

March 13, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information(the 19th Release)
(As of 08:30 March 13, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Higashidori and Onagawa NPSs, Tohoku Electric Power Co., Inc; Higashidori, Fukushima Dai-ichi, Fukushima Dai-ni and Kashiwazaki-Kariwa NPSs, Tokyo Electric Power Co., Inc. and electricity, gas, heat supply and complex as follows:

1. Summary of Damage(Earthquake at Sanriku-Oki)

- (1) Time of Occurrence: 14:46 (UTC 5:46) March 11, 2011, Friday
- (2) Epicenter: Off-Coast of Sanriku (North Latitude: 38; East Longitude: 142.9), 10km deep, M8.8
- (3) Seismic Intensity in Japanese Scale
<Area of Seismic Intensity Larger Than and Including 4>
7: Northern Miyagi Prefecture
6+: Northern and southern Ibaraki Prefecture
5+: Sanpachi-Kamikita Aomori Prefecture
5-: Chuetsu, Niigata Prefecture
<Municipality of Seismic Intensity Larger than and Including 4>
6+: Naraha Machi, Tomioka Machi, Ookuma-machi, and Futaba-machi, Fukushima Prefecture
6-: Ishinomaki-city and, Onagawa town (by Seismograph of NPP)of , Miyagi Prefecture and Tokaimura, Ibaraki Pref.
5-: Kariwa-village, Niigata Prefecture
4: Rokkasho-village, Higashidori-village, Aomori Prefecture, Kashiwazaki-city, Niigata Prefecture and Yokosuka-city, Kanagawa Prefecture
1: Tomari-village, Hokkaido

2. The status of operation at Power Stations(Number of automatic shutdown(units): 10 (as of 11:00, March12)

a. Onagawa Nuclear Power Station (Onagawa-machi and Ishinomaki-shi, Miyagi Prefecture)

(1) The status of operation

Unit 1 (524MWe): automatic shutdown, cold shut down at 0:58, March 12

Unit 2 (825MWe): automatic shutdown

Unit 3 (825MWe): automatic shutdown, cold shut down at 1:17, March 12

(2) Readings of monitoring post

Variation in the monitoring post readings: No

Variation in the main stack monitor readings: No

(3) Report concerning other malfunction

It is confirmed Smoke in the first basement of the Turbine Building was confirmed the extinguished at 22:55 on March 11th.

b. Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co.,Inc.(TEPCO)

(Okuma-machi and Futaba-machi, Futaba-gun, Fukushima Prefecture)

(1) The status of operation

Unit 1 (460MWe): automatic shutdown

Unit 2 (784MWe): automatic shutdown

Unit 3 (784MWe): automatic shutdown

Unit 4(784MW): in periodic inspection outage

Unit 5(784MW): in periodic inspection outage

Unit 6(1,100MW): in periodic inspection outage

(2) Readings at monitoring post

The measurement of radioactive materials in the environmental monitoring area near the site boundary by a monitoring car confirmed the increase in the radioactivity compared to the radioactivity at 04:00, March 12 now.

MP4(Moitoring car data at the site boundary, North-west of Unit1):

40microSv/h(03:08, March13)

MP6 (at the main gate) 0.07microSv/h(04:00, March 12) ->

3.1microSv/h(04:50, March13)

3.2microSv/h(05:50, March13)

MP8 (at the observation platform) 0.07microSv/h(04:00, March12)

-> 5microSv/h(04:30, March13)
5.2microSv/h(05:50, March13)

(3) Wind direction/wind speed(as of 20:38, March 12)

Wind direction: West

Wind Speed: 0.5m/s

(4)Report concerning other malfunction

Article 10* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi)

(*A heightened alert condition)

Article 15** of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi, Units 1 and 2)

(** Nuclear emergency situation)

Situation of power source to recover water injection function at the Station.

-Cable from electric power generating cars are under connecting work(as of 15:04, March 12)

-Pressure in the containment vessel has arisen. Steam release is undertaking in order to relieve pressure.(as of 14:40, March 12)

-A radiation level exceeding 500 microSv/h was monitored at the site boundary(15:29, March 12). A large motion occurred due to an earthquake with close epicentre and an large sound was issued near Unit1 and smoke was observed.

