Pre-service inspection

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Legal basis for the pre-service inspection

- TEPCO shall specified measures and facilities for operational safety and physical protection of specified nuclear fuel material in the implementation plan based on the Article 64-3(1) in the Regulation Act*.

- Also, TEPCO shall undergo an inspection conducted by the NRA about their activities in compliance with the implementation plan based on the Article 64-3(7) in the Regulation Act*.

- The NRA will perform the pre-service inspection to observe that facilities are constructing according to the implementation plan based on these requirements.

*the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors

Pre-service inspection procedures and reports

- Before starting the inspection, The NRA specifies measures and criteria for the pre-service inspection in the document called “Pre-service inspection procedure” based on the Article 22 in the NRA ordinance*.

- After the inspection, the NRA issues the letter of finishing pre-service inspection with the result of the inspection based on the Article 24 in the NRA ordinance*.

*the NRA ordinance for Operational Safety and Protection of Specified Nuclear Fuel Materials of the Nuclear Reactors at TEPCO’s Fukushima Daiichi NPS

NRA inspectors will perform pre-service inspection to confirm the specification at the following each timing based on the Article 20 in the NRA ordinance*.

(i) The facility becomes available for test to confirm structure, strength and leakage

- Materials and dimensions: be manufactured with certain materials and dimensions
- Visual observation: no abnormal exterior
- Assembling and location: be assembled and located to comply with the implementation plan
- Pressure and Leakage : resistible to the designed pressure and no leakage

(ii) Installation of the facility is completed

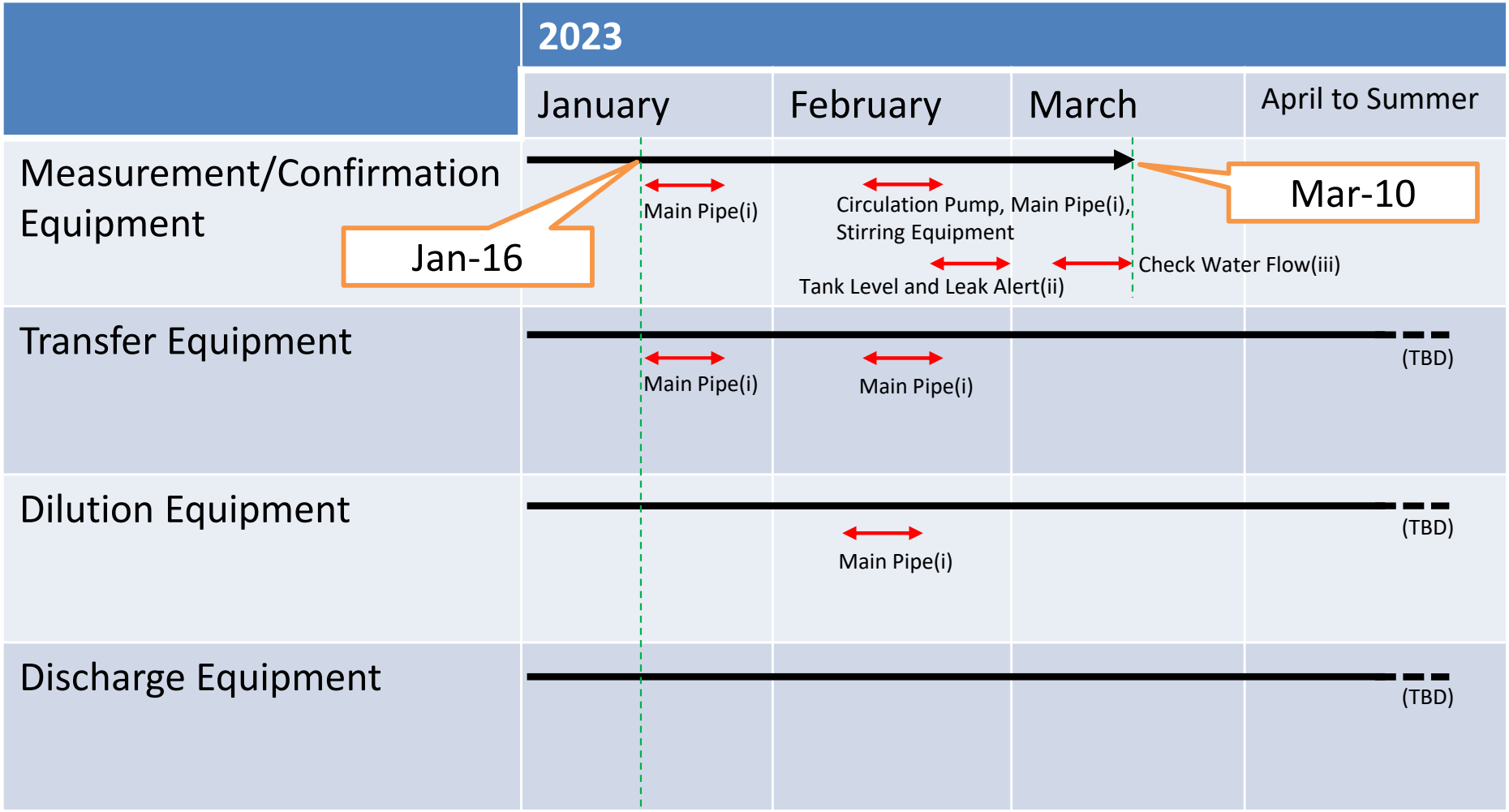
- Performance and functoin: Flow and head pressure, Logic test, Calibration, etc.
- Level and leakage alert: be able to alert certain water level or leakage rate
- Capacity of the dike : sufficient capacity to prevent overflow

(iii) The entire construction work is complete

- Practical test: No abnormal status, leakage and alert

*the NRA ordinance for Operational Safety and Protection of Specified Nuclear Fuel Materials of the Nuclear Reactors at TEPCO's Fukushima Daiichi NPS

Pre-service inspection Schedule*



(i) The facility becomes available for test to confirm structure, strength and leakage
(ii) Installation of the facility is completed
(iii) The entire construction work is complete

*This Schedule was reported on Nov-22 by TEPCO and could be changed.

