

[Summary] Current Status of Shika Nuclear Power Station after the 2024 Noto Peninsula Earthquake (as of January 30)

- Three of the five off-site power supply transmission lines can currently receive power (required on-site power can be supplied by one off-site power supply line). Cooling of the spent fuel pool is also being sustained, and no safety related issues have occurred. Also, emergency diesel generators for use when off-site power becomes unavailable and multiple backup units consisting of high capacity power supply cars and high voltage power supply cars have been secured.
- In restoring the remaining two off-site power supply lines, we are aiming to bring the damaged Naka Noto Substation GIS (Gas Insulated Switchgear) back online by June. Cause analysis and review of measures shall be continued for the Unit 1 startup transformer and Unit 2 main transformer, and we will announce expected dates for restoration of these facilities when ready.
- Damaged areas other than transformers and off-site power supply related facilities have generally been restored or have had temporary measures implemented, and we are aiming for complete restoration sometime next fiscal year.

Response status regarding power supply facilities

Category	No.	Title	Temporary measures, etc.	Plan for future action	Expected date of completion
Transformer/off-site power supply	1-①	Oil leak from Unit 1 startup transformer and actuation of pressure relief device, activation of sprinkler firefighting system	<ul style="list-style-type: none"> Insulating oil leaking from No. 4 radiator has been collected. To isolate subject radiator, gate valve was closed and the radiator covered to prevent intrusion of rainwater. Gate valve for other radiators were also closed to prevent leak of insulating oil caused by damage inflicted by after quakes. 	<ul style="list-style-type: none"> Subject transformer shall undergo low voltage electric test by the end of January 2024, and replacement of actuated pressure relief device and the damaged rubber bag for conservator identified during inspection shall be completed by the end of February 2024. Review the possibility of temporarily restoring the startup transformer by separating the No. 4 radiator, and replace in the future. Conduct further survey regarding damage to the No. 4 radiator. 	Undecided (to be reviewed while considering inspection results)
	2-①	Oil leak from Unit 2 main transformer and activation of sprinkler firefighting system, actuation of pressure relief device	<ul style="list-style-type: none"> Insulating oil leaking from No. 11 cooling unit upper pipe joint has been collected. Oil film present in the drain around the transformer is being monitored continuously. Gate valve closed to isolate subject pipe joint, and subject joint covered to prevent intrusion of rainwater. Gate valve for other radiators were also closed to prevent leak of insulating oil caused by damage inflicted by after quakes. 	<ul style="list-style-type: none"> Subject transformer has seen actuation of ratio differential relay, and analysis of gas within oil confirmed indication of malfunction inside the transformer; therefore, low voltage electric test shall be conducted by the end of January 2024 and internal inspection conducted by mid-February. Also, in conjunction with internal inspection, non-destructive tests shall be performed for the No. 1-No. 10 cooling unit upper pipe joints. Review method for repairing transformer, including the pressure relief device, while considering results of the internal inspection. Conduct further survey regarding damage to the No. 11 cooling unit upper pipe joint. 	Undecided (to be reviewed while considering inspection results)
	Common-④	Status of off-site power supply (transmission line, substation facilities)	<ul style="list-style-type: none"> The Akasumi line 66kV has had its damaged insulator (one spot) and cut jumper line (one spot) replaced. 	<ul style="list-style-type: none"> No further maintenance planned for the Akasumi line 66kV Regarding Shika Naka Noto 500kV line, loss of insulator on the transmission line (two spots) and damage to bushing (insulator) on Naka Noto Substation GIS (Gas Insulated Switchgear) were confirmed, and insulators shall be repaired quickly in the future, and GIS bushing to be replaced by June 2024. 	June 2024
Emergency power supply	1-⑨	Automatic shutdown during trial run of Unit 1 high pressure core spray diesel generator	<ul style="list-style-type: none"> Trial run conducted after confirming that there were no equipment failure, and the Unit 1 high pressure core spray diesel generator was put on standby. 	—	Completed
Other transformer (No impact on nuclear safety as subject transformers are not used during shutdown.)	1-⑥	Actuation of pressure relief devices of Unit 1 house transformer and main transformer	—	<ul style="list-style-type: none"> Visual inspection to be conducted by the end of February 2024, and actuated pressure relief device to be manufactured and replaced by the first half of FY2024. 	First half of FY2024
	2-⑤	Actuation of pressure relief valve of Unit 2 excitor transformer	<ul style="list-style-type: none"> Leaked insulating oil has been collected. 	<ul style="list-style-type: none"> Low voltage electric test to be performed, and actuated pressure relief valve to be manufactured and replaced by the end of March 2024. 	End of March 2024

