(The 3rd) 1F Technical Meeting
Material 1-1-2

Comparison of the sum of the ratios to regulatory concentrations limits at ALPS inlet/outlet [Revised Version]

December 21, 2022

TEPCO

Tokyo Electric Power Company Holdings, Inc.

The Japanese version shall prevail.

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. Note that in the calculation of the regulatory concentration limit ratio of α-nuclides, the total-α value is divided by 4 Bq/L, which is the lowest regulatory concentration limit among the α-nuclides selected.

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 →1.0E+00	8.2E-04 →1.6E-04	4.2E-02 →8.1E-03	3.7E-02 →7.0E-3
	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	1.2E-02
			Small number of measurements: [1] Countable for gross β or Ge	Ba-133	8.7E-03	1.5E-03 →1.8E-05	1.4E-03 →1.4E-04	1.4E-03 →1.3E-04
			Small number of measurements: [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.

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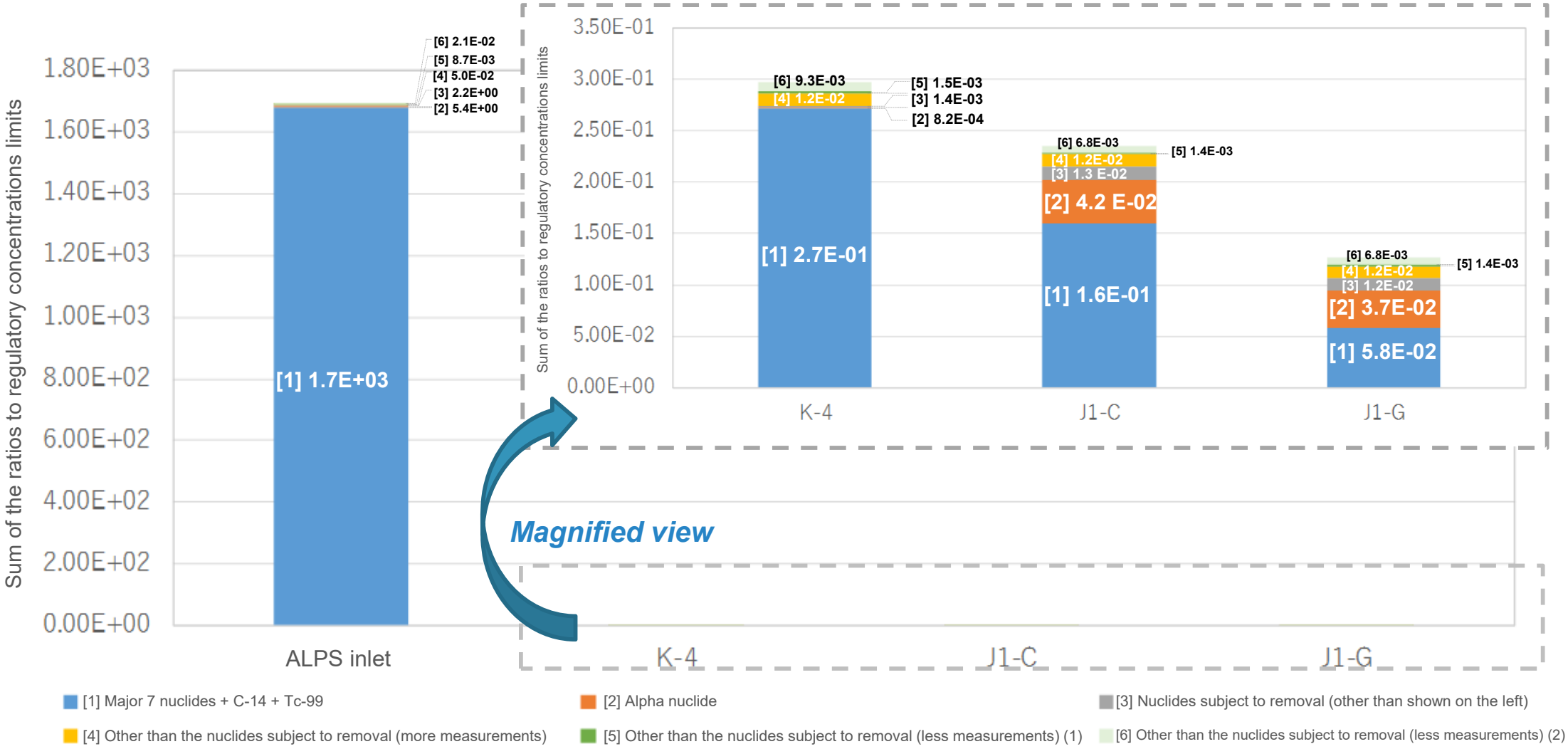
2. Assessment results (comparison of the sum of the ratios to regulatory concentrations limits)

