On May 2 and May 11, Nuclear and Industrial Safety Agency (hereinafter referred to as “NISA”) received a report “On the Investigation of the Cause and Establishment of Recurrence Prevention Measures, etc., Regarding the Exposure Exceeding the Dose Limit of a Radiation Worker in Fukushima Dai-ichi NPS” from Tokyo Electric Power Co. Inc. (TEPCO), and evaluated this report.

It is regrettable that 3 violations of the law occurred in TEPCO’s radiation management for workers engaged in radiation work, such as 1) the radiation concentration of the air in the Seismic Isolated Building at Fukushima Dai-ichi NPS was high enough to warrant a mask, but masks were not worn, 2) five female employees were working in areas that required radiation management, despite not being registered as radiation workers, and 2 of them had been exposed to radiation exceeding the public dose limit. As a result, we have strictly warned TEPCO.

We also issued a total of 7 directions for reform such as 1) securing personnel for radiation management and ramping up the management framework in order to conduct appropriate radiation management on-site, 2) securing enough dosimeters to provide a unit to every worker, 3) arranging for a whole body counter to conduct normal exposure assessment (once every 3 months) without delay and 4) ensuring a swift registration of radiation workers, including personnel from subcontractors, as well as instructing TEPCO to work on further reform regarding worker safety and health management, from the standpoint of appropriate radiation management for radiation workers.

In the future, NISA will verify, through operational safety
inspections and other means, whether TEPCO is appropriately implementing the recurrence prevention measures as well as the response to the issues for which NISA has directed for reform.

1. **Background**
   - On April 27, 2011, NISA received a report from TEPCO that for 1 female employee working at Fukushima Dai-ichi NPS following the 2011 Tohoku District-Off the Pacific Ocean Earthquake, the effective dose had reached approximately 18mSv between January 1 and March 31, 2011 (4th Quarter) which exceeds the dose limit specified in the Nuclear Regulation Act (5mSv/3 months), and that a further 2 workers were being assessed.
   - In response, NISA strictly warned TEPCO from the Director-General, and directed the company to investigate into the cause and to establish recurrence prevention measures, and to submit a report to NISA on a verification of radiation management framework at the plant as well as the establishment of management measures based on the results by May 2, 2011 (information released April 27, 2011).
   - Furthermore, on May 1, 2011, NISA received a report from TEPCO that 1 of the 2 female employees being assessed on April 27 was revealed to have received the effective dose of approximately 7.5mSv, in excess of the dose limit.
   - On May 2, 2011, TEPCO submitted a report pursuant to NISA’s direction, and a correction to this report on May 11.
   - Today (May 25), NISA presented its evaluation (draft) to the Nuclear Safety Commission (NSC), and in absence of express input of NSC, NISA finalized its evaluation and hand-delivered the direction document to TEPCO.

2. **Stern Warning to TEPCO (see Appendix 1 and 2)**
   - NISA expressed at TEPCO’s below violations of the law in radiation management for workers engaged in radiation work, strictly warned and requested TEPCO to ensure the implementation of recurrence prevention measures.
     - The radiation concentration of the air in the Seismic isolated Building at Fukushima Dai-ichi NPS was high enough to
warrant a mask, but masks were not worn

② Dosage exceeding the standard for the control area had been measured outdoors at Fukushima Dai-ni NPS by April 21, but no dose control was being performed

③ 5 female employees were working in areas that required radiation management, despite having not being registered as radiation workers, and 2 of them had been exposed to radiation exceeding the public dose limit (1mSv/year).

3. Directions to TEPCO (see Appendix 1 and 2)
   NISA instructed TEPCO as below, regarding further reform of worker safety, health management and environment.
   ① Secure personnel for radiation management and ramp up the management framework in order to conduct appropriate radiation control on-site
   ② Secure enough dosimeters to provide a unit to every worker
   ③ Arrange for a whole body counter to conduct a normal exposure assessment (once every 3 months) without delay
   ④ Arrange for a medical check-up required for radiation worker registration, without delay
   ⑤ Ensure a swift registration of radiation workers, including personnel from partner companies,
   ⑥ Report to NISA without delay any infraction of the law regarding radiation service
   ⑦ Regarding the investigation into the number of female radiation workers, reported to NISA on May 11, establish measures to ensure that an appropriate study is conducted to prevent future recurrence

4. Future Response by NISA
   In the future, NISA will verify, through operational safety inspections and other means, whether TEPCO is appropriately implementing the recurrence prevention measures as well as the response to the issues for which NISA has directed to reform.
(Contact Person)
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Appendix 1


