The Nuclear Regulation Authority has received a report from TEPCO regarding fuel rods’ partially touching each other in fuel assemblies in Unit 5 at Kashiwazaki-Kariwa Nuclear Power Station, Tokyo Electric Power Co., Inc.

There was no impact of radioactive material on the environment in this event.

1. Contents of the report from TEPCO
   On October 16, during an inspection of fuel assembly channel boxes in Unit 5 at Kashiwazaki-Kariwa NPS, the water rods of the two fuel assemblies were confirmed to be bent. Then, a detailed inspection for the two fuel assemblies was conducted using a fiberscope, and it was confirmed that part of the fuel rods were touching each other. Today (Dec.12), TEPCO reported it to the NRA as an event requiring the report based on the Nuclear Regulation Act.

   *Hollow tube installed in the center of the fuel assembly, and the output inside the fuel assembly is optimized by passing water through the tube.

2. Impact on the safety of facilities
   In this event, it was presumed that the fuel rods became bent due to deformation of fuel assembly water rods, which made the adjacent fuel rods touching each other. However, the fuel assemblies have been cooled in the spent fuel pool in a stable condition and no leakage was confirmed with the fuel rods.

   No significant changes were confirmed with the electric conductivity of the spent fuel pool water and with the area monitor results around the pool. There was neither impact of radioactive material on the environment nor the radiation exposure to workers in this event.

3. Actions taken by the NRA
   Regarding this event, on October 19, the NRA directed the operator to grasp the
situation and investigate the causes, and the NRA confirmed the investigative status of the operator to date. Further, the local nuclear safety inspectors have been confirming the safety status and operator’s responses on the site. The NRA will continue to strictly verify operator’s cause investigation and prevention measures against recurrence.

(Results of provisional INES (*) event rating)

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Rating basis: In this event, due to deformation of water rods caused by excessive loads on the fuel assemblies, the fuel rods were touching each other. Although no leakage of radioactive material from the fuel rods was confirmed, the core was loaded with the water rods and fuel rods in an abnormal manner in the reactor. As a result, defense in depth has deteriorated and therefore, the rating was judged as INES level 1 “Anomaly”.

*INES Evaluation:*
INES (International Nuclear and Radiological Event Scale) is an indicator used to promptly communicate the safety significance of a reported nuclear and radiological incidents or accidents. Events are evaluated based on 3 rating criteria (namely, criterion 1: people and the environment, criterion 2: radiological barriers and controls at facilities, and criterion 3: defense in depth) and the highest level among 3 ratings is adopted as the INES rating level of the event. The INES levels range from Level 0 (no safety significance) to Level 7 (major accident).

Reference:
Attached: “Fiberscope inspection results (Upper part tie plates and top part spacers)” (Available only in Japanese)

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