



# SEAWATER INTAKE AND OUTFALL -OPERATION & MAINTENANCE SERVICE- TOKYO KYUEI CO., LTD.



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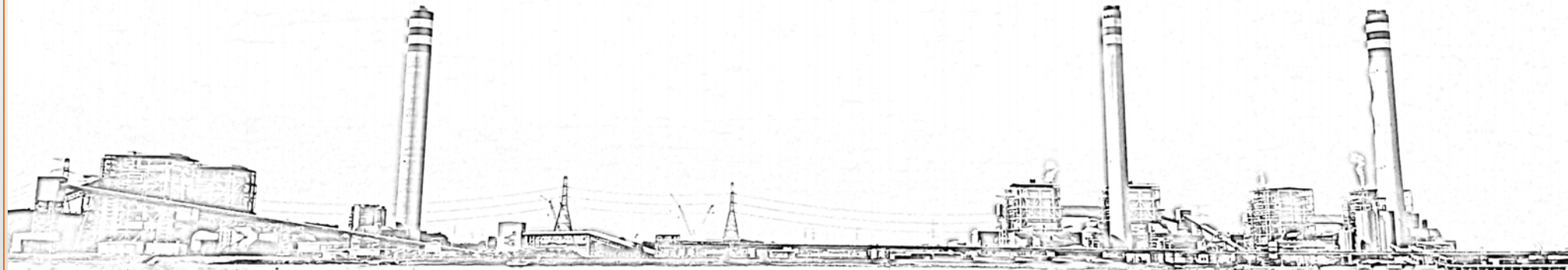
# 1. O&M Service Contents



## Applicable Facilities and Structures:

### ■ Seawater Intake / Discharge Facility and Pipeline

(For Thermal / Nuclear power plants, Energy facilities, Various plant such as Desalination, Chemical, Vaporization of liquid, etc., Fishery facilities)

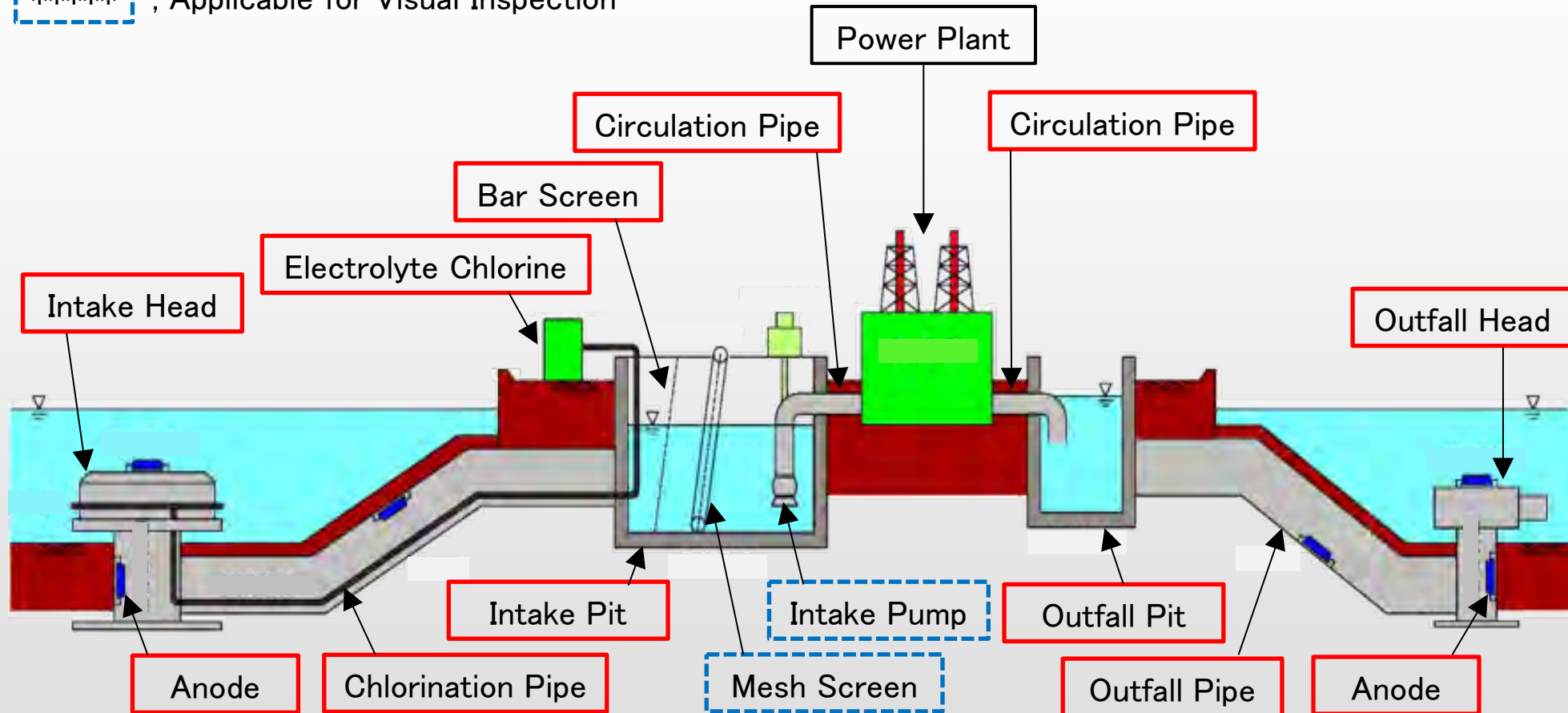


- Marine / Coastal Facility / Structure
- Water Treatment and Waste Treatment Facility
- Water Quality Improvement Device
- Fishery-related Facility
- Aquarium, Marine Leisure Facility