May 25, 2011
Nuclear and Industrial Safety Agency

1. Background

- TEPCO reported to Nuclear and Industrial Safety Agency (hereinafter referred to as NISA) that 2 female employees, who were engaged in work at Fukushima Dai-ichi NPS after the occurrence of the earthquake, had an effective dose between January 1 and March 31, 2011 (4th Quarter) of approximately 18mSv (reported on April 27) and 7.5mSv (reported on May 1), which exceeded the dose limit specified in the Nuclear Regulation Act (5mSv/3months). NISA strictly warned TEPCO on April 27, when the first report was submitted, and directed TEPCO to verify the cause and measures as well as the radiation management system and submit a report by May 2.

- TEPCO submitted a report to NISA on the above-mentioned items on May 2. In a hearing of the report, the following fact became clear and NISA directed TEPCO to record it on the report.
  - 19 female employees are engaged in work and reported working as radiation workers at Fukushima Dai-ichi NPS. When NISA verified the details once again, 4 of them were not designated radiation workers and 2 of them had exceeded the effective exposure dose limit (1mS/year).

- NISA received a report, on May 11, that although there was no change in the overall number of female employees engaged in work, an employee who had not been designated as a radiation worker (0.55mSv) was added.

2. NISA's Evaluation
(1) Evaluation on the cause and measures for exceeding the dose limit

【Outline of TEPCO’s report】

The female employee did not wear a mask in the workplace near the entrance to the Seismic Isolated Building. Radioactive materials may have gotten into the Seismic Isolated Building when employees entered and exited the room. Therefore it is highly likely that the female employee suffered internal exposure while she was at the Seismic Isolated Building. TEPCO will implement the following as recurrence prevention measures:

① Female employees will no longer be permitted to work in Fukushima Dai-ichi NPS after March 23.

② Reduction of radioactive materials inside the Seismic Isolated Building will be attempted by placing local exhaust fans inside, replacing the flooring and adding lead shields to the windows, etc.

【NISA’s Evaluation】

The evaluation of external exposure dose for staying in the Seismic Isolated Building was delayed for responding to emergency after the occurrence of the earthquake and investigation of internal exposure was delayed because concentration of radioactive materials in the air was not perceived. TEPCO failing to comply with the legal limit (5mSv/3months) for the 2 employees creates a problem in managing radiation dose. 【Stern Warning 1】

Furthermore, as to prevent radioactive materials from being brought into the Seismic Isolated Building, delay in setting a Changing Area (dressing room for protective clothing) to cause an expansion of contamination in the Seismic Isolated Building is a problem. 【Stern Warning 1】

TEPCO has ①no longer permitted female employees to work at Fukushima Dai-ichi NPS since March 23 and ②connected the outside entrance of the Seismic Isolated Building with prefabricated house (dressing room for protective clothing, etc.) and installed local exhausters, decontaminated the Seismic Isolated Building by cleaning the floor and installed a rest area with screening area near the Seismic Isolated Building so that employees do not have to wait at the entrance of Seismic Isolated Building in order to reduce the concentration of radioactive materials in the air inside the Seismic Isolated Building. Therefore, NISA has judged that
the cause and countermeasures are considered appropriate.

(2) Verification of Radiation Management System and Evaluation on Future Radiation Management

① Area to implement radiation control

【Outline of TEPCO's report】

・ Fukushima Dai-ichi NPS premises were handled as equivalently as “controlled area.”
・ At Fukushima Dai-ni NPS, setup to “controlled area” was not modified, however dose management on outdoor work area was implemented.