-Unit 3: As the automatic trip of the HPCI, coolant injection using other systems tried but failed. The reactor injection function was lost. (05:10, March 13)

c. Fukushima-Daini Nuclear Power Station(TEPCO)

(Naraha-machi/Tomioka-machi, Futaba-gun, Fukushima pref.)

(1) The status of operation

Unit1(1,100MW): automatic shutdown

Unit2(1,100MW): automatic shutdown

Unit3(1,100MW): automatic shutdown, cold shut down at 12:15, March 12

Unit4(1,100MW): automatic shutdown

(2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

(3) Direction and velocity of wind (As of 01:59, 13 March)

Direction: South-west

Velocity: 4.7m/s

(4) Report concerning other malfunction

No Report of fire, etc.

Article 10* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ni, Unit 1)

(*A heightened alert condition)

Article 15** of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ni, Units 1,2 and 4)

(**Nuclear emergency situation)

3. Industrial Safety

○Electricity

* Tokyo Electric Power Co. (as of 04:30, March 13, 2011)

Scale of loss of electrical power: approx. 340 thousand houses

Power loss area:

Ibaraki Pref.: Whole area (approx. 332 thousand houses),

Tochigi Pref.: Mogi-cho, etc. (approx 7 thousand houses)

Chiba Pref.: Katori-shi, etc. approx 3 hundred houses)

* Tohoku Electric Power Co. (as of 22:00, March 12, 2011)

Scale of loss of electrical power: approx.2150 thousand houses (under investigation)

Power loss area:

Iwate Pref.: Whole area, (approx 502 thousand houses)

Akita Pref: Some area (approx 600 houses)

Miyagi Pref: whole area (approx 1,283 thousand houses)

Aomori Pref.: area (approx 250 thousand houses)

Yamagata Pref: Recovered (as of 21:13, March 12)

Fukushima Pref: Some parts of Naka-dori and Hama-dori (approx 114 thousand houses)

Niigata Pref.: Recovered(as of 15:51, March 12)

* Hokkaido Electric Power Co. (as of 14:00, March 12, 2011)

Electrical outage be restored

*Chubu Electric Power Co. (as of 17:11, March 12, 2011)

Electrical outage be restored in naoan..(as of 17:11, March 12)

○General Gas (as of 21:30, March 12)

The Japan Gas Association dispatched its six advance teams of thirty staff (five teams for Sendai and one team for Joban area) at 07:00, 12 March upon request from Sendai-shi.

Sendai-city municipal Gas, Kesenuma-city municipal Gas, Ishinomaki Gas have trouble contacting at 1:00 12 March. The Japan Gas Association confirmed that there are no supply disruption in the supply area of city gas in Hokkaido, Yamagata, and Akita prefecture.

* Tokyo Gas Co. (whole area of Hitachi-shi)

Hitachi branch: 30,007 houses are in supply disruption. There is no damage in equipment, however, equipment is inoperable due to loss of power. Walkdown unit of eight person departed at 18:45, March 11 and already arrived at 06:00, March 12. Recovery plan will be established by 12 afternoon. Time of recovery is not certain.

Eastern part of Joso: 453 houses were in supply disruption in Ushiku (supply restarted at 17:10, March 11)

471 houses were in supply disruption in Ushiku-shi
Ushiku-cho (supply restarted at 22:36 March 11)

77 houses are in supply disruption in
Ryuugasaki (supply restarted at 16:20, March 11)

40 houses are in supply disruption in Nishi-ku,
Yokohama-shi (supply restarted at 17:29, March 11)

Gas leaked from a Nozzle of an LNG tank at Sodegaura but no ignition (restored on 02:30, March 12)

*Gas Bureau of Sendai-shi: whole supply disruption (approx. 360 thousand houses)

*Shiogama Gas Co.: approx. 12,382 houses are in supply disruption. Shiogama-shi, Tagashiro-shi, Nanahama-shi and Rihusyo are out of service

due to no supply from Gas Bureau of Sendai)

*Hachinohe Gas (Several part of Hachinohe-shi): approx.1,300 houses are in supply disruption.

