Reference

## Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daiichi Nuclear Power Station >

(Data summarized on March 13)

| Place of Sampling                | North of Unit 5-6 Discharge<br>Daiichi N<br>(Approx. 30m North of Unit 5 | IPS            | Around South Discharge C<br>Daiichi N<br>(Appox. 1.3km South of Unit | Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding monitored areas is provided in |                           |  |
|----------------------------------|--------------------------------------------------------------------------|----------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--|
| Time of Sampling                 | Mar 12, 2<br>6:50 A                                                      |                | Mar 12, 2<br>7:15 A                                                  |                                                                                                                                                 |                           |  |
| Detected Nuclides<br>(Half-life) | Density of Sample<br>(Bq/L)                                              | Scaling Factor | Density of Sample<br>(Bq/L)                                          | Scaling Factor                                                                                                                                  | section 6 of Appendix 2.) |  |
| I-131<br>(Approx. 8 days)        | ND -                                                                     |                | ND                                                                   | -                                                                                                                                               | 40                        |  |
| Cs-134<br>(Approx. 2 years)      | ND -                                                                     |                | ND                                                                   | -                                                                                                                                               | 60                        |  |
| Cs-137<br>(Approx. 30 years)     | ND                                                                       | -              | ND                                                                   | -                                                                                                                                               | 90                        |  |

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> to Bq/L.

I-131: Approx. 0.47Bq/L, Cs-134: Approx. 1.0Bq/L, Cs-137: Approx. 1.4Bq/L

As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> Data of other nuclides is under evaluation.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

 $<sup>\</sup>ensuremath{^{*}}$  "ND" indicates that the measurement result is below the detection limit.

#### Nuclides Analysis Result of Radioactive Materials in the Seawater

(Data summarized on March 13)

| Place of Sampling<br>(Place No. ) | North of Unit 5-6 I<br>Channel at Fukush<br>NPS<br>(Approx. 30m North<br>Discharge Chan | ima Daiichi<br>n of Unit 5-6 | Around South Discha<br>of Fukushima Da<br>(Appox. 1.3km Sout<br>Discharge Chann | iichi NPS<br>h of Unit 1-4 |                             |                            | Density Limit Specified by<br>the Reactor Regulation (Bq/L)<br>(The density limit in the water |  |
|-----------------------------------|-----------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------|----------------------------|-----------------------------|----------------------------|------------------------------------------------------------------------------------------------|--|
| Date of Sampling                  | Jan 21, 2013                                                                            |                              | Jan 21, 20                                                                      | 13                         |                             |                            | outside the surrounding monitored areas is provided in                                         |  |
| Detected Nuclides<br>(Half-life)  | Density of Sample<br>(Bq/L)                                                             | Scaling<br>Factor<br>( / )   | Density of Sample<br>(Bq/L)                                                     | Scaling<br>Factor<br>( / ) | Density of Sample<br>(Bq/L) | Scaling<br>Factor<br>( / ) | section 6 of Appendix 2.)                                                                      |  |
| I-131<br>(Approx. 8 days)         | ND                                                                                      | -                            | ND                                                                              | -                          |                             |                            | 40                                                                                             |  |
| Cs-134<br>(Approx. 2 years)       | ND                                                                                      | -                            | ND                                                                              | -                          |                             |                            | 60                                                                                             |  |
| Cs-137<br>(Approx. 30 years)      | ND                                                                                      | -                            | ND                                                                              | -                          |                             |                            | 90                                                                                             |  |
| H-3<br>(approx. 12yrs)            | 3.7                                                                                     | 0.00                         | ND                                                                              | -                          |                             |                            | 60,000                                                                                         |  |
| All α                             | ND                                                                                      | -                            | ND                                                                              | -                          |                             |                            | -                                                                                              |  |
| ΑΙΙ β                             | ND                                                                                      | -                            | ND                                                                              | -                          |                             |                            | -                                                                                              |  |
| Sr-89<br>(Approx. 51 days)        | ND                                                                                      | -                            | ND                                                                              | -                          |                             |                            | 300                                                                                            |  |
| Sr-90<br>(Approx. 29 years)       | 2.7                                                                                     | 0.09                         | 0.21                                                                            | 0.01                       |                             |                            | 30                                                                                             |  |

