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(भारत सरकार का उद्यम)

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OF INDIA LIMITED**

( A Govt. of India Enterprise)

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**Nalinish Nagaich**

Executive Director (CP & CC)

PRESS RELEASE

April 12, 2011

### INES RATING OF FUKUSHIMA EVENT

The Nuclear and Industrial Safety Agency (NISA) of Japan today issued a new provisional rating of **level 7** "Major Accident" on the International Nuclear and Radiological Event Scale (INES) for the accident at the Fukushima Daiichi nuclear power plant. This has been an administrative decision for reclassifying the events.

There has not been any increase in the radioactivity release and, as a matter of fact, the radiation levels are declining around the plant.

On March 18, Japanese authorities rated the incidents at Fukushima Daiichi 1, 2 and 3 reactors at Level 5 on the INES scale and the loss of cooling and water supplying functions in the spent fuel pool of the Unit 4 reactor at Level 3.

The provisional up-rating of the Fukushima Daiichi INES rating resulted from an estimate of the total amount of radioactivity released to the environment from the nuclear plant and on account of the following:

- The new provisional rating considers the accidents that occurred at Units 1, 2 and 3 as a single event on INES as against considering each unit separately for INES rating earlier. The incident at Unit-4 continues to be rated at Level 3.
- The total radioactivity released so far has been computed from assessment of the impact of releases of radioactivity through air, water

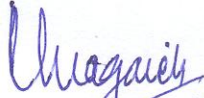
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and land routes considering their relevant weightage factors in the period beginning from March 11, 2011.

The total radioactivity release from Fukushima has however been only one tenth of that resulted from Chernobyl accident and the radiation levels around the site are declining. While at Chernobyl the nuclear reactor itself exploded, the reactor vessels at Fukushima are intact. The outer reactor buildings (constructed of concrete) were damaged by hydrogen explosions.

The IAEA and NISA updates in this regard are also attached for information.

  
(N. Nagaich) 12/04/2011

## **IAEA Update on Fukushima Nuclear Accident (12 April 2011, 4:45 UTC)**

The Japanese Nuclear and Industrial Safety Agency (NISA) today issued a new provisional rating for the accident at the Fukushima Daiichi nuclear power plant on the IAEA International Nuclear and Radiological Event Scale (INES).

The nuclear accident at Fukushima Daiichi is now rated as a level 7 "Major Accident" on INES. Level 7 is the most serious level on INES and is used to describe an event comprised of "A major release of radioactive material with widespread health and environmental effects requiring implementation of planned and extended countermeasures". Japanese authorities notified the IAEA in advance of the public announcement and the formal submission of the new provisional rating.

The new provisional rating considers the accidents that occurred at Units 1, 2 and 3 as a single event on INES. Previously, separate INES Level 5 ratings had been applied for Units 1, 2 and 3. The provisional INES Level 3 rating assigned for Unit 4 still applies.

The re-evaluation of the Fukushima Daiichi provisional INES rating resulted from an estimate of the total amount of radioactivity released to the environment from the nuclear plant. NISA estimates that the amount of radioactive material released to the atmosphere is approximately 10 percent of the 1986 Chernobyl accident, which is the only other nuclear accident to have been rated a Level 7 event.

Earlier ratings of the nuclear accident at Fukushima Daiichi were assessed as follows:

On 18 March, Japanese authorities rated the core damage at the Fukushima Daiichi 1, 2 and 3 reactor Units caused by loss of all cooling function to have been at Level 5 on the INES scale. They further assessed that the loss of cooling and water supplying functions in the spent fuel pool of the Unit 4 reactor to have been rated at Level 3.

Japanese authorities may revise the INES rating at the Fukushima Daiichi nuclear power plant as further information becomes available.

INES is used to promptly and consistently communicate to the public the safety significance of events associated with sources of radiation. The scale runs from 0 (deviation) to 7 (major accident).

Source: <http://www.iaea.org/newscenter/news/tsunamiupdate01.html>

April 12, 2011

INES (the International Nuclear and Radiological Event Scale) Rating on  
the Events in Fukushima Dai-ichi Nuclear Power Station  
by the Tohoku District - off the Pacific Ocean Earthquake

The Rating of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi Nuclear Power Station (NPS), Tokyo Electric Power Co. Inc. (TEPCO), caused by the Tohoku District - off the Pacific Ocean Earthquake is temporarily assessed as Level 7, considering information obtained after March 18th.

However, the amount of discharged radioactive materials is approximately 10 percent of the Chernobyl accident which was assessed on the same level.

## 1. INES

INES is the rating, which International Atomic Energy Agency (IAEA) and Nuclear Energy Agency, Organization for Economic Cooperation and Development (OECD/NEA) established and proposed to the Member States in March 1992, in order to indicate the impact on safety by the individual event in a nuclear facility and so on. Japan has also utilized it since 1 August 1992.

## 2. Events in Fukushima Dai-ichi NPS, TEPCO, by the Tohoku District - off the Pacific Ocean Earthquake

On 18 March, the ratings of the events in Fukushima Dai-ichi NPS by the Tohoku District - off the Pacific Ocean Earthquake were informed to be temporarily assessed as Level 5, considering information obtained before March 18th. However, Nuclear and Industrial Safety Agency (NISA) estimated the total amount of discharged radioactive materials from the reactors of Fukushima Dai-ichi NPS to the air, making a trial

calculation using the result of analysis of the situation of the reactors and so on, which was carried out by Japan Nuclear Energy Safety Organization (JNES). This estimation resulted in the value corresponding to Level 7 of INES rating\*, as listed in the following table..