*Kamaishi Gas Co. : approx.10,000 houses are in supply disruption. First floor of this Gas facility sank.

*Hatano Gas Co.: Approx. 380 houses are in supply disruption. Restoration will be expected 13th of March.

*Keiyo Gas Co.: Leakage occurred at 5 locations of middle pressure conduit
Leakage occurred at many parts of Low pressure conduits
5,445 houses in Urayasu-shi are in supply disruption.
Supply to Yachiyo Station stopped.

*Kujukuri choei Gas: Approx 258 houses are in supply disruption.

*Atsugi Gas Co: leakage occurred at 1 location of middle pressure conduit.

*Fukushima Gas Co.: (A part of Fukushima-shi) About 2,726 houses are in supply disruption

*Tohoku Gas (part of Shirakawa-shi): 300 houses are in supply disruption

*Joban kyodo Gas(Iwaki-shi): 14,000 houses (whole customer) are in supply disruption

*Tobu Gas Fukushima-shisya: 7,500 houses are in supply disruption (Koriyama-shi, Iwaki-shi) leakage occurred at 2 locations of middle pressure conduit, leakage occurred at 54 locations of low pressure conduits and another leakage occurred on 85 locations. 39 houses in supply disruption.

*Tobu Gas (a part of Tsuchiura-shi) 7,500 houses in supply disruption
(a part of Mito-shi) 330 houses in supply disruption

*Joban Toshi Gas (Mito-shi) 60 houses in supply disruption

*Tosai Gas(Kasukabe-shi) Gas leakage occurred from conduit. 150 houses in apartment are in supply disruption. Supply restarted in the afternoon 12 March.

*Odawara Gas(Odawara-shi)

leakage occurred at 1 locations of low pressure branch conduit and 3 locations of ex-core inner conduit and have restored at 21:30 11 March. Other areas are under investigation.

○Community Gas(as of 15:50, March 12)

Severe damage has not been reported to Japan Community Gas Association so far. No information is available about the damage in North part of Ibaraki prefecture.

*Tokyo Gas Energy (North part of Ibaraki): Factory stopped supply to 943 houses in Nakago-New Town due to the leakage from pipe.

*Sato Kosan (based in Iwatsuki-ku, Saitama City) Iwatsuki-housing complex: Gas leakage occurred from conduit. 451 sites are in supply disruption.

*Syutoken Gas (based in Sakura-City) Chitose-housing complex: 1,320 houses are in supply disruption

*Kashima Marui Gas (Kamisu-shi): Gas conduit was damaged. 527 houses are in supply disruption. Time of recovery is not certain.

*Nagashima Central Gas (Katori-shi) Tamatsukuri-housing complex, 222 houses are in supply disruption due to short circuit now under recovery works.

*Taihei Sangyo (Takahagi-shi) Hagigaoka-housing complex 112 houses are in supply disruption due to short circuit. Recovery has completed at 21:00 11 March. (Takahagi-shi) Ishidaki-housing complex 648 houses and (Hitachi-shi) Hitachi-Densen Akasaka-housing complex 222 houses are in supply disruption. Under recovery works.

*Taiyo Nissan Energy Kanto Kajima Branch: (Kamisu-shi) Mitsubishi Chemicals Yatabe Complex: 90 houses are in supply disruption due to activation. Investigation is underway for possible gas leakage on the main pipe.

*Nihon Gas (Yaita-shi) Narita Koufuku high residential complex: Production of gas is stopped due to partial damage of the specific production building. 140 houses are in supply disruption[
(Nasukarasuyama-shi) Kounodai New Town: Gas leakage from Main Pipe. 27 houses are in supply disruption.

(Itako-shi) kajima Hinode Housing Complex: 1876 houses are in supply disruption due to damage in the main and branch/torch in and out pipes

(Tokai-mura) Arayadai Housing Complex of JAEA Gas supply was disrupted due to smell of gas in the specified gas production facility.