【NISA's Evaluation】

・ Fundamentally, controlled area must be established if radiation level is above the establishment standard of controlled area (1.3mSv/3 months). Although Fukushima Dai-ichi NPS, which is under emergency situation, can not be established as controlled area that should manage radioactive materials, restricting access to the premises from the standpoint of radiation protection/management of radiation workers and taking safety measures, such as wearing of protective clothing and mask are appropriate. Furthermore, in order to supplement the deficit of dosimeter at Fukushima Dai-ichi NPS, dosimeters were procured in haste, though it was not fully put in use. NISA verbally warned TEPCO for designating representatives to carry a dosimeter meantime and the radiation exposure of 3 employees at the turbine building caused by inadequate radiation management. It is determined that although it was an emergency operation and in inevitable circumstances, TEPCO should fulfill its responsibility as an operator in the future.
・ Although wearing of dosimeter was not enforced in the Seismic Isolated Building, the radiation dose exceeded the establishment standard for controlled area. Controlled area was expanded to all the premises since mid-April and it is considered imperative to retroactively integrate the radiation exposure received while staying at the Seismic Isolated Building into radiation management of employees.
It is a problem that radiation management was not implemented regardless of the fact that the radiation dose of the outside Fukushima Dai-ri NPS exceeded the establishment standard for controlled area until April 21 due to the effects of radiation from Fukushima Dai-ichi NPS. [Stern Warning 2] On the other hand, although the concentration of radioactive materials in the air did not reach the concentration limit, radiation protective measures, such as wearing of necessary protective clothing (Tyvek suit or other) and rubber gloves, were enforced. As future countermeasures, it is judged appropriate that radiation exposure dose for the period between the occurrence of earthquake and April 21 should be managed by integrating values of nearby monitoring posts according to the sojourn time and controlled area should be established and clearly indicated with rope barriers based on the result of complete survey of NPS premises.

2) Management of operations as well as protective wear and equipment for radiation control measures.

[Outline of TEPCO’s report]

• As Fukushima Dai-ichi NPS is under the circumstances in which concentration of radioactive materials throughout the premises is high, wearing of protective clothing (Tyvek suit or other), gloves and protective mask is enforced.

• In preparation for the contingency, such as increase again in concentration of radioactive materials in the air of Seismic Isolated Building at Fukushima Dai-ichi NPP, necessary measures such as installation of Clean-House and wearing of protective mask will be taken in advance.

• Wearing of protective clothing and equipment is enforced in line with the operational environment due to the fact that radiation level at Fukushima Dai-ri NPS is high compared to that of before the earthquake.

• When drafting an operational plan at an area with high level radiation, TEPCO will thoroughly conduct surveys in advance, and make employees aware of the situation. It will also provide education and training on radiation management. (Fukushima Dai-ichi and Fukushima Dai-ri)
• Access to high-radioactive areas will be restricted with rope. (Fukushima Dai-ichi, Fukushima Dai-ni)

[NISA's Evaluation]
• TEPCO was slow to recognize the concentration of radioactive materials in the air of the Seismic Isolated Building and started to take measures such as installing local exhausters after realizing that concentration of radioactive materials of the air which radiation workers breathe exceeded the concentration limit (1×10⁻³Bq/cm³ of I¹³¹) on March 24. In addition, it is problematic that TEPCO did not enforce wearing of appropriate protective equipment such as wearing of protective mask until April 3, when the concentration went below the concentration limit. [Stern Warning 1]
• It is judged appropriate to take necessary measures, such as installation of Clean-House and wearing of protective mask in advance in preparation for the contingency, such as increase in concentration of radioactive materials in the air of the Seismic Isolated Building again.
• Concentration of radioactive materials is high throughout the premises of Fukushima Dai-ichi NPS and wearing of protective clothing (Tyvek suit or other), gloves, protective mask (depending on the concentration standard of radioactive materials in the air) should be enforced. It is appropriate to enforce wearing of protective clothing (Anorak), rubber gloves, overshoes etc. depending on the climate and contamination level of operational site and important to continuously enforce the measures without fail. Furthermore, wearing of the operational equipment even when traveling is deemed appropriate
• Wearing of proper protective equipment in line with the operational environment for doing operation in the Fukushima Dai-ni NPS premises is judged appropriate.
• When drafting an operational plans for Fukushima Dai-ichi and Dai-ni NPSs, TEPCO plans to expand prior surveys, such as environmental monitoring and strives to avoid unnecessary exposure by specifying high radiation areas and marking them out though, the measures are crucial for securing operational safety
and carrying them out infallibly is important.

- In light of lengthening of the recovery work, in order for securing safety of the employees against radiation, it is important to secure operational safety of the employees, further improve health management and living environment as well as secure employees.
- If operating in the building located in highly radioactive area in the future, prior measurements of radiation and radiation exposure dose of radiation managers, who will supervise the operation. Therefore, it is important to reinforce the structure of radiation managers. [Direction 1]

③ Management of External Radiation Dose

[Outline of TEPCO's report]
- Presently the individual dose management system is suspended and the management of the ledgers will be replaced with a simplified relation management system in the short-term. Thereafter, in the mid-to-long term, the system will also be replaced with an automatic apparatus that measures radiation level.
- Regular management is maintained at Fukushima Dai-ni NPS and radiation dose outside and amount of existing radioactive materials were not managed.
- Evaluated values based on environmental dose in the areas where employees go from the main entrance of the NPS to the Seismic Isolated Building, (Fukushima Dai-ichi, and Fukushima Dai-ni) or work in the Seismic Isolated Building (Fukushima Dai-ichi).

