

Comparison of the sum of the ratios to regulatory concentrations limits at ALPS inlet/outlet

December 7, 2022



Tokyo Electric Power Company Holdings, Inc.

1. Overview

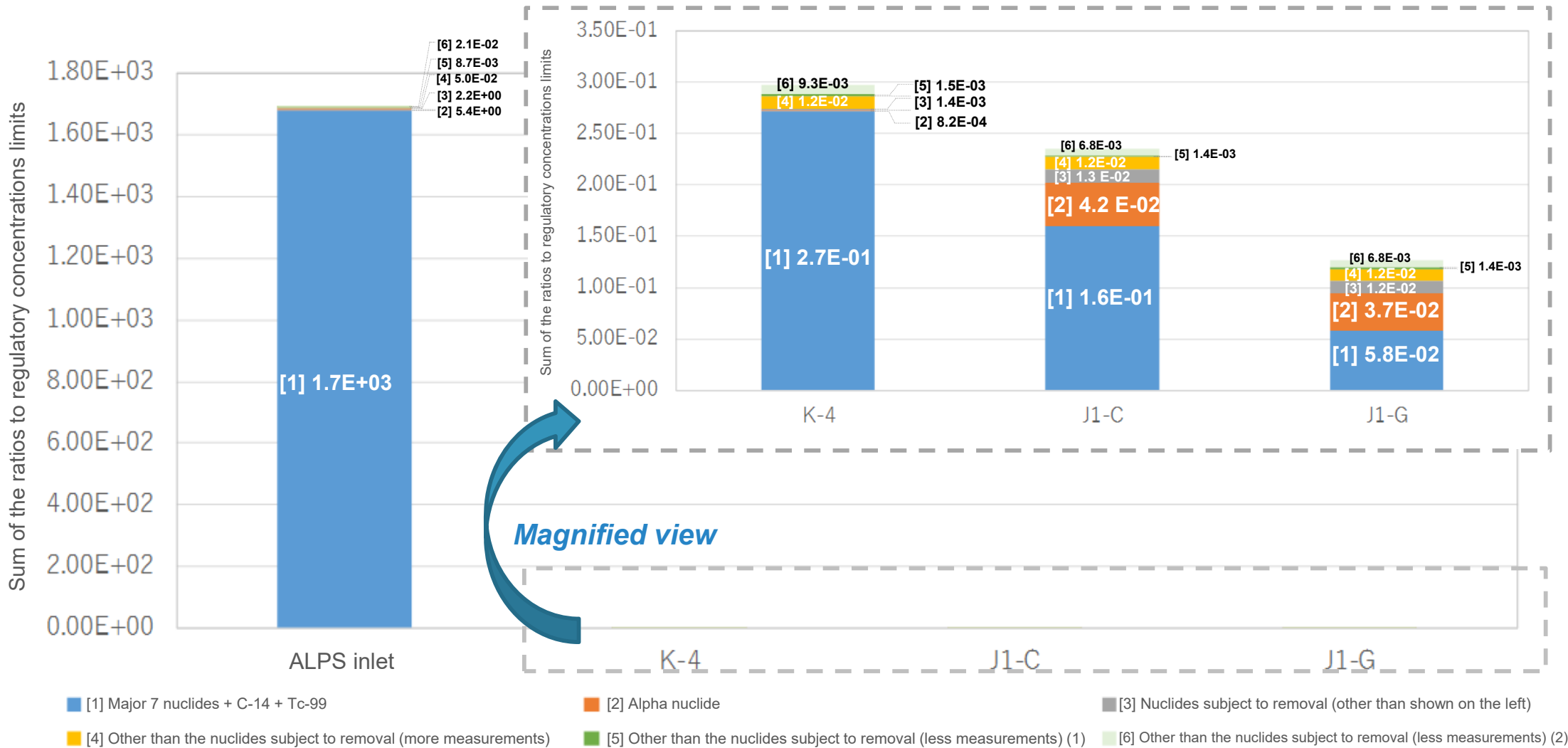
- For the 35 nuclides of the nuclides to be measured/assessed and monitored, the analytical results at the ALPS inlet (FY 2021) and ALPS outlet (K4, J1-C, J1-G) are reported based on the results of checking the sum of the ratios to regulatory concentrations limits in the classification in the table below.

