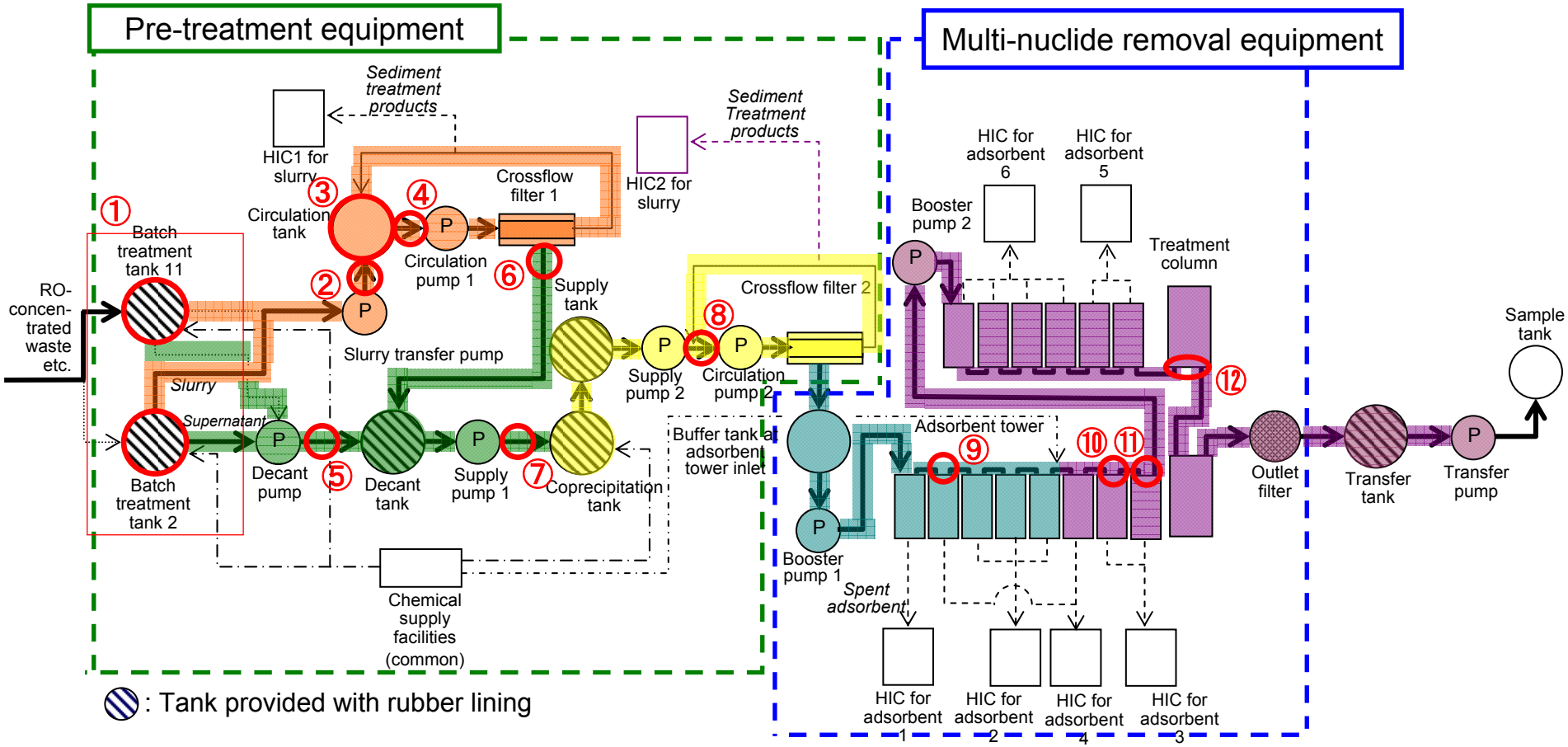
Results for the Effectiveness Confirmation of Corrosion Prevention at the System C in the Multi-Nuclide Removal Equipment

Tokyo Electric Power Company

TEPCO 東京電力

Inspection points of corrosion prevention effectiveness at System C

- Inspection points of corrosion prevention effectiveness (○) are described below.