Response status for other facilities (excluding response completed before January 9th)

Category	No.	Title	Temporary measures, etc.	Plan for future action	Expected date of completion
Cooling water/make up water related (Pipes with leaks were used to transfer cooling water for air conditioning and water to clean analysis equipment; therefore, does not impact nuclear safety.)	1-③	Reduction of Unit 1 turbine component cooling water system surge tank inventory	<ul style="list-style-type: none"> Closed valve for damaged cooling coil, and confirmed that reduction of inventory had stopped. 	<ul style="list-style-type: none"> Damaged cooling coil to be repaired by summer 2024 when air conditioning features of HVAC will become necessary. 	Summer 2024
	1-⑤	Reduction of Unit 1 pure water tank inventory	<ul style="list-style-type: none"> Identified buried outdoor pipe that was leaking, and confirmed that reduction of inventory had stopped after closing valve. Pure water was supplied to the destination of pipe subject to leak using different means. 	<ul style="list-style-type: none"> Repair for leaking area to be performed during FY2024. 	During FY2024
Low pressure turbine related (Occurring while turbine was shutdown, and does not impact nuclear safety.)	2-③	“Expansion difference large” annunciator setoff at Unit 2 low pressure turbine	—	<ul style="list-style-type: none"> Reviews to be conducted regarding method to check turbine integrity, and repairs and restoration to be performed as necessary after overhaul inspection to check damage to turbine. 	Undecided (to be reviewed while considering inspection results)
Spent fuel storage pool related (Falling article was lightweight, and fell at a location remote from fuel, and therefore does not impact spent fuel.)	2-④	Articles falling into Unit 2 spent fuel storage pool	—	<ul style="list-style-type: none"> Method to collect articles that fell into the pool to be reviewed, and subject articles to be collected during FY2023. 	During FY2023
Building/on-site road related (Facilities continue to satisfy required functions, and damages are minor, and safety and performance are not affected.)	1-④	Inclination of Unit 1 discharge tank sea wall	<ul style="list-style-type: none"> Sandbags installed in gaps confirmed between seawall and concrete foundation. 	<ul style="list-style-type: none"> Restoration to be completed during FY2024 based on detailed survey involving measurement of subsidence. 	During FY2024
	1-⑦	Foundation of Unit 1 discharge tank and Unit 1 component cooling discharge connection tank sea wall subjected to subsidence	<ul style="list-style-type: none"> Sandbags installed in gaps confirmed between seawall and concrete foundation. 	<ul style="list-style-type: none"> Restoration to be completed during FY2024 based on detailed survey involving measurement of subsidence. 	During FY2024
	1-⑧	Ground becoming uneven at location where Unit 1 high voltage power car is used	<ul style="list-style-type: none"> Access restriction indication posted for subject area. 	<ul style="list-style-type: none"> Recoating using asphalt planned to be conducted by the first half of FY2024. 	First half of FY2024
	Common-①	Units 1, 2 waste treatment building expansion joint seal cover becoming detached	—	<ul style="list-style-type: none"> Repair of detached cover to be performed by April 2024. 	April 2024
	Common-②	Subsidence of paved concrete at the reclaimed loading area	<ul style="list-style-type: none"> Access restriction indication posted for subject area. 	<ul style="list-style-type: none"> After conducting detailed survey such as measurement of subsidence by the end of January 2024, restorations are to be completed by the first half of FY2024 in preparation for FY2024 loading work (of low level radioactive waste, etc.) 	First half of FY2024

[Transformer]

○Leak of insulating oil

Insulating oil leaking from Unit 1 startup transformer (1-①) and unit 2 main transformer (2-①) has been collected.

Both Units 1 and 2 receive power from off-site power. Also, emergency diesel generators, high capacity power cars and high voltage power cars have been secured.

⇒Necessary off-site power and emergency power sources have been secured, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc.



[Off-site power supply]