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



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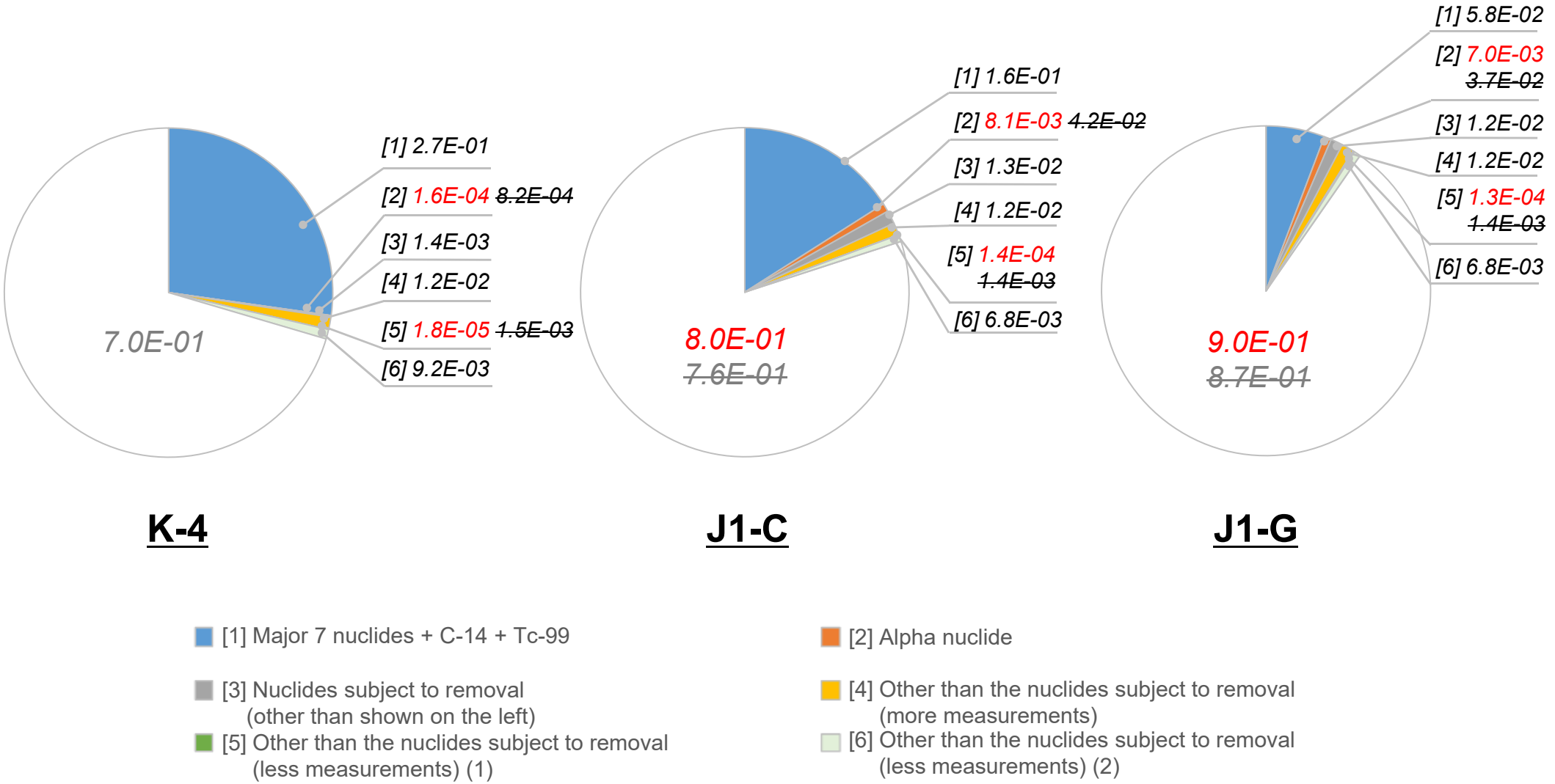
3. Evaluation results (ratio of ALPS treated water against discharge standards)

- 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 9.0~~8.7~~E-01 relative to the discharge standard.



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