(Tokai-mura) Nagahori Housing Complex of JAEA 145 houses were in supply disruption due to break of mid-pressure pipe. Affected parts are under repair..

(Hitachioota-shi) Mayumigaoka New Town: 482 gas supply stopped due to autonomy request.

(Inashiki-shi) Yuisa Flat: There are possibilities of breaks in main and branch pipes and supply pipes. 94 houses are in supply disruption. Gas conduit is under repair.

*Imaichi Gas: Gas leakage occurred from conduit at the simple gas complex in Nikko-shi: 240 houses were in gas supply disruption.

*Nihon Gas: Gas leakage occurred from conduit at simple gas complex in the jurisdiction: 76 houses in Nasu-karasuyama-shi, 97 houses in Inashiki-shi, 594 houses in Tokai-mura, Natsu-gun, 370 houses in Yaita-shi, and 3,299 houses in Itako-shi were in gas supply disruption.

These areas other than Itako-shi will be restored on March 19. Residents in 1876 houses of Hinode housing complex in Itako-shi evacuated from this region due to liquefaction of the ground. Time of recovery is not certain.

212 houses in Noda-shi were in gas supply disruption. This area has been restored in March 11.

*Horikawa Industry (Bando city, Ibaraki Pref.) : Iwai Greenland Due to liquefaction of the ground, 566 houses are in supply disruption.

*Tajima : 250 houses were in gas supply disruption at the simple gas complex in Hachioji-city. This area will be restored within March 12.

*Iwatani Kanto (Saitama-shi) Sashiogi Housing Complex: 6 houses are stopped supply. Currently leakage location is under remedy.

○Gas conduit Operators (as of 15:50, March12)

*JX Nikko Nisseki Energy: Hachinohe LNG Base

Premise, electric room and in-house electricity generator equipment, were flooded by the 2nd wave of tsunami and the gas supply was stopped.

Pipe line and bubble station Petroleum Resources Development around Sendai-shi appeared to be flooded with water. Disruption of gas supply does not pose impediment because demands for gas were also disrupted.

○Heat supply (as of 15:50, March12)

West side area at Morioka station: heat supply was stopped due to power failure.

*Yamagata Netsu Kyokyu (Yamagata-shi): Supply was stopped due to emergency shut down condition.

*Onahama Haiyu (Onahama, Iwaki-shi): stopped heat supply due to the breakage of pipe. Heat supply pipes underground might be affected. Time of recovery is not certain.

*"HITACHI NETSU ENERGY"(Hitachi City): stopped heat supply due to the electrical outage at 15:19, March 11.

*"CHIBA NETSU KYOKYU"(Chiba-city): stopped freezer, etc. at 16:19, March 11. Supply was stopped and walkdown is conducted at 16:19, March 11.

*"NISHI-IKEBUKURO NETSU KYOKYU": stopped freezer and boiler at 15:45, March 11.

*"TOKYO NETSU KYOKYU";

-stopped boiler in Takeshiba and Yurakucho areas at 15:20, March 11

-stopped supply to one of the building complex at Hikarigaoka for approx. 3 hours due to the leakage of pipe at 21:35, March 11(Restart supplying at 00:05, March 12)

*"Yokohama Business Park NETSU KYOKYU (Hodogaya-ku, Yokohama

city)

15:50 Stopped steam and cold water supply to PREZZO building

16:20 restored by temporary repair

○Complex (as of 11:00, March 12)

*Cosmo Oil factory Chiba branch

A column of Butane Butylene storage tank was broken. Fire occurred due to gas leakage. One person suffered serious-injury, 4 persons suffered minor injury.

*JX Nippon Oil&Energy Corporation Sendai oil factory (sendai-city, Miyagi prefecture)

-Fire occurred from an explosion of low temperature LPG tank

4. Action taken by NISA

(March 11)

14:46 Set up of the NISA Emergency Preparedness Headquarters (Tokyo) immediately after the earthquake

15:42: TEPCO reported to NISA in accordance with Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi, Units 1,2 and 3.