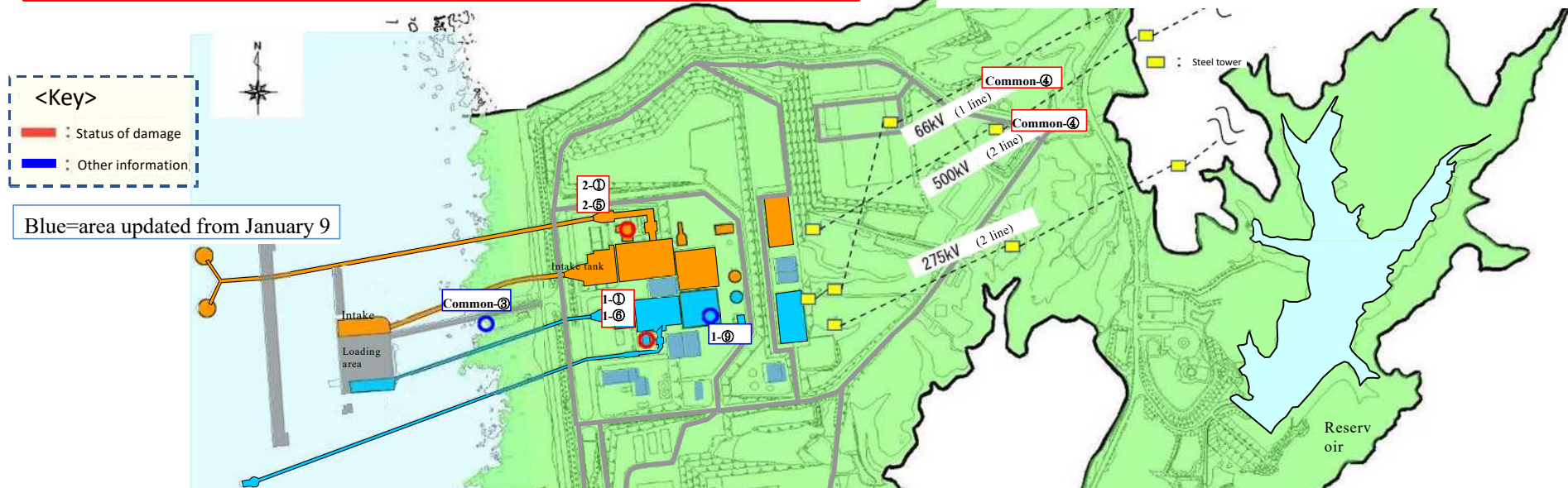
○Number of systems secured

Due to the malfunction of Unit 2 main transformer and the Naka Noto Substation Gas Insulated Switchgear (GIS) being partially damaged, two of the five off-site power transmission lines were compromised (Shika Naka Noto Line 500kV 2 lines), but three lines are still online.

Also, emergency diesel generators, high capacity power cars and high voltage power cars have been secured as emergency power sources.

⇒Necessary off-site power and emergency power sources have been secured, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc.

(Common-④)



[Outflow of insulating oil]

○Outflow of oil

Oil scattered from the actuation of sprinkler firefighting system at the Unit 2 main transformer and the following rain causing oil to flow out into the front sea area via drains. Subject insulation oil (common-③) has been treated and collected.

After the above, insulating oil flowed once again into the front sea area; therefore, oil fences were installed along the coast and oil absorbing materials were installed in the drain to improve the situation. Reinforced monitoring is also in progress.

⇒Oil has been treated and collected. In addition, oil fences have been installed, and there is no impact on the coast.

[Transformer]

○Pressure relief device/pressure relief valve actuation

Pressure relief device/valve of Unit 1 main transformer, house transformer, Unit 2 excitor transformer were actuated, but this is normal and does not present any issues.

⇒Subject transformers are not used during shutdown, and there is no impact on nuclear safety.

(1-⑥, 2-⑤)

[Shutdown of emergency diesel generators]

After Shika Town experienced an earthquake of intensity five lower on January 16th, trial run of Unit 1 high pressure core spray diesel generator was conducted as safeguard measures, but subject generator shutdown automatically.

Survey of causes confirmed that equipment failure was not the cause, and subject generator was put on standby after the trial run. Unit 1 has currently secured three off-site power transmission lines, and integrity of three diesel generators has been confirmed.

⇒Unit 1 has secured three off-site power transmission lines and three emergency diesel generators, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc.

(1-⑨)



[Tsunami]

The water level gauge in the Unit 2 water intake tank confirmed that the water level had risen by approx. 3 meters, and it was decided to analyze water level fluctuations in the sea area.

A subsequent analysis using water level data in the water intake tank assessed that the water level had risen by approx. 3 meters near the water intake. Furthermore, as a result of collecting, analyzing, and evaluating wave height meter data, it was confirmed that the water level had risen by approx. 3 meters near the loading area.

⇒ Power station elevation is 11m, and is therefore not affected. (2-⑥)

[Low pressure turbine]

○ **Turbine annunciator “expansion difference large” set-off**
Annunciator “expansion difference large” was set-off at the shutdown Unit 2 low pressure turbine.

⇒ Annunciator was setoff while turbine was shutdown, and does not impact nuclear safety. (2-③)

[Spent fuel storage pool]

○ **Scattering of pool water**

Sloshing of Units 1, 2 spent fuel storage pool water caused water to scatter onto the floor, but the volume scattered was minimal, and did not impact pool levels and radiation levels outside the pool. Scattered water has been wiped clean.