\* The value representing radiation impact, which is converted to the amount equivalent to <sup>131</sup>I (Iodine), exceeds several tens of thousands of tera-becquerel (of the order of magnitude as 10<sup>16</sup> Bq).

In addition, Nuclear Safety Commission of Japan (NSC) also estimated and announced the result of the trial calculation in the current stage regarding the total amount of discharged radioactive materials to the air, which had been being carried out in the Commission. This trial calculation is counted backward from the results of monitoring data of <sup>131</sup>I and <sup>137</sup>Cs (Caesium) as the total amount of the discharge from the Fukushima Dai-ichi NPS, This results in the value corresponding to Level 7 of INES rating as well.

	Assumed amount of the discharge from Fukushima Dai-ichi NPS		(Reference) Amount of the discharge from the Chernobyl accident
	Estimated by NISA	Announced by NSC	
<sup>131</sup> I ... (a)	1.3×10 <sup>17</sup> Bq	1.5×10 <sup>17</sup> Bq	1.8×10 <sup>18</sup> Bq
<sup>137</sup> Cs	6.1×10 <sup>15</sup> Bq	1.2×10 <sup>16</sup> Bq	8.5×10 <sup>16</sup> Bq
(Converted value to <sup>131</sup> I) ... (b)	2.4×10 <sup>17</sup> Bq	4.8×10 <sup>17</sup> Bq	3.4×10 <sup>18</sup> Bq
(a) + (b)	3.7×10 <sup>17</sup> Bq	6.3×10 <sup>17</sup> Bq	5.2×10 <sup>18</sup> Bq

(Notes) The conversion of the values to be equivalent to radiation impact of <sup>131</sup>I regarding the NISA's estimation and the NSC's

announcement were carried out by NISA in accordance with the INES User's Manual.

Although Level 7 is the highest level of INES rating, it is estimated that the amount of discharged radioactive materials to the environment in the current stage is approximately 10 percent of the Chernobyl accident, which was assessed on the same level in the past.

### 3. Procedures to be taken

This information is about the result of the total amount of the discharge from Fukushima Dai-ichi NPS in the current stage. As radioactive materials are being released to the environment, NISA will continuously gather and evaluate information.

In addition, the official level of INES will be determined, considering the technical evaluation from specialist view points made by INES Evaluation Subcommittee (Chairman: Dr. Naoto Sekimura, Professor of University of Tokyo, Nuclear Professional School Engineering, Department of Nuclear Engineering and Management), which set up in the Nuclear and Industrial Safety Subcommittee of the Advisory Committee for Natural Resources and Energy, after the recurrence prevention measures are confirmed based on the concrete causes found.

(Contact Person)

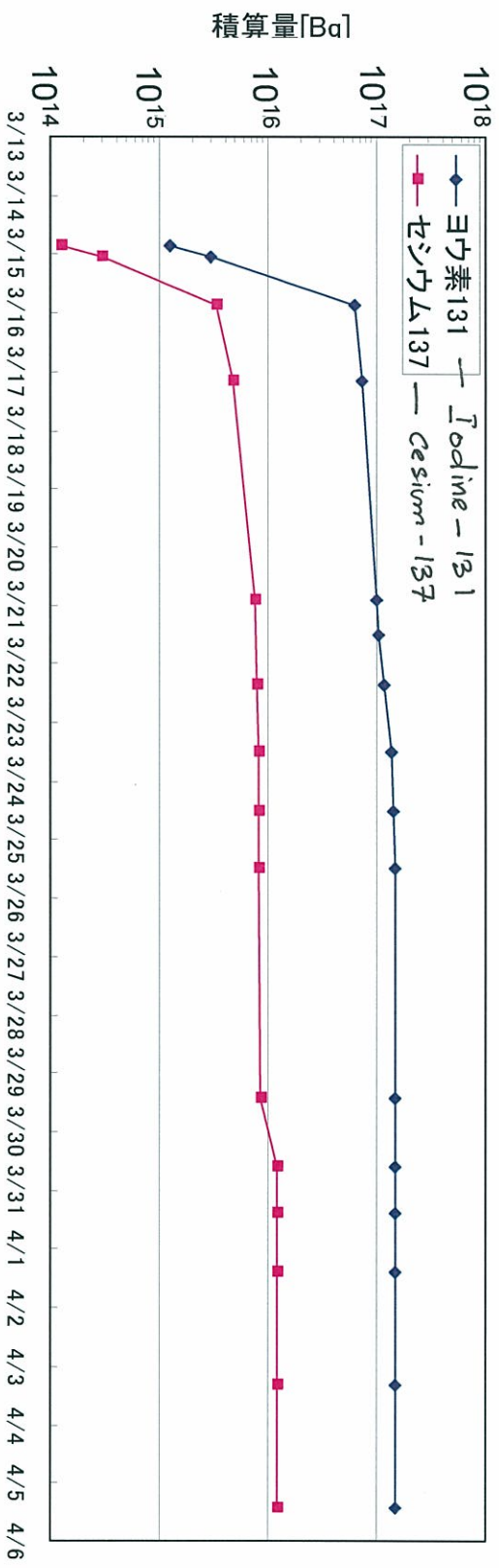
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CUMULATIVE RADIOACTIVITY RELEASE (ESTIMATED).

ヨウ素131、セシウム137の大気中への放出総量(モニタリングデータからの推定値)



注) 事故発生以来その日までに大気中に放出された総量を示しているものです。  
その日1日で放出された量ではありません。