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

#### (Evaluation)

Although H-3, Sr-90 were detected supposedly as a result of this accident, H-3 and Sr-90 are less than the density limit in the water which is specified by the announcement.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\*</sup> Nuclide analysis results of I-131, Cs-134, Cs-137 and All β obtained at "Around South Discharge Channel of Fukushima Daiichi NPS" were announced on Janu

<sup>\*</sup> When the measurement value is below the detection limit, "ND" is marked. The detection limits are as follows.

I-131: Approx. 0.49Bq/L, Cs-134: Approx. 1.1Bq/L, Cs-137: Approx. 1.4Bq/L,

H-3: Approx. 2.9Bq/L, All α: Approx. 0.10Bq/L, All β: Approx. 25Bq/L, Sr-89: Approx. 0.2Bq/L

As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> Nuclides analysis of Sr-89 and Sr-90 were done by Japan Chemical Analysis Center.

# Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore >

(Data summarized on March 13)

| Place of Sampling<br>(Place No.) | Arounmd 15km Offshore of Odaka Ward (1-B1) |                   |                                |                            | Around 18km Offshore of Ukedo River (T-B2) |                   |                                       |                   | Around 10km Offshore of 1F (T-B3)     |                   |                                       |                            | Density Limit Specified by the Reactor Regulation                        |
|----------------------------------|--------------------------------------------|-------------------|--------------------------------|----------------------------|--------------------------------------------|-------------------|---------------------------------------|-------------------|---------------------------------------|-------------------|---------------------------------------|----------------------------|--------------------------------------------------------------------------|
| Upper Layer Feb 4, 2013          |                                            | ,                 | Lower Layer<br>Feb 4, 2013     |                            | Upper Layer<br>Feb 4, 2013<br>6:50 AM      |                   | Lower Layer<br>Feb 4, 2013<br>6:50 AM |                   | Upper Layer<br>Feb 4, 2013<br>6:18 AM |                   | Lower Layer<br>Feb 4, 2013<br>6:18 AM |                            | (Bq/L) (The density limit in the water outside the surrounding monitored |
| Time of Sampling                 | 7:31 AM                                    |                   | 7:31 AM                        |                            |                                            |                   |                                       |                   |                                       |                   |                                       |                            |                                                                          |
| Detected Nuclides<br>(Half-life) | Density of<br>Sample<br>(Bq/L)             | Scaling<br>Factor | Density of<br>Sample<br>(Bq/L) | Scaling<br>Factor<br>( / ) | Density of<br>Sample<br>(Bq/L)             | Scaling<br>Factor | Density of<br>Sample<br>(Bq/L)        | Scaling<br>Factor | Density of<br>Sample<br>(Bq/L)        | Scaling<br>Factor | Density of<br>Sample<br>(Bq/L)        | Scaling<br>Factor<br>( / ) | areas is provided in section 6 of Appendix 2.)                           |
| Cs-134<br>(Approx. 2 years)      | 0.0037                                     | 0.00              | 0.0057                         | 0.00                       | 0.0089                                     | 0.00              | 0.0072                                | 0.00              | 0.0065                                | 0.00              | 0.048                                 | 0.00                       | 60                                                                       |
| Cs-137<br>(Approx. 30 years)     | 0.0092                                     | 0.00              | 0.012                          | 0.00                       | 0.018                                      | 0.00              | 0.013                                 | 0.00              | 0.011                                 | 0.00              | 0.083                                 | 0.00                       | 90                                                                       |