⇒ Pool level has not changed, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc.

(1-②, 2-②)

○ **Articles falling into pool**

Confirmed that one of the parts used for reactor coolant recirculation pump inspection, stored in the Unit 2 spent fuel storage pool had fallen to the bottom of the pool.

⇒ The subject article is light, and fell at a location remote from fuel; therefore, there is no impact to spent fuel.

(2-④)

[Cooling water, make up water]

○ **Reduced inventory**

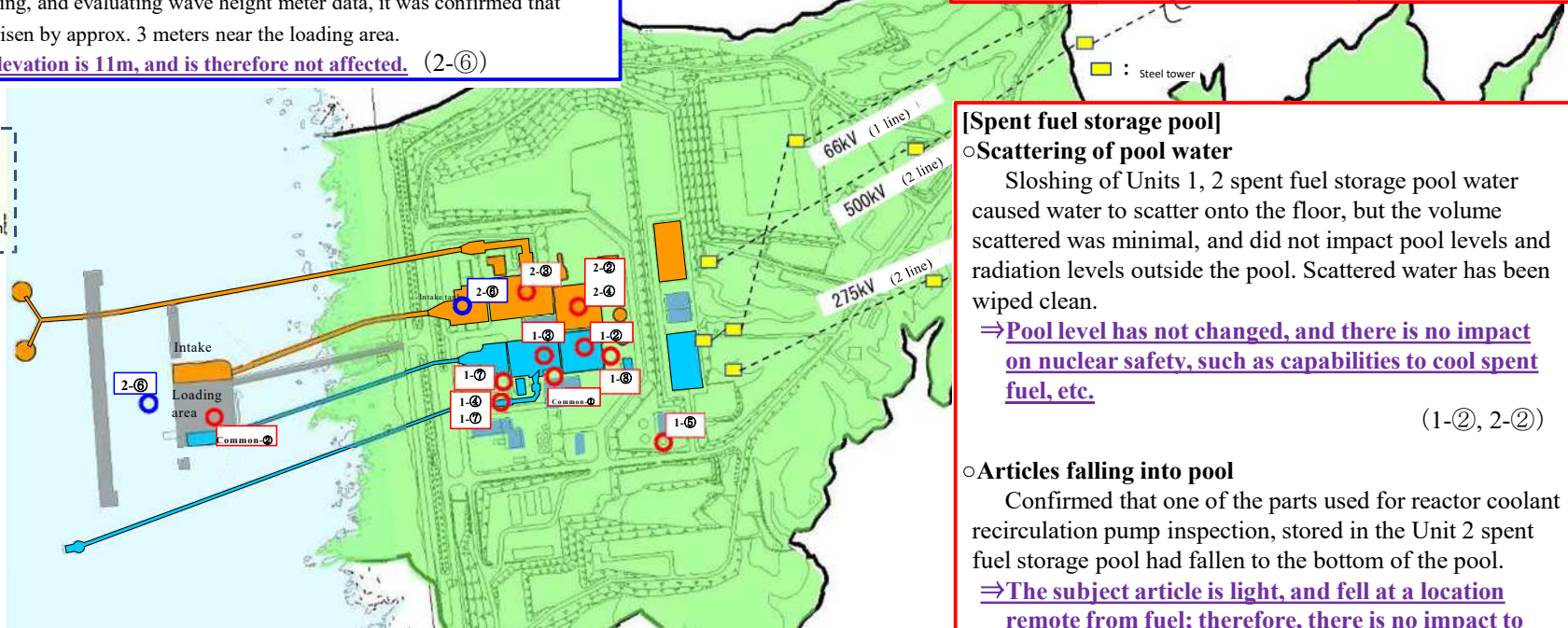
Inventory level reduction of Unit 1 turbine component cooling water system surge tank and pure water tank were confirmed, however causes for both were identified and the reduction in levels were halted.

⇒ Pipe subject to leaks were used to transfer cooling water for air conditioning and cleaning water for analysis equipment, and there is no impact on nuclear safety.

(1-③, 1-⑤)

<Key>

- Status of damage
- Other information



[Building, on-site roads, etc.]

○ **Subsidence and inclination, etc.**

Subsidence has occurred in paved concrete at the reclaimed loading area (common- ②), Unit 1 discharge tank and Unit 1 component cooling discharge connection tank seawall foundation (1- ⑦), location where Unit 1 high voltage power car is used (1- ⑧); and inclination of Unit 1 discharge tank sea wall (1-④), Units 1, 2 waste treatment building expansion joint seal cover becoming detached (common- ①) had also occurred.

⇒ All of the equipment satisfied the necessary functions, the damage was minor, and there are no problems with safety or use.