[NISA's evaluation]
- It is appropriate that although dose management system is disabled due to effects of the earthquake, dose management at Seismic Isolated Building is managed by the existing automatic apparatus which is connected to computers.
- Radiation management of radiation workers who perform work without going through the Seismic Isolated Building at Fukushima Dai-ichi NPS, is implemented mainly at J-village. It is presently handwritten in the ledger and then entered in to the computer. To improve this system, it should be managed by personal ID and barcode reading system by June and in the
mid-term run, the disable radiation dose management system should be recovered by linking the management system with the data base at the Seismic Isolated Building of Fukushima Dai-ichi NPS in order to thoroughly carry out radiation management.

- As for the open area that should be controlled at Fukushima Dai- ni NPS, TEPCO makes efforts to equip every employee with a dosimeter. Until dosimeters are no available to all employees, only representative persons carry it, though it should only be limited to operation in areas with small difference in radiation dose.

【Direction 2】If the entire premises of NPS become or are judged to be controlled area, it is imperative to perform radiation dose management with value of nearby monitoring post and traveling time when only traveling within the area.

④ Management of Internal Radiation Dose

【Outline of TEPCO’s report】

- Due to an increase in background radiation level, whole body counter (hereinafter referred to as “WBC”) is unable to be put in use at Fukushima Dai-ichi NPS.
- Although background radiation level was increased at Fukushima Dai- ni NPS, by extending measurement time and improving the accuracy of data, WBC is operational.
- Internal radiation dose of people, who do not perform outdoor operation at the Seismic Isolated Building, is measured using WBC.
- Measurement of internal radiation dose using WBC of all employees should be undertaken at an increased frequency of once a month.
- The number of operational WBC should be increased.

【NISA’s Evaluation】

- For the current situation of measuring internal radiation dose at Fukushima Dai-ichi NPS, background radiation is too high to use WBC. Presently, internal radiation dose is measured with an in-car WBC but there are too many measuring objects for one WBC and it cannot keep up with the demand.
- As countermeasures against the situation, WBC measurement should be preferentially given to those who stay at the Seismic
Isolated Building and also to those engaged in operation once a month starting sometime this year. Based in the J-village, 4 WBCs appropriable from Fukushima Dai-ichi and Dai-ni NPS should be transferred and 2 in-car WBCs from other organization and 6 new WBCs should be procured. Making use of them by September is effectual to speed up the measurement of internal radiation dose behindhand. Although internal radiation dose is usually assessed quarterly (once a month for female employees), presently it is not run on schedule, therefore speedy preparations to enable the regular internal radiation dose assessment as well as prompt assessment of employees, who have not received one are necessary.

【Direction 3】

⑤ Compliance with the Dose Limits

【Outline of TEPCO’s report】

・ At Fukushima Dai-ichi NPS, exposure dose of 5 employees who are not appointed or registered as radiation workers have exceeded the legal dose limit of 1mSv/year. 2 female employees had exceeded this limit until now.
・ Only “Radiation Workers” will be allowed to work in the Fukushima Dai-ichi NPS premises.
・ “Radiation Workers” who are not registered in the central registration center of radiation workers of Radiation Effects Association (hereinafter referred to as “the Central Registration Center”) are planned to be registered soon.
・ Integrated value of external and internal exposure of employees should be notified to each employee every month and the following management will be put in place.

✧ External exposure exceeds 100mSv internal exposure should be measured with WBC
✧ External exposure exceeds 150mSv → propriety of continuing work should be judged
✧ Total exposure (internal + external exposure) exceeds 200mSv → engagement in radiation work will not be permitted.
✧ Female employees are not permitted to work at Fukushima Dai-ichi NPS.
External exposure of female employees at Fukushima Dai-ni NPS (except for those diagnosed incapable of conceiving, notified the operator of no intention of getting conceived in writing or pregnant) should be managed so that it does not exceed 3mSv/3 months. * The quarterly legal dose limit is 5mSv for women. Each measurement commences on April 1, July 1, October 1 and January 1.