| Place of Sampling<br>(Place No.) |                                | Around 10km Offshore of 2F (T-B4)  Upper Layer Lower Layer |                                |                   |                                | avor.                      | Lowerte                        | nyor              |                                |                   |                                |                   | Density Limit Specified by the Reactor Regulation                             |
|----------------------------------|--------------------------------|------------------------------------------------------------|--------------------------------|-------------------|--------------------------------|----------------------------|--------------------------------|-------------------|--------------------------------|-------------------|--------------------------------|-------------------|-------------------------------------------------------------------------------|
| Time of Sampling                 | Feb 4, 2013 Feb                |                                                            | Feb 4, 20<br>7:26 A            | 013               | Upper Layer                    |                            | Lower Layer                    |                   | Upper Layer                    |                   | Lower Layer                    |                   | (Bq/L) (The density limit in the water outside the                            |
| Detected Nuclides<br>(Half-life) | Density of<br>Sample<br>(Bq/L) | Scaling<br>Factor                                          | Density of<br>Sample<br>(Bq/L) | Scaling<br>Factor | Density of<br>Sample<br>(Bq/L) | Scaling<br>Factor<br>( / ) | Density of<br>Sample<br>(Bq/L) | Scaling<br>Factor | Density of<br>Sample<br>(Bq/L) | Scaling<br>Factor | Density of<br>Sample<br>(Bq/L) | Scaling<br>Factor | surrounding monitored<br>areas is provided in<br>section 6 of Appendix<br>2.) |
| Cs-134<br>(Approx. 2 years)      | 0.013                          | 0.00                                                       | 0.022                          | 0.00              |                                |                            |                                |                   |                                |                   |                                |                   | 60                                                                            |
| Cs-137<br>(Approx. 30 years)     | 0.025                          | 0.00                                                       | 0.036                          | 0.00              |                                |                            |                                |                   |                                |                   |                                |                   | 90                                                                            |

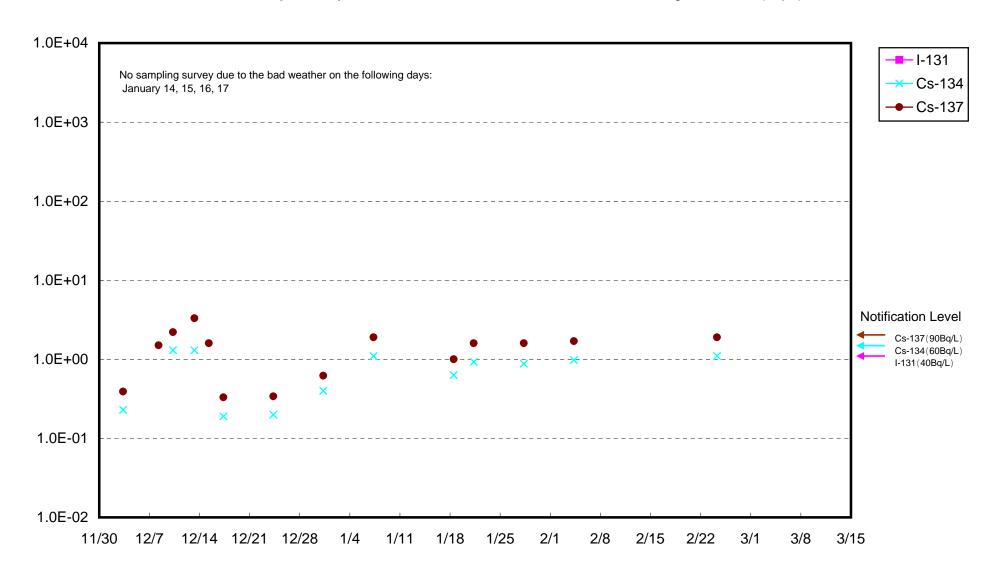
<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\*</sup> Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted.

 $<sup>^{\</sup>star}$  Analyzed by: THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD.

## Radioactivity Density of the Seawater at 1F Units 5-6 North Discharge Channel (Bq/L)



## Radioactivity Density of the Seawater at 1F South Discharge Channel (Bq/L)