Current Status of Shika Nuclear Power Station after the 2024 Noto Peninsula Earthquake (as of January 30)

Some facilities did receive damage from the 2024 Noto Peninsula Earthquake, but off-site power and necessary monitoring features, cooling features and emergency power supply were secured, and main buildings and on-site roads, etc. were not damaged. No issues have arisen for securing the safety of reactor facilities.

Unit 2 spent fuel storage pool
Photographed January 23

On-site road
Photographed January 26

Unit 2 emergency diesel generator
Photographed January 23

66kV Akasumi line
Photographed January 22

Unit 1 spent fuel storage pool
Photographed January 22

High capacity power car
Photographed January 23

High voltage power car
Photographed January 23

Technical Support Center
Expanded technical support center
Photographed January 22

On-site road
Photographed January 23

Unit 1 emergency diesel generator
Photographed January 23

275kV Shika nuclear power line
Photographed January 22

<Key>
— : Power related
— : Spent fuel storage pool
— : Other

Occurring Event and Status of Response up to the Present

Attachment 2

[as of January 30, 2024]

***Blue, underlined text indicates areas updated after disclosure on January 9th
(Scheduled response period is currently under review)**

***Response has been completed for yellow hatched areas (all temporary measures have been completed)**

Shika Nuclear Power Station Unit 1

No.	Date disclosed	Title	Event overview	Response status
1-①	2024/1/2	Unit 1 Oil leak from startup transformer and actuation of pressure relief device, activation of spray firefighting system	<ul style="list-style-type: none"> • Confirmed that approx. 3,600 liters (estimate) of insulating oil* from the transformer had leaked into the weir. <li style="padding-left: 20px;">*Amount held: 52,200 liters (in the main unit of transformer: 42,000 liters) • Confirmed that pressure relief device had actuated when the earthquake occurred. • Manually activated spray firefighting system • Switched to standby transformer, and currently receiving power from the Akasumi line (66kV). Can also receive power from the Shika nuclear power line (275kV) via the Unit 2 electrical power distribution system. Also, emergency diesel generators, high capacity power cars and high voltage power cars have been secured as emergency power sources. ⇒Necessary off-site power and emergency power sources have been secured, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc. 	<ul style="list-style-type: none"> • Approx. 4,200 liters have been collected on January 2nd when including rain water. • Closed the gate valve of the radiator leaking insulating oil, and conducted covering to prevent intrusion of rainwater. Also, gate valves for other radiators were closed to prevent leak of insulating oil caused by damage from after quakes. • <u>Low voltage electric test to be conducted by the end of January 2024.</u> • <u>Replacement of actuated pressure relief device and the damaged rubber bag for conservator identified during inspection shall be completed by the end of February 2024.</u> • <u>Review if startup transformer can be temporarily restored by separating from the radiator, the cracked top radiator pipe confirmed during inspection, and also replace in the future.</u> • <u>Conduct further survey of damage on cracked top radiator pipe confirmed during inspection.</u>
1-②	2024/1/2	Unit 1 Scattering of spent fuel storage pool	<ul style="list-style-type: none"> • Confirmed sloshing in spent fuel storage pool. • Amount scattered is approx. 95 liters (approx. 0.8mm decrease in pool inventory), amount of radiation is approx. 17,100Bq, no impact of radiation outside. ⇒Almost no changes to pool level, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc. 	<ul style="list-style-type: none"> • Wiped scattered water on January 4th. • Spent fuel currently being cooled in stable condition.

Occurring Event and Status of Response up to the Present

Attachment 2

[as of January 30, 2024]

