November 14, 2023

Results of ALPS Treated Water Marine Monitoring:
Seawater survey (seven major nuclides) (September, 2023)

1. Outline of survey

(1) Date of sampling
September 13–September 15, 2023

(2) Sampling points
Three sampling points on the coastal waters in the Fukushima Prefecture (within 3 km of the proposed location of the ALPS treated water discharge outlet)

(3) Detail of the survey
・Measurements of radioactive material concentration (seven major nuclides) in seawater

2. Outline of results

(1) Seawater survey (3 sampling points [6 samples] in coastal waters in the Fukushima Prefecture)
Two of the seven major nuclides were detected in the seawater, cesium-137 and strontium-90.
Concentrations of cesium-137 in seawater (with a target lower limit of detection of 0.001 Bq/L) range from 0.0076 Bq/L to 0.044 Bq/L.
Concentrations of strontium-90 in seawater (with a target lower limit of detection of 0.001 Bq/L) range from 0.00067 Bq/L to 0.0079 Bq/L.
Concentrations of cesium-134, ruthenium-106, antimony-125, cobalt-60 and iodine-129 in seawater correspond to below the lower limits of detection in all samples. The target lower limits of detection of the nuclides are shown below.

Nuclides	Target lower limits of detection (Bq/L)
Cesium 134	0.001
Cesium 137	0.001
Ruthenium 106	1.2
Antimony 125	0.5
Cobalt 60	0.3
Strontium 90	0.001
Iodine 129	0.01

*A target lower limit of detection means a value that is set for quality control to assure at least the detection up to the value when analysis is conducted. Each actual lower limit of detection differs according to samples, and is equal to or lower than a target lower limit of detection.

(Detailed are attached)

(Maps attached)

Attachement

Analysis results for the seven major nuclides in seawater at sampling points within 3 km of the discharge outlet

Sampling point	Sampling date (yyyy/mm/dd)	Sampling layer	Sampling depth (m)	Nuclide	Radioactivity concentration[*1*2]	Unit
E-S3	2023/09/13	Surface layer	1.5	Cs-134	< 0.0009	Bq/L
E-S3	2023/09/13	Surface layer	1.5	Cs-137	0.044 ± 0.0031	Bq/L
E-S3	2023/09/13	Surface layer	1.5	Ru-106	< 0.6	Bq/L
E-S3	2023/09/13	Surface layer	1.5	Sb-125	< 0.2	Bq/L
E-S3	2023/09/13	Surface layer	1.5	Co-60	< 0.07	Bq/L
E-S3	2023/09/13	Surface layer	1.5	Sr-90	0.0079 ± 0.00053	Bq/L
E-S3	2023/09/13	Surface layer	1.5	I-129	< 0.006	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	Cs-134	< 0.001	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	Cs-137	0.017 ± 0.0012	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	Ru-106	< 0.5	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	Sb-125	< 0.2	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	Co-60	< 0.08	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	Sr-90	0.00092 ± 0.00015	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	I-129	< 0.006	Bq/L
E-S10	2023/09/14	Surface layer	1.5	Cs-134	< 0.0007	Bq/L
E-S10	2023/09/14	Surface layer	1.5	Cs-137	0.010 ± 0.00078	Bq/L
E-S10	2023/09/14	Surface layer	1.5	Ru-106	< 0.6	Bq/L
E-S10	2023/09/14	Surface layer	1.5	Sb-125	< 0.2	Bq/L
E-S10	2023/09/14	Surface layer	1.5	Co-60	< 0.08	Bq/L
E-S10	2023/09/14	Surface layer	1.5	Sr-90	0.00095 ± 0.00018	Bq/L
E-S10	2023/09/14	Surface layer	1.5	I-129	< 0.006	Bq/L
E-S10	2023/09/14	Bottom layer	11.7	Cs-134	< 0.0007	Bq/L
E-S10	2023/09/14	Bottom layer	11.7	Cs-137	0.0076 ± 0.00060	Bq/L
E-S10	2023/09/14	Bottom layer	11.7	Ru-106	< 0.6	Bq/L
E-S10	2023/09/14	Bottom layer	11.7	Sb-125	< 0.2	Bq/L
E-S10	2023/09/14	Bottom layer	11.7	Co-60	< 0.07	Bq/L
E-S10	2023/09/14	Bottom layer	11.7	Sr-90	0.00067 ± 0.00015	Bq/L
E-S10	2023/09/14	Bottom layer	11.7	I-129	< 0.006	Bq/L

*1 Radioactivity concentrations are presented as radioactivity concentration ± combined standard uncertainty.