| Classification | Specific nuclides | ALPS inlet | ALPS outlet | | | | | |
|---|--|--|---|----------------------|---------|---------|---------|---------|
| | | | K-4 | J1-C | J1-G | | | |
| Nuclides mainly detected in ALPS treated water | 7 major nuclides (including radioactive equilibrium Y-90, Te-125 m), C-14, Tc-99 | 1.7E+03 | 2.7E-01 | 1.6E-01 | 5.8E-02 | | | |
| Nuclides rarely detected in ALPS treated water | α | U-234, U-238, Np-237, Pu-238, Pu-239, Pu-240, Am-241, Cm-244 | 5.4E+00 | 8.2E-04 | 4.2E-02 | 3.7E-02 | | |
| | Other than α nuclides | Subject to removal by ALPS (other than the above) | Mn-54, Ni-63, Cd-113m, Ce-144, Pm-147, Sm-151, Eu-154, Eu-155, Pu-241 | 2.2E+00 | 1.4E-03 | 1.3E-02 | 1.2E-02 | |
| | | Other than those subject to removal | A large number of measurements | Cl-36, Se-79, Nb-94 | 5.0E-02 | 1.2E-02 | 1.2E-02 | |
| | | Small number of measurements | [1] Countable for gross β or Ge | Ba-133 | 8.7E-03 | 1.5E-03 | 1.4E-03 | 1.4E-03 |
| | | | [2] Not countable for gross β and Ge | Fe-55, Nb-93m, Mo-93 | 2.1E-02 | 9.3E-03 | 6.8E-03 | 6.8E-03 |

*For J1-C and J1-G, the analysis and evaluation results for Cl-36, Se-79, Ba-133, Fe-55, Nb-93 m, and Mo-93 are not available, and the results from the additional ALPS outlet are used.

2. Assessment results (comparison of the sum of the ratios to regulatory concentrations limits)

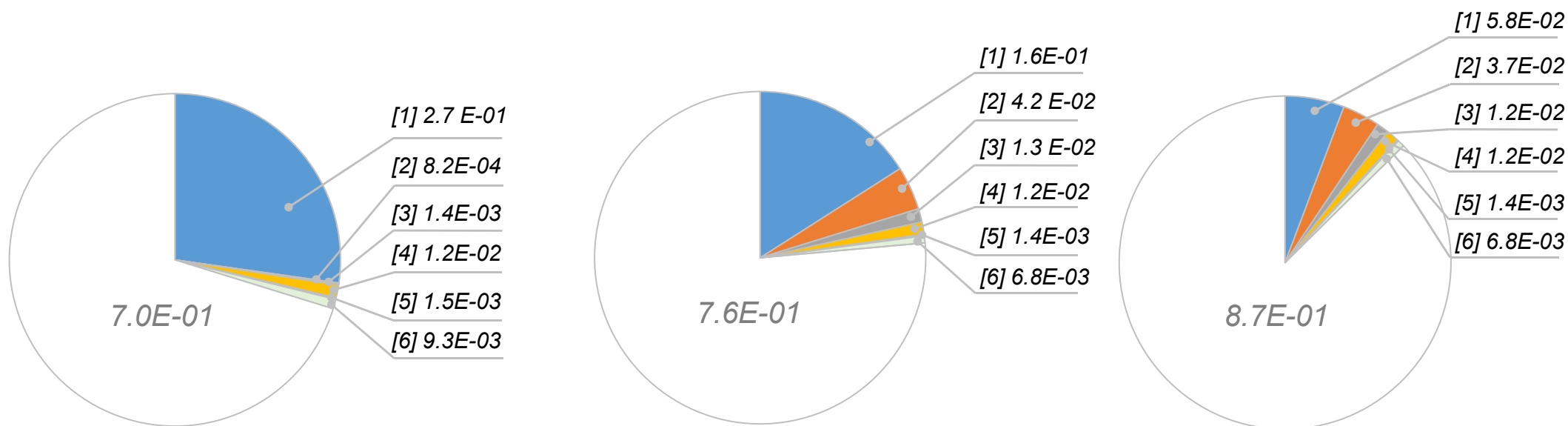
■ The graph below shows the sum of the ratios to regulatory concentrations limits shown on page 1.



3. Evaluation results (ratio of ALPS treated water against discharge standards)



- For the 35 nuclides to be measured/assessed and monitored, shown on page 1, the ratio to the discharge standard (sum of the ratios to regulatory concentrations limits is less than 1) is described below.
- Each ALPS treated water has a margin of approximately 7.0E-01 to 8.7E-01 relative to the discharge standard.



K-4

J1-C

J1-G

- [1] Major 7 nuclides + C-14 + Tc-99
- [3] Nuclides subject to removal (other than shown on the left)
- [5] Other than the nuclides subject to removal (less measurements) (1)

- [2] Alpha nuclide
- [4] Other than the nuclides subject to removal (more measurements)
- [6] Other than the nuclides subject to removal (less measurements) (2)