No.	Date disclosed	Title	Event overview	Response status
1-③	2024/1/2	Unit 1 Reduction of turbine component cooling water system surge tank inventory	<ul style="list-style-type: none"> Cooling water leaked from the cooling coil of the heating, ventilation and air conditioning system (hereinafter “HVAC”) of the Reactor Building and Turbine Building. ⇒Cooling water is for air conditioning, and there is no impact on nuclear safety.	<ul style="list-style-type: none"> Valves were closed and decrease in levels were confirmed to have stopped. Damaged cooling coils scheduled for repairs before summer 2024 when air conditioning using HVAC becomes necessary.
1-④	2024/1/2	Unit 1 Inclination of discharge tank sea wall	<ul style="list-style-type: none"> The steel sea wall (height 4m) autonomously installed as tsunami measures around the Unit 1 discharge tank (perimeter approx. 108m), was confirmed to have inclined by approx. several cm due to impact of the earthquake. ⇒The deformation is minor and has no impact on performance. No other inclination was identified.	<ul style="list-style-type: none"> Installed sandbags in the gap identified between the discharge tank sea wall and concrete foundation. Conduct detailed survey in the future to measure subsidence, etc., and based on results, plan restoration in FY2024.
1-⑤	2024/1/2	Unit 1 Reduction of pure water tank inventory	<ul style="list-style-type: none"> Confirmed the inventory of pure water tank to be decreasing by about approx. 7.3 liters (438 liters/hour) every minute. Amount leaked was tiny compared to production capability for pure water (20,000 liters/hour) ⇒Water in the pure water tank are to be used to clean analysis equipment, and there is no impact on nuclear safety.	<ul style="list-style-type: none"> Identified leaking pipe which was buried outdoors. Valve was closed, and confirmed that reduction of inventory levels had stopped. Pure water was supplied to the destination of pipe subject to leak using different means. Repair for leaking area to be performed during FY2024.
1-⑥	2024/1/5	Unit 1 Actuation of pressure relief devices of house transformer and main transformer	<ul style="list-style-type: none"> Confirmed actuation of pressure relief devices of Unit 1 house transformer and Unit 1 main transformer during earthquake. (Oil enclosed in the transformer sloshed around during an earthquake, causing the internal pressure to rise temporarily, causing the pressure relief device to actuate correctly. Confirmed that there are no oil leaks from the event.) ⇒Actuation of pressure relief devices of the house transformer and main transfer were confirmed, but this is normal and without issue.	<ul style="list-style-type: none"> Conduct visual inspection by end of February 2024. Regarding actuated pressure relief device, new devices shall be manufactured and replaced by the first half of FY2024.

Occurring Event and Status of Response up to the Present

Attachment 2

[as of January 30, 2024]

No.	Date disclosed	Title	Event overview	Response status
1-⑦	2024/1/5	Unit 1 Foundation of discharge tank and Unit 1 component cooling discharge connection tank sea wall subjected to subsidence	<ul style="list-style-type: none"> • The foundation of the steel sea wall (height 4m) autonomously installed as tsunami measures around the Unit 1 discharge tank and Unit 1 component cooling discharge connecting tank, was confirmed to have subsided by approx. several cm due to impact of the earthquake. <p>⇒ There are no abnormalities with the exception of the partial incline of the sea wall (1-4), and sandbags were installed in gaps of few cm confirmed at the subsided area; therefore, there is currently no impact on function.</p>	<ul style="list-style-type: none"> • Sandbags installed in gaps confirmed between discharge tank sea wall and concrete foundation. • Conduct detailed survey in the future to measure subsidence., and based on results, plan restoration in FY2024.
1-⑧	2024/1/5	Unit 1 Ground becoming uneven at location where Unit 1 high voltage power car is used	<ul style="list-style-type: none"> • Confirmed that unevenness of several cm had appeared on the road near the site where Unit 1 high voltage power car is used. <p>⇒ The high voltage car can be used without issue of deployed in a different area nearby; therefore, there is no impact.</p>	<ul style="list-style-type: none"> • Access restriction indication posted for subject area. • Recoating of uneven area using asphalt planned to be conducted by the first half of FY2024.
1-⑨	2024/1/17	Unit 1 Automatic shutdown during trial run of high pressure core spray diesel generator	<ul style="list-style-type: none"> • After Shika Town experienced an earthquake of intensity five lower on January 16th, trial run of Unit 1 high pressure core spray diesel generator was conducted as safeguard measures, but subject generator shutdown automatically. <p>No abnormality was observed in the trial run (conducted January 4th) conducted following the Shika Town earthquake of intensity seven on January 1st.</p> <p>⇒ No impact on power supply as three off-site power lines (Akasumi line (66kV one line) and Shika nuclear power line (275kV two lines) are secured, and two out of three Unit 1 emergency diesel generators are sound.</p>	<ul style="list-style-type: none"> • Regarding this event, causal survey did not identify abnormality in equipment. Also, no abnormality was identified in the load test carried out afterwards. • Applied changes to procedures regarding measures to be taken against estimated cause, and high pressure core spray diesel generator was put on standby.