[NISA's Evaluation]

- It is against the law to allow 5 female employees of TEPCO who are not appointed radiation workers to work in the area that has to be designated as controlled area. Desk work at the Seismic Isolated Building was not recognized to be managed equivalently as controlled area and as a result, exposure dose of 2 employees exceeded the public dose limit (1mSv/year). It is problematic that management of area where radiation control was necessary was not in place. [Stern Warning 3]

- Although male employees of TEPCO work at Fukushima Dai-ichi NPS after being appointed as radiation workers, it is problematic that a medical checkup necessary for registration of radiation worker is not performed even in the emergency situation. Prompt consultation is necessary. [Direction 4]

- TEPCO has not confirmed whether subcontractors’ employees are appointed to be radiation workers by each employer. TEPCO gives necessary training and explains that registration to the Central Registration Center is conducted after the training as well as makes up a list of trainees and manages them. It is important that the system related to exposure dose management should be recovered quickly and registration of radiation workers to the Central Registration Center should be completed without fail. [Direction 5]

- Notifying every employee of the integrated value of external and internal exposure dose every month and managing exposure dose of employees according to the reported exposure dose as measures to comply with exposure dose is evaluated appropriate. Furthermore if external dose exceeds 150mSv, assessment of contamination of the face and internal exposure based on the
condition of environmental maintenance of the Seismic Isolated Building should be implemented and propriety of continuing work should be judged. In addition, view of long-term care for employees according to the exposure dose and the history of exposure should be considered.

While operation at Fukushima Dai-ichi NPS is accompanied with high radiation dose and should be dealt with radiation workers, non-radiation workers have engaged in it. If radiation management of employees infringes on the law, it should be reported to NISA promptly. 【Direction 6】

(3) Evaluation on cause and measures of mistake in survey of female employees

According to the May 11th TEPCO report, when reconfirming the work status of female employees, the way survey was conducted was insufficient and TEPCO had a problem correctly identifying the employees that were engaged in work in the Seismic Isolated Building.

The cause of this was considered to be a lack of verification in inspection because when the operational safety team at-site requested a report by group, it was made based on a memory of supervisor of each group without verifying identify or records such as register of names.

To resolve this problem, all female members of every group or their immediate supervisors directly checked for any errors.

NISA has judged that these TEPCO’s responses are insufficient in preventing recurrence prevention and demand formulation of recurrence prevention measures. 【Direction 7】

3. NISA’s Actions
(1) Stern Warnings to TEPCO (Refer to Appendix 2)

Although recurrence prevention measures are in place for properly managing radiation control of radiation workers, it is regrettable that TEPCO unacceptably violated the following laws and a strict warning is given.

① In spite of concentration of radioactive materials in the air Radiation Workers breathe in the Seismic Isolated Building of Fukushima
Dai-ichi NPS was above the concentration limit defined in the dose notice, wearing of appropriate protective equipments was not enforced.

② In spite of radiation dose of the outside buildings at Fukushima Dai-ni NPS exceeded the standard for establishing controlled area (1.3mSv/3 months) defined in the dose notice from March 14 through April 21, radiation dose was not controlled.

③ In addition to 2 female employees at Fukushima Dai-ichi NPS exceeded the dose limit (5mSv/3 months) defined in the dose notice, 5 female non-radiation workers worked in areas controlled area had to be established on violate the Rules for Commercial Power Reactors concerning the Installation, Operation, etc.. Moreover, exposure dose of 2 of the 5 employees exceeded the public dose limit (1mSv/year).

(2) Directions to TEPCO (Refer to Appendix 2)

In appropriately implementing radiation management of radiation workers, TEPCO has made efforts and improved the operational safety, health monitoring and living environment of employees. However, in light of potential lengthening of the recovery operation, NISA directs TEPCO to make efforts for further improvements and to improve the following selected points.

① Reinforcement of the system by increasing the number of staff to measure radiation so that advance radiation dose measurement of operational site and appropriate operational supervision should be implemented.

② Sufficient number of personal dosimeter should be secured so that every employee can carry one. Until sufficient number of personal dosimeter is secured, if a representative person carries a dosimeter in areas where radiation dose should be controlled, operational sites should be limited to areas that are confirmed to have homogenous radiation dose inside the controlled area in advance.

③ Assessment of radiation exposure dose of employees who have not completed it should be implemented promptly and internal radiation dose assessment should be implemented quarterly (once a month for female employees) without fail in accordance with the
Operational Safety Programs of Fukushima Dai-ichi and Dai-ni NPSs.

④ **Health examination** necessary for registration of radiation worker in accordance with the company regulations **should be implemented promptly**.