## 2. O&M Service

\*\*\*\*\* ; Applicable for Inspection & Maintenance

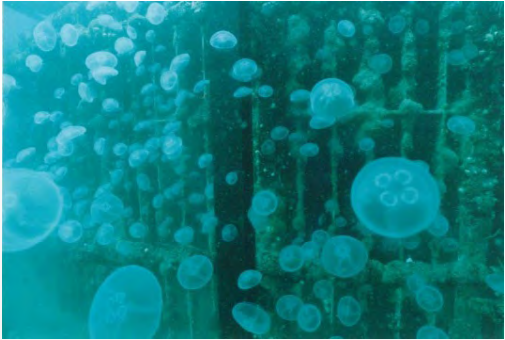
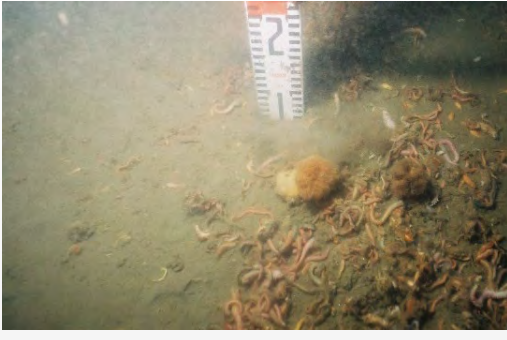

\*\*\*\*\* ; Applicable for Visual Inspection





Facility Layout of Power Plant

**We provide the technology to keep your facility performing without trouble !**



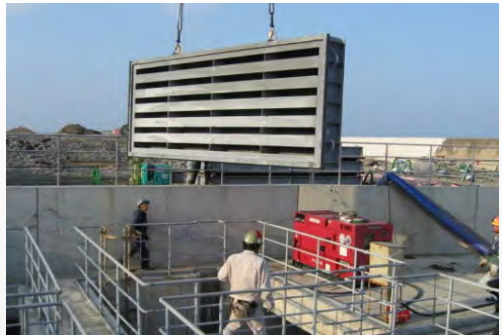
## [Trouble/Defect Example]


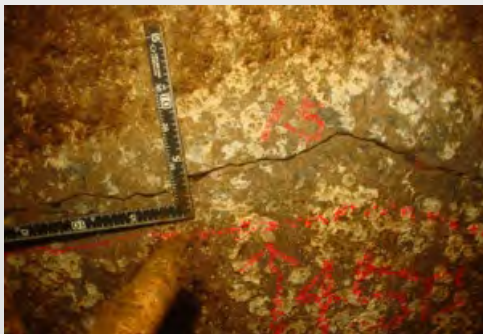

Facility	Intake Head	Intake & Outfall Head	
Defect	Blockage of Opening	Sedimentation	Damage/Deformation
			
Cause	Jellyfish, Shellfish	Inflow of sediment	Rust
Solution	Jellyfish prevention fence Scraping shellfish	Removal by sand pump Dredging around Intake Head	Reinforcement material Anode replacement, UW welding

Facility	Intake Pipe		Intake & Outfall Pipe
Defect	Sedimentation		Blockage
			
Cause	Inflow sediment via hole / crack	Inflow sediment via pipe joint	Shellfish
Solution	Plug the hole / Seal the crack	Close gap by putty or welding	Scraping shellfish
	Seabed improvement outside Intake pipe Removal sedimentation by sand pump		Injection of Chlorination






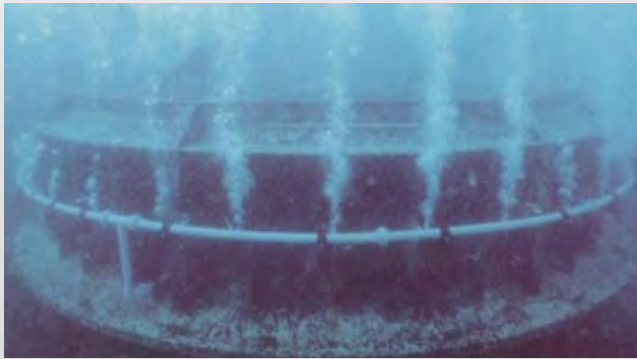

# [Trouble/Defect Example]

Facility	Intake Pit		
Defect	Water Level Drop	Sedimentation	Stop log not insertable
			
Cause	Defect of Intake Pipeline	Inflow sediment via Intake Pipe	Defect of guide rail
Solution	Investigation of Pipeline	Refer to Intake Pipe	Guide rail maintenance

Facility	Intake Pit	Intake / Outfall (Seal) Pit	Outfall (Seal) Pit
Defect	Bar screen damage	Leakage to ground	Foaming
			
Cause	Rust	Crack on Concrete	Low water level
Solution	Reinforcement material Anode replacement Underwater welding	Filling by epoxy material Soil improvement	Structure modification Chemical defoamer

## [Trouble/Defect Example]

Facility	Circulation Pipe / Outfall Pipe		Outfall Head
Defect	Leakage to ground		Foaming
			
Cause	Leakage via hole / crack	Leakage via joint	No air vent on Outfall pipeline
Solution	Plug the hole / Seal the crack Anode replace, UW welding	Close gap by putty or welding Install rubber wall inside joint	Install air vent pipe Chemical defoamer

Facility	Chlorination Diffuser		Chlorination Injection Pipe
Defect	No discharge		Blockage inside Pipe
			
Cause	Leakage via pipe joint	Damage on pipeline	Solidified chloride
Solution	Fastening pipe joint	Repair of pipeline Pipe replacement	Cleaning inside pipe Pipe replacement



# Terima Kasih!