Occurring Event and Status of Response up to the Present

Attachment 2

[as of January 30, 2024]

Shika Nuclear Power Station Unit 2

No.	Date disclosed	Title	Event overview	Response status
2-①	2024/1/2	Unit 2 Oil leak from main transformer and actuation of pressure relief device, activation of spray firefighting system	<ul style="list-style-type: none"> • Confirmed that approx. 3,500 liters (estimate) of insulating oil* from the transformer had leaked into the weir. *Amount held: 122,500 liters (in the main unit of transformer: 122,500 liters) • Confirmed actuation of pressure relief device and spray firefighting system. (also confirmed that there was no actual fire) • Switched to standby transformer, and currently receiving power from the Shika nuclear power line (275kV). Can also receive power from the Akasumi line (66kV). Also, emergency diesel generators, high capacity power cars and high voltage power cars have been secured as emergency power sources. <p>⇒Necessary off-site power and emergency power sources have been secured, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc.</p>	<ul style="list-style-type: none"> • Approx. 19,800 liters of oil have been collected on January 5th (estimated). (When including rain water, approx. 24,600 liters. Amount collected corrected (January 5th)) • Closed the gate valve of the radiator leaking insulating oil, and conducted covering to prevent intrusion of rainwater. Also, gate valves for other radiators were closed to prevent leak of insulating oil caused by damage from after quakes. • In addition to actuation of ratio differential relay, and analysis of gas within oil confirmed indication of malfunction inside the transformer; therefore, low voltage electric test shall be conducted by the end of January 2024 and internal inspection conducted by mid-February. Also, in conjunction with internal inspection, non-destructive tests shall be performed for cooling unit upper pipe joints. Review method for repairing transformer, including the pressure relief device, while considering results of the internal inspection. • Conduct further survey of damage on cooling unit upper pipe joints which caused the oil leak.
2-②	2024/1/2	Unit 2 Scattering of spent fuel storage pool	<ul style="list-style-type: none"> • Confirmed sloshing in spent fuel storage pool. • Amount scattered is approx. 326 liters (approx. 1.3mm decrease in pool inventory), amount of radiation is approx. 4,600Bq, no impact of radiation outside. <p>⇒Almost no changes to pool level, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc.</p>	<ul style="list-style-type: none"> • Wiped scattered water on January 3th. • Spent fuel currently being cooled in stable condition.

Occurring Event and Status of Response up to the Present

Attachment 2

[as of January 30, 2024]

No.	Date disclosed	Title	Event overview	Response status
2-③	2024/1/2	Unit 2 “Expansion difference large” annunciator setoff for low pressure turbine	<ul style="list-style-type: none"> • Annunciator “expansion difference large” was setoff due to swaying from earthquake. ⇒ Occurred when turbine was shutdown, and does not impact securing of nuclear safety. 	<ul style="list-style-type: none"> • Review method to check integrity of turbine with vendor, and swiftly conduct overhaul inspection to check damage to turbine. Conduct repairs and restoration if necessary.
2-④	2024/1/2	Unit 2 Articles falling into spent fuel storage pool	<ul style="list-style-type: none"> • Confirmed that one of the parts used for reactor coolant recirculation pump inspection, stored in the Unit 2 spent fuel storage pool had fallen to the bottom of the pool. ⇒ The subject article is light (polyester material), and fell at a location remote from fuel (approx. 4m); therefore, there is no impact to spent fuel. 	<ul style="list-style-type: none"> • Review method for collecting subject article with vendor, and fallen article to be collected in FY2023.
2-⑤	2024/1/3	Unit 2 Actuation of pressure relief valve of exciter transformer	<ul style="list-style-type: none"> • Confirmed that actuation of pressure relief valve at the top of transformer caused approx. 100 liters (estimated) of insulation oil of transformer to be discharged to the weir via feed tube. (Earthquake causing the oil in transformer to slosh resulted in temporary increase of internal pressure which led to the normal actuation of the pressure relief valve.) ⇒ The exciter transformer is used during plant operation; therefore, there is no impact on nuclear safety, 	<ul style="list-style-type: none"> • Apporx. 100 liters of oil collected on January 5th. • Low voltage electric test to be performed, and actuated pressure relief valve to be manufactured and replaced by the end of March 2024.
2-⑥	2024/1/3	Unit 2 Increase of seawater level inside intake tank	<ul style="list-style-type: none"> • Reconfirming power station data from January 1st confirmed that Unit 2 intake tank seawater level had increased by approx. 3m compared to normal levels. ⇒ Sea embankment and sea wall 4m high are installed at EL11m on site premises; therefore, an increase of approx. 3m will not have an impact on power station facilities. 	<ul style="list-style-type: none"> • Confirmed an increase of approx. 3m in the Unit 2 intake tank using a level gauge, and fluctuations in sea levels was analyzed. The data for intake tank levels was used to perform analysis, and evaluation concluded that there was an increase of approx. 3m in levels near the intake port. Furthermore, collection, analysis and evaluation of data from the wave meter confirmed that there approx. 3m of sea level increase near the loading area.