*2 Values below detection limit are shown by lower limit of detection (e.g., “<10 Bq/L” indicates a value below 10 Bq/L).

Analysis results for the seven major nuclides in seawater at sampling points within 3 km of the discharge outlet

Sampling point	Sampling date (yyyy/mm/dd)	Sampling layer	Sampling depth (m)	Nuclide	Radioactivity concentration[*1*2]	Unit
E-S15	2023/09/15	Surface layer	1.5	Cs-134	< 0.0008	Bq/L
E-S15	2023/09/15	Surface layer	1.5	Cs-137	0.023 ± 0.0016	Bq/L
E-S15	2023/09/15	Surface layer	1.5	Ru-106	< 0.5	Bq/L
E-S15	2023/09/15	Surface layer	1.5	Sb-125	< 0.2	Bq/L
E-S15	2023/09/15	Surface layer	1.5	Co-60	< 0.08	Bq/L
E-S15	2023/09/15	Surface layer	1.5	Sr-90	0.0012 ± 0.00018	Bq/L
E-S15	2023/09/15	Surface layer	1.5	I-129	< 0.006	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	Cs-134	< 0.0007	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	Cs-137	0.018 ± 0.0013	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	Ru-106	< 0.6	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	Sb-125	< 0.2	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	Co-60	< 0.07	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	Sr-90	0.0012 ± 0.00017	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	I-129	< 0.006	Bq/L

*1 Radioactivity concentrations are presented as radioactivity concentration ± combined standard uncertainty.

*2 Values below detection limit are shown by lower limit of detection (e.g., “<10 Bq/L” indicates a value lower than 10 Bq/L).

(Attachment)

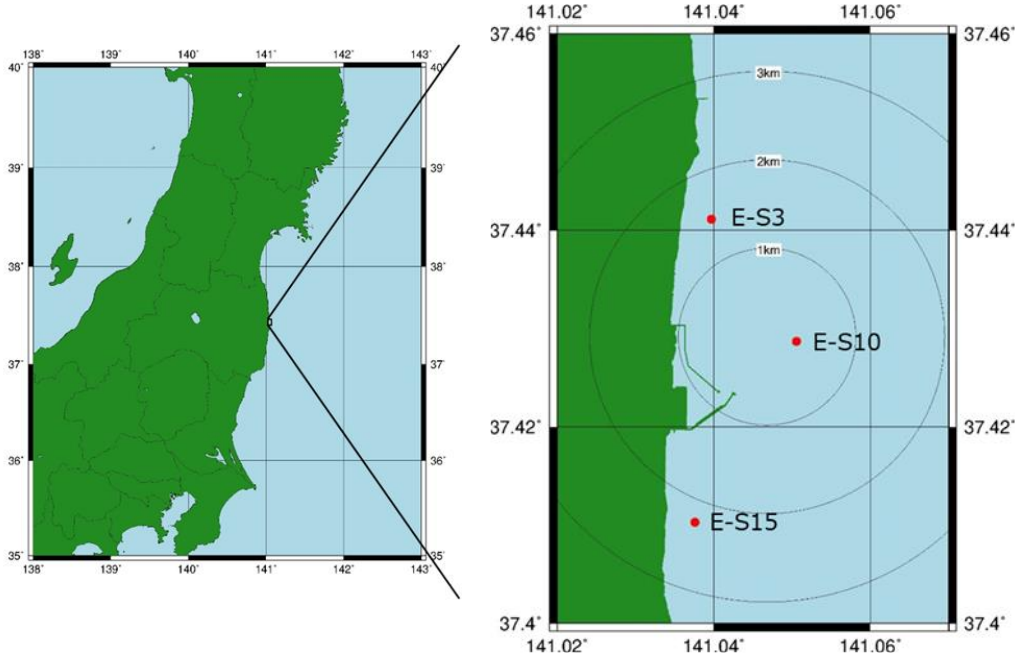

Fig. 1: Sampling points within 3 km of the proposed location of the ALPS treated water discharge outlet