16:36: TEPCO judged the event in accordance with Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi, Units 1 and 2.(notified to NISA at 16:45)

18:08: Unit 1 of Fukushima Dai-ichi notified NISA of the situation of the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

18:33: Units 1,2 and 4 of Fukushima Dai-ichi notified NISA of the situation of the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

19:03 : Government declared the state of nuclear emergency

20:50: Fukushima prefecture's emergency preparedness headquarters - issued a directive regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO that the residents living in the area of 2km radius from Unit 1 of the Nuclear Power Station must evacuate.(The population of this area is 1,864)

21:23: Directives from Prime Minister to Governor of Fukushima, Mayor of Ookuma and Mayor of Futaba were issued regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO, pursuant to Paragraph 3, Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness as follows:

-Residents living in the area of 3km radius from Unit 1 of the Nuclear Power Station must evacuate.

-Residents living in the area of 10km radius from the Unit 1 must take sheltering.

(March12)

5:22 Unit 1 of Fukushima Dai-ichi notified NISA of the situation of the Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

5:32 Unit 2 of Fukushima Dai-ichi notified NISA of the situation of the Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

05:44 Residents living in the area of 10km radius from unit 1 of the Nuclear Power Station must evacuate by the Prime Minister Direction.

06:07 Regarding Units 1,2 and 4 of Fukushima Dai-ichi NPS, TEPCO reported NISA in accordance with Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

6:50 According to the article 64, 3 of nuclear regulation act, government order to control the internal pressure in Fukushima-daiichi unit No. 1 and 2

7:45 Directives from Prime Minister to Governor of Fukushima, Mayors of Hirono, Naraha, Tomioka, Ookuma and Futaba were issued regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO, pursuant to Paragraph 3, Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness as follows:

-Residents living in the area of 3km radius from Fukushima-Dai-ichi Nuclear Power Station must evacuate.

-Residents living in the area of 10km radius from Fukushima-Dai-ichi NPS must take sheltering

17:00 Notification pursuant to Article 15 of the Act for Special Measure

Concerning Nuclear Emergency Preparedness since the radiation level exceeded the acceptable level of Fukushima Dai-ichi Nuclear Power Station.(NPS).

- 17:39 Prime Minister directed evacuation of the residents living within the 10 km radius from the Fukushima-Dai-ichi NPS
- 18:25 Prime Minister directed evacuation of the residents living within the 20km radius from the Fukushima Dai-ichi NPS
- 19:55 Directives from Prime Minister was issued regarding sea water injection to Unit No.1 of Fukushima Dai-ichi NPS.
- 20:05 According to the article 64, 3 of nuclear regulation act and concerning to directives from Prime Minister, government ordered to inject sea water Unit No.1 of Fukushima Dai-ichi NPS.

(March 13)

5:38 Unit 3 of Fukushima-Dai-ichi notified to NISA the situation of the Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness at the specific emergency stage under the loss of all of the coolant injection function.

TEPCO is on the progress of the recovering of both of the power source and coolant injection function, and on vent for reducing of the pressure of RPV.

<Possible Exposure to Residents>

(1) Case for Travel from Futaba Public Welfare Hospital to Nihonmatsu Man and Woman Symbiosis Center, Fukushima Prefecture

- i) No. of persons to be measured: About 60 persons
- ii) Measured Result: Not yet
- iii) Passage: Exposure could have happened while waiting to be picked up by helicopter at the Futaba high school ground
- iv) Other

Prefectural Response Headquarters judged that there were no exposure to 35 persons who traveled from Futaba Public Welfare Hospital to Kawamata Saiseikai Hospital, Kawamata-machi by the private bus provided by Fukushima Prefecture.

(2) Case for Futaba-machi Residents Evacuated by Buses

- i) No. of Persons: About 100 persons
- ii) Measured Result: 9 persons out of 100 persons

No. of Counts	No. of Persons
18,000cpm	1
30,000-36000cpm	1
40,000cpm	1
little less than 40,000cpm*	1
very small counts	5

*(This results was measured without shoes, though the first measurement exceeded 100,000cpm)

- iii) Passage: Under investigation
- iv) Other

Though persons evacuated in different location outside of the Prefecture (Miyagi Prefecture), all destinations are under confirmation.

(Contact Person)

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