Occurring Event and Status of Response up to the Present

Attachment 2
[as of January 30, 2024]

Common for Shika Nuclear Power Station Units 1 and 2

No.	Date disclosed	Title	Event overview	Response status
Common-①	2024/1/2	Units 1, 2 Waste treatment building expansion joint seal cover becoming detached	<ul style="list-style-type: none"> • Confirmed that metallic cover, which protects the rubber sealing material (expansion) connecting Units 1 and 2 waste treatment buildings, had become detached. Also, subject seal cover functions as a degradation prevention part for sealing material. ⇒Confirmed that there was no damage to sealing material. Also, there was no radiological impact outside. 	<ul style="list-style-type: none"> • The detached cover is planned to be repaired by April 2024.
Common-②	2024/1/5	Subsidence of paved concrete at the reclaimed loading area	<ul style="list-style-type: none"> • At the reclaimed part of the loading area, paved concrete had subsided as a result of the earthquake, causing uneven ground. ⇒No structural issue regarding the loading area. 	<ul style="list-style-type: none"> • After conducting detailed survey of subsidence by the end of January 2024, restoration is to be conducted by the first half of FY2024 in preparation of loading work for FY2024 (low level radioactive waste).
Common-③	2024/1/7	Oil film being confirmed on the sea in front of the power station	<ul style="list-style-type: none"> • Confirmed oil film (approx. 5m by 10m) floating on the sea surface in front of the Shika Nuclear Power Station • Actuation of spray fire fighting system in the event of the January 1 earthquake caused leaked insulation oil of the transformer to scatter, and it is assumed that subject oil flowed out into the sea via drain after rainfall. ⇒Leaked oil was neutralized and collected, and there is no impact on the environment. 	<ul style="list-style-type: none"> • Oil film was treated using neutralizers on January 7th. • Confirmed that the station in general was not subjected to other oil leaks (January 7). • Install oil fence, and continued focused monitored to check for residual oil in drains.
	2024/1/10	Oil film being confirmed on the sea in front of the power station	<ul style="list-style-type: none"> • Oil film was confirmed in the drain around the Unit 2 main transformer, and confirmation of the downstream side confirmed oil film floating on the ocean in front of the power station (approx. 100m by 30m, approx. 6 liters) ⇒There is no environmental impact of installing oil fence on the coast. 	<ul style="list-style-type: none"> • Installation of oil absorbing mats in the drain was improved, and strong monitoring resulting from the increase in monitoring frequency is continued. • Discharge gate for rain water installed in the drain downstream, and sea surface oil fence installation status is monitored round-the-clock and continuously strengthened. • Began removing crushed stones in the Unit 2 main transformer weir on January 14th (to survey cause of oil leak)

Occurring Event and Status of Response up to the Present

No.	Date disclosed	Title	Event overview	Response status
Common-④	2024/1/9	Status of offsite power supply (transmission line, sub-station facilities)	<ul style="list-style-type: none"> • Conducted inspection of transmission line connected to Shika Nuclear Power Station, and confirmed the following: (Shika nuclear power line 275kV two lines) <ul style="list-style-type: none"> • No abnormality (Akasumi line 66kV one line) <ul style="list-style-type: none"> • An insulator for the transmission line (one piece) and disconnected wire (one area) on the jumper line (cable connecting insulation device before and behind steel towers were confirmed, but there currently are no issues regarding performance of transmission lines. [No. 5 steel tower: one out of six damaged] [No. 3 steel tower: five out of 30 wires disconnected (Shika Naka Noto 500kV two lines) <ul style="list-style-type: none"> • Confirmed damaged gas insulated switchgear (GIS) bushing (insulating tube) in the Naka Noto Sub-station, damaged isolation on transmission line (two locations) [Line 2 switchyard anchor structure: 4 out of 53 damaged] [Line 1 No. 2 steel tower: 1 out of 36 damaged] • One out of two lines of the Shika Naka Noto line is online, and the Unit 2 main transformer is also out of service and cannot receive power. • Three lines (Shika nuclear power line no. 1 line, Shika nuclear power line No. 2 line, Akasumi line) are connected to Shika Nuclear Power Station as off-site power, and power can be supplied to both Units 1 and 2. Also, emergency diesel generators, high capacity power cars and high voltage power cars have been secured as emergency power sources. ⇒Necessary off-site power and emergency power sources have been secured, and there is no impact on nuclear safety, such as capabilities to cool spent fuel, etc. 	<p>(Akasumi line 66kV) Replaced damaged insulation (one piece) and disconnected jumper line (one area) on January 13th (Saturday). Due to the work performed, Unit 1 switched to Shika nuclear power line (275kV line 2) via Unit 2 electrical power distribution system.</p> <p>(Shika Naka Noto 500kV) Damaged insulators on transmission line shall be repaired promptly. Damaged GIS bushing (insulating tube) in the Naka Noto Sub-station shall be replaced by June 2024.</p>