⑤ In order to manage exposure dose of radiation workers, the system related to exposure dose should be recovered quickly and registration to the Central Registration Center should be conducted without fail.

⑥ If radiation-work related event that violates the law occurs, it should be reported to NISA immediately.

⑦ Survey reported to NISA on May 11 regarding the number of female radiation workers was undertaken in inappropriate manner. Measures against recurrence should be formulated.

(3) Further Confirmation

Status of recurrence prevention measures implemented by TEPCO and responses to the above mentioned directions should be monitored by operational safety inspections.
Ministry of Economy, Trade and Industry

05.25.2011 Nuclear Number 1
May 25, 2011

Tokyo Electric Power Co. Inc.
President Masataka Shimizu

Director-General, Nuclear and Industrial Safety Agency
Nobuaki Terasaka
NISA-168d-11-5
NISA-326d-11-2

Evaluation Results of Radiation Management at Fukushima Dai-ichi and Fukushima Dai-ni Nuclear Power Stations (Direction)

Responding to the April 27th report of radiation worker who received radiation exceeding the dose limit specified in the Notification that specifies the dose limit (notification of dose) etc. pursuant to the Rules for Commercial Power Reactors concerning the Installation, Operation, etc. (MITI Ministerial Ordinance No. 77, 1978), Nuclear and Industrial Safety Agency (NISA) issued “On the Investigation of the Cause and Establishment of Recurrence Prevention Measures, etc., Regarding the Exposure Exceeding the Dose Limit of A Radiation Worker in Fukushima Dai-ichi NPS” (04.27.2011 Nuclear Number 4). With respect to the direction, TEPCO submitted “On the Investigation of the Cause and Establishment of Recurrence Prevention Measures, etc., Regarding the Exposure Exceeding the Dose Limit of A Radiation Worker in Fukushima Dai-ichi NPS” on 2 and 11 of May and NISA evaluated the report.

As a result of evaluation, it is regrettable that violations of the Rules for Commercial Power Reactors concerning the Installation, Operation, etc. (MITI Ministerial Ordinance No.77, 1978, hereinafter referred to as “Reactor Rule”) and notification of dose limit occurred and NISA strictly warned to TEPCO.
Regardless of the fact that concentration of radioactive materials in the air radiation workers breathe exceeded the limit (0.001Bq/cm$^3$ of I$^{131}$) specified in the Reactor Rule and notification of dose limit at the Seismic Isolated Building of Fukushima Dai-ichi NPS, wearing of appropriate protective equipment was not enforced.

In addition to the fact that exposure doses of 2 female employees exceeded the dose limit specified in the notification of dose limit (5mSv/3 months), 5 female non-radiation workers worked in the area where controlled area was supposed to be established violate the Reactor Rule. Furthermore, exposure dose of 2 of the workers exceeded the public dose limit (1mSv/year).

Despite radiation dose of the outside of buildings at Fukushima Dai-ni NPS exceeded the establishing standard for controlled area specified in the notification of dose limit (1.3mSv/3 months), exposure dose was not controlled.

Furthermore, NISA directs your company to further strive to improve worker's living, health management and work safety from the viewpoint of appropriate radiation management of radiation workers, and to take the following measures in order to comply with the Operational Safety Programs at Fukushima Dai-ichi and Dai-ni NPSs.

**Required Items**

1. In order to measure radiation dose of the operational site in advance and properly supervise operation, reinforce the system by increasing the number of staff to measure radiation, etc.

2. Secure sufficient numbers of personal dosimeters so that every employee can carry one. Until sufficient number of personal dosimeter is secured, if a representative person carries a dosimeter in areas where radiation dose should be controlled, operational sites should be limited to areas that are confirmed to have homogenous radiation dose inside the controlled area in advance.
3. Conduct promptly radiation exposure assessment of employees who have not completed, and conduct quarterly internal radiation assessment as soon as possible pursuant to the operational safety programs of Fukushima Dai-ichi and Dai-ni NPSs.

4. Implement quickly health examination necessary to register for radiation workers which is specified in your company regulations.

5. In order to implement dose management of radiation workers without fail, recover the system related to dose management promptly and perform registration to the Central Registration Center of Radiation Workers of Radiation Effects Association without fail.

6. Re-survey of the number of female radiation workers reported to NISA on May 11 was not conducted in an appropriate manner. Execute measures to conduct proper examination in order to prevent recurrence.

7. If an event related to radiation work violates the law, report to NISA as soon as possible.