Check items*

Circulation pumps, ALPS treated water transfer pumps, Stirring equipment, Sea water pumps

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Structural strength, Earthquake resistance	Visual Check	Check the visual of each part.	No significant defects.
	Installation Check	Check the installation conditions of the equipment.	Carried out construction and installation based on the Implementation Plan.
	Leakage Check	Check no leakage from the pressure resistant parts under the operating pressure.	No significant leakage from the pressure resistant parts.
Performance	Operation performance Check	Check the pump operation.	Satisfying the criteria described in the Implementation Plan. In addition, No abnormal noise, smoke, vibration, etc.

*Excerpts from II-2-50-Att.4 of the Implementation plan approved on 22-July-2022

Main pipes(Steel pipes)

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Structural strength, Earthquake resistance	Materials Check	Confirm the main materials described in the Implementation Plan.	Following the Implementation Plan.
	Dimensions Check	Confirm the dimensions and thickness described in the Implementation Plan with the records.	Following the Implementation Plan.
	Visual Check	Check the visual of each part.	No significant defects.
	Installation Check	Check the installation conditions of the pipes.	Carrying out construction and installation based on the Implementation Plan.
	Pressure resistance / Leakage Check	Hold a fixed time at 1.25 times the maximum working pressure, confirm that the product withstands the pressure and that there is no leakage from the pressure resistant parts.	Withstanding 1.25 times the maximum working pressure with no abnormalities. In addition, no leakage from the pressure resistant parts.
Functions and Performance	Confirmation of water flow	Check the water flow.	Confirm water flow.

Leakage Detectors and Alarms

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Structural strength	Visual Check	Check the visual of each part.	No significant defects.
	Installation Check	Check the installation position and conditions of the equipment.	Carrying out construction and installation based on Implementation Plan.
Functions	Leakage alarm confirmation	Check that the alarm activation as set.	Alarm activation within the allowable range.

Flow meter(ALPS treated water, sea water)

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Structural strength	Visual Check	Check the visual of each part.	No significant defects.
	Installation Check	Check the installation position and conditions of the equipment.	Carrying out construction and installation based on Implementation Plan.
Performance	Calibration Check	Check the indicated flow rate by input signal.	The Indicated flow rate within the allowable range.

Radiation monitor

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Structural strength	Visual Check	Check the visual of each part.	No significant defects.
	Installation Check	Check the installation position and conditions of the equipment.	Carrying out construction and installation based on Implementation Plan.
Functions	Radiation alarm confirmation	Check that the alarm activation as set.	Alarm activation with radiation level “High”.
Performance	Source Check	Check the indicated Dose rate by a radioactive test source.	The Indicated dose rate within the allowable range.
	Calibration Check	Check the indicated dose rate by input signal.	The Indicated dose rate within the allowable range.

Measurement/Confirmation Tanks

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Structural strength, Earthquake resistance	Materials Check	Confirm the materials to be used with a certificate of material. Check the delivery records and product specifications for the connecting pipe and connecting valve.	Using the materials described in the Implementation Plan. The product specifications (maximum working pressure) of the connecting pipes and connecting valves shall be equal to or higher than the water head pressure of the tanks.
	Dimensions Check	Check the main dimensions (plate thickness, inner diameter, and height).	Following the Implementation Plan.
	Visual Check	Check the visual of the tank body (including paint conditions), connecting pipes and connecting valves.	No significant defects.
	Installation Check	Check the assembly and installation.	No abnormality in the assembly condition and installation condition.
		Check the unevenness of the tank foundation.	No abnormal unevenness.

Measurement/Confirmation Tanks(Continued)

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Structural strength, Earthquake resistance	Pressure resistance / Leakage Check	Perform pressure resistance and leakage tests based on design and construction standards.	No significant leakage from any part and no drop in water level.
	Ground bearing capacity confirmation	Check the bearing capacity of the foundation of the tanks in the bearing capacity tests.	Satisfying the necessary bearing capacity.
Functions and Performance	Alarm confirmation	Confirm that alarm is activated by a signal associated with tank's water level "high-high".	Alarm activation by a signal associated with tank's water level "high-high".
	Dimensions check	Check the inner capacity of the barrier around the foundation.	Satisfying the capacity inside barrier equivalent to the required capacity.
	Visual check	Check the visual of the barrier around the foundation.	No significant defects.
	Storage function	Confirm tanks can store water without leakage.	No leakage from the tanks and attached facilities (connecting pipes, connecting valves, manholes, drain valves).

Measurement/Confirmation equipment

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Functions and Performance	Stirring Check	Check the stirring condition when starting equipment up	Certain water flow on the surface of the water in the tank and the current the allowable range.
	Water flow check	Check the water flow when starting pump up	Satisfying the flow rate(140m^3/h).In addition, No abnormal noise, smoke, vibration, etc.

ALPS treated water transfer equipment

Matters to be Confirmed	Check items	Details	Acceptance Criteria
Functions and Performance	Emergency isolation Check	Check the close of the emergency isolation valve with the emergency signal.	Close of the isolation valve with the signal.
	Confirmation of water flow	Check the water flow when starting pump up and flow control.	Be able to control the flow rate. In addition, No abnormal noise, smoke, vibration, etc.