- Main inspection items
  - Batch treatment tanks: Whether there is a significant defect/exfoliation with linings, or not.
  - Weld line and flange surface: How much corrosion a sacrificial positive electrode has or whether there is a significant corrosion, or not

Result for corrosion prevention effectiveness at System C

Inspection point			Result
①	Batch treatment tank (1C and 2C)	・Rubber lining (Inner inspection)	**No abnormality** ・ No significant damage such as defect and exfoliation with the lining
②	Slurry transfer pump outlet pipe	・Flange surface ・Pipe weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
③	Circulation tank	・Tank weld line (UT confirmation)	**No abnormality** ・No significant echo detected
④	Circulation pump 1 inlet pipe	・Flange surface ・Pipe weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
⑤	Decant pump outlet pipe	・Flange surface ・Pipe weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
⑥	Back-pulse pot 1 outlet pipe	・Flange surface ・Pipe weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode

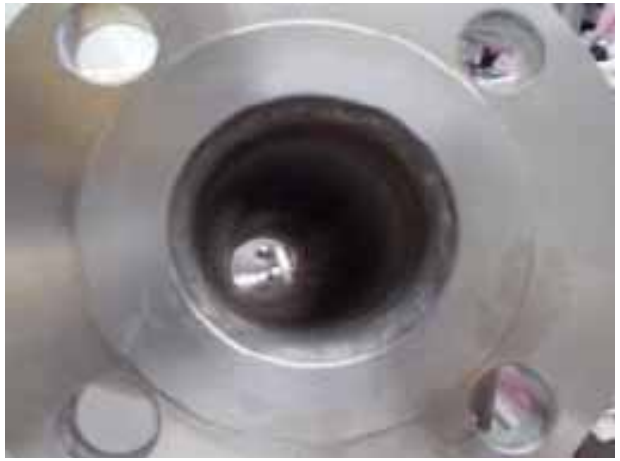
Result for corrosion prevention effectiveness at System C

Inspection point			Result
⑦	Supply pump 1 Outlet pipe	・Flange surface ・Pipe weld line	**No abnormality (a remark described below)** ・corrosion-like minute pits on Flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
⑧	Supply pump 2 Outlet pipe	・Flange surface ・Pipe weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
⑨	Adsorbent tower 2	・Inspection hole (closing flange) ・Adsorbent tower inner weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
⑩	Adsorbent tower 7	・Inspection hole (closing flange) ・Adsorbent tower inner weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
⑪	Adsorbent tower 8	・Inspection hole (closing flange) ・Adsorbent tower inner weld line	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode
⑫	Treatment column 1	・Vent pipe flange	**No abnormality** ・No corrosion on flange surface ・No significant abrasion in gasket-type sacrificial positive electrode

Result for corrosion prevention effectiveness at System C

① Batch treatment tank 2C

← No significant damage such as defect and exfoliation



② Slurry transfer pump outlet pipe flange

← No corrosion on the flange sheet surface

② Slurry transfer pump outlet pipe gasket-type sacrificial positive electrode

← A slight abrasion in gasket-type sacrificial positive electrode

(No influence on the sheet function)

⑦ Supply pump 1 outlet pipe flange

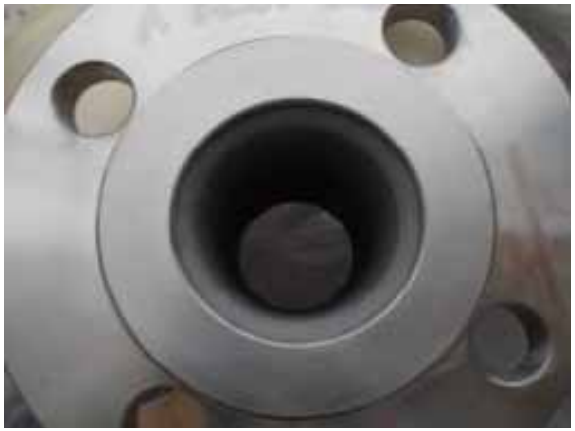
← Three minute pits, which seem corrosion, on the flange-sheet surface

