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Explanation Using the ALPS Treated Water Sample Bottle during Visits to the
Fukushima Daiichi Nuclear Power Station

An article entitled, “Manipulating impressions’ not possible to avoid criticism” that refers to the explanation during visits to the Fukushima Daiichi Nuclear Power Station using a multi-nuclide removal equipment (ALPS) treated water sample bottle appeared in a newspaper.

The main purposes of TEPCO’s explanation using an ALPS treated water sample bottle are as follows, and we have explained these in detail using a flip board, etc.

[The main purposes of TEPCO’s explanation during visits]

- The concentration of 62 nuclides including gamma ray nuclides such as cesium 137 in ALPS treated water is reduced to below the regulatory standard value by purifying and treating by ALPS and others.
- As a result, the gamma rays that affect the human body as external exposure should be reduced to at least approximately the same level as the background (air dose rate at the measurement location).
- In addition, tritium (beta ray nuclide), which cannot be purified by ALPS and others, remains in the water after purification and treatment by ALPS and others, exceeding the regulatory concentration limit, and therefore, TEPCO plans to discharge the ALPS treated water only after diluting with seawater. (diluted with seawater until the concentration of tritium will be below 1/40 of the regulatory standard)
- The beta rays emitted by tritium in the ALPS treated water is so low that it can be shielded by a sheet of paper, and the beta rays are shielded by the sample bottle (bottle container).
- Therefore, the gamma ray dosimeter used in explanation cannot measure beta rays, and even if it could measure a beta rays, it would not be able to show those radiation level on the site. .

Furthermore, the air dose rate at the location where we are explaining (on site at the power station) is approximately 0.12μSv per hour, if the concentrations of gamma nuclides such as cesium 137 in the water in the bottle were remained to the level that

would cause external exposure (approximately 4,000Bq/L (approximately 44 times the regulatory concentration limit of 90Bq/L) or higher, according to our calculation), the needle of the dosimeter used to measure gamma rays would move, however, there are no such levels of radioactive materials in the water after purification and treatment by ALPS. In addition, using a flip board to show the concentration of cesium 137 before and after purification and treatment by ALPS and others, we explain that there are no radioactive materials in the ALPS treated water in the bottle that would cause external exposure, additionally in fact, cesium 137 has been successfully purified and treated to below the detection limit (value not detected by detailed analysis performed separately, NOT by measured with the dosimeter at the time of the explanation), which is even lower than the regulatory concentration limit, thereby deepening the understanding of the characteristic of the ALPS treated water.

TEPCO will continue to make various efforts to disseminate information on the ALPS treated water and decommissioning in an accurate and easy-to-understand manner.