
The Nuclear and Industrial Safety Agency (NISA) was reported from Tokyo Electric Power Co., Inc. (TEPCO) that water leakage presumably and mainly caused by freeze was confirmed on January 28, 29, and 30 including leakage from the connection part of the piping near the high-ground reactor water injection pump and many other points. In light of this, NISA directed TEPCO to investigate the causes, take prevention measures against recurrence, and formulate a plan for prevention measures against freeze, for making utmost efforts to prevent freeze of the safety-related facilities and the water treatment facilities of water containing radioactive material, and to prevent water leakage containing radioactive material. (Already announced on January 30).

This is to inform the public that NISA received a report from TEPCO today (February 10) responding to the above direction. NISA will request TEPCO to immediately implement the measures according to the contents of the report, and the measures will be confirmed by local nuclear inspectors whether to be proceeded steadily.

1. Course of Event

The Nuclear and Industrial Safety Agency (NISA) received a report from Tokyo Electric Power Co., Inc. (TEPCO) on January 28, 29, and 30 that a large number of water leakage points were identified including the leakage from the connection part of the piping near the high-ground reactor water injection pump and other points in Fukushima Dai-ichi Nuclear Power Station (NPS), Tokyo Electric Power Co., Inc. (TEPCO).

TEPCO reported that these leakages were presumably caused by freeze, and therefore, NISA directed TEPCO to investigate causes, take prevention measures against recurrence, strengthen patrolling and check including night-time patrol, and formulate a plan for measures against freeze in order to make utmost efforts to prevent the safety-related facilities and the water
treatment facilities of water containing radioactive material from freezing, and also make utmost efforts to prevent water leakage containing radioactive material.

Responding to these directions, NISA received today (February 10) a report from TEPCO.

2. Outline of the report

(1) Causes

Prevention measures against freeze including installation of heat insulating materials, etc., have been implemented according to the status of operation, in considering the necessity of continued operation of facilities and effects of leakage (including radioactive material). Due to unusual cold wave in late January, 2012, leakage events by freeze frequently occurred. These freeze leakage points can be divided into the following two categories.

(i) Heat insulating material has not been installed yet though that is a part of on-going prevention measures against freeze.

(ii) The prevention measures against freeze have been implemented as planned, however, they are insufficient.

(2) Prevention against recurrence

Leakage incidents caused by freeze are divided into the following two categories, their causes will be examined, and prevention measures against recurrence will be examined and implemented as follows.

(i) The measures are systematically proceeding, however, there are some unfinished points (such as the flange part of the nuclear reactor water injection line and others).

Actions: Installation of heat insulating material, covering devices, and others by mid-February

(ii) The measures have been implemented, however, there are some insufficient points (including instrument piping, insufficient water drainage).

Actions: Installation of heat insulating material and sufficient water drainage using drains, etc. will be carried out for safety-related facilities (such as spent fuel pool cooling systems, water treatment systems) by mid-February. The similar actions for the rest of the facilities will be promptly taken.

In addition, in order to prevent leakage to outside, paroling is to be increased in frequency from once a day to twice a day for enhancing
walk-down check.

(3) Effects of leaked water on the outside of the NPS site

Concerning the leakage into side ditches from the emergency high-ground reactor water injection pump (C), as a result of the nuclide analysis of water, which was obtained from the discharge channel and the water discharge canal, etc., no significant change was found because the cesium level was less than the detection limit on the downstream side, therefore, NISA evaluated that there was no outflow to the ocean.

3. Actions taken by NISA

Concerning the contents of the report, NISA confirmed that effective measures for freeze prevention were formulated and implemented according to the priority order from the viewpoint of ensuring safety, after conducting attribution analysis of the leakage.

NISA will direct TEPCO to promptly implement the measures in accordance with the contents of the report, and the measures will be confirmed by local nuclear inspectors to be proceeded steadily.

Appendix: Regarding Responses to Water Leakage near Emergency High-ground Reactor Water Injection Pump in Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co., Inc. (TEPCO)

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