Result for corrosion prevention effectiveness at System C

⑦ Supply pump 1 outlet pipe
Gasket-type sacrificial positive electrode

←
A slight abrasion in gasket-type sacrificial positive electrode

(No influence on the sheet function)

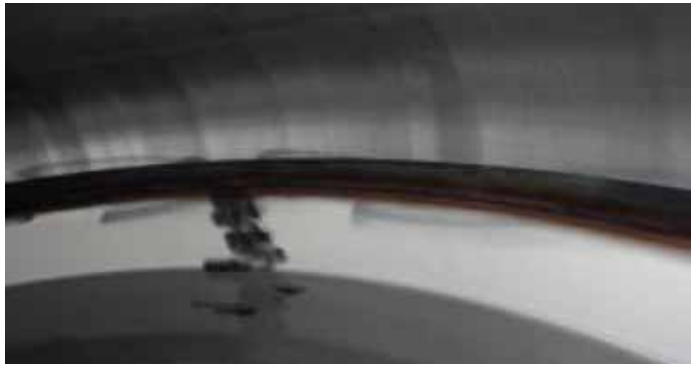


⑧ Supply pump 2 outlet pipe flange

←
No corrosion on the flange-sheet surface

⑨ Adsorbent tower 2C inspection hole

←
No corrosion on flange-sheet surface



⑨ Adsorbent tower 2C weld line

←
No corrosion along the weld line

Result for corrosion prevention effectiveness at System C

←
No corrosion on flange-sheet surface

(With paste-like sacrificial positive electrodes applied)

⑩Adsorbent tower 7C inspection hole

←
No corrosion along the weld line

⑩Adsorbent tower 7C inner weld line

←
No corrosion on the flange

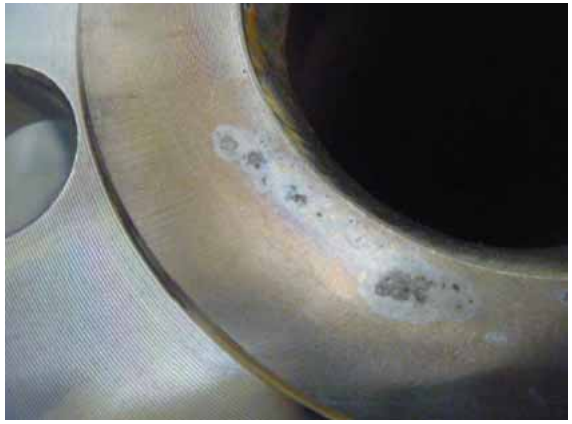
⑫Treatment column vent pipe flange

←
A slight abrasion in gasket-type sacrificial positive electrode

(No influence on the sheet function)

⑫Treatment column vent pipe gasket-type sacrificial positive electrode

Corrosion at System A (Reference)



Slurry transfer pump outlet pipe (enlarged)
with crevice corrosion on flange-sheet surface

Circulation tank return pipe nozzle
with crevice corrosion on flange-sheet surface

Batch treatment tank 2A decant nozzle
with crevice corrosion on flange-sheet surface

Supply pump 1A outlet pipe
with crevice corrosion on flange-sheet surface

Summary

- Comparing the inspection outcome at System C with corrosion prevention to the ones at System A and B without former corrosion prevention, we found that generation of corrosion was definitely restrained and that our corrosion prevention was effective.
- Although we found crevice corrosion in a part of flange sheet surface, it has no influence on sealing. Corrosion prevention prevents definitely the progress of corrosion.
- We continue the inspection on a regular basis, and will extend our knowledge
- Based on the confirmation the effectiveness of the corrosion prevention through this inspection, the inspection period might be re-examined.

Hot test schedule

- System A: Currently in operation for treatment; Treatment will be stopped temporarily in the End November for confirmation of corrosion prevention effectiveness
- System B: Batch treatment tanks is currently being repaired ; and treatment operation is scheduled to restart on November 21*. *Subject to change depending on work progress.
- System C: Confirmed corrosion prevention effectiveness, treatment will restart on November 18.