



APPENDIX 7

Minimization of waste generation and disposal and waste management process optimization

Purpose

Minimization of waste generation and optimization the waste management process.

The sequence of RF state policy priorities for waste management:

- Maximum use of basic and raw materials;
- preventing waste generation;
- reducing waste generation and making waste class less hazardous at the sources of waste;
- waste treatment;
- waste utilization;
- waste deactivation.

Effective Minimisation of wastes and their maximum utilization (waste use for manufacturing of goods (products), performance of work, rendering of services, and generation of energy) can bring benefits by:

- reducing Life cycle environmental impact,
- reducing raw material purchase costs and raw material/product losses,
- reducing Workplace risk,
- reducing incident number and personnel exposure,
- reducing waste management related administrative load, compliance costs, risk of compliance violations and environmental liabilities
- improving Production efficiency,
- improving Environmental performance,
- improving Product quality,
- increasing Profits,
- improving Creditability and reputation.

Who is this for?

- *Asset/ Site Managers;*
- *Asset / Site HSE Managers;*
- *Asset/Site personnel responsible for waste management;*
- *Contract Holders;*
- *Companies (contractors) providing services for the collection, transportation, treatment, utilization, deactivation, and disposal of waste under the conditions of the effective contracts.*

Requirements

Asset / Site Managers, Asset / Site HSE Managers, Asset / Site employees responsible for waste management, and contract holders are responsible for compliance with the following requirements:

- 1. Establish and Comply with Key Performance Indicators (KPI) for the Asset/Site for waste management and minimization of waste generation and disposal.** KPI are set annually.
- 2. Minimise** waste generation and disposal, to the extent reasonably practicable by:
 - a. Selecting lower-risk alternative raw materials that generate lower Hazard Class Waste, such as low toxicity or biodegradable materials that minimize residual impact if released into the environment.
 - Procure materials in bulk. Procure materials in returnable containers. Otherwise procure materials in returnable packaging, and encourage suppliers to Minimise packaging Waste
 - Delivery of materials without container.



- b. Full drainage of dangerous / chemical substances from containers, and, if necessary transfer thereof, for washing (deactivation) to a licensed organisation in accordance with the terms of the contract.
- c. Inclusion of requirements for waste generation minimisation and waste management process optimisation into the [Instructions 1000-S-90-04-P-0215-00-R](#) which should be developed for each type of waste (references to the Instructions are also provided in the Company's Waste Register in UNICA).
3. As far as practicable, packaging-related Wastes shall be minimised by selecting materials storage containers to:
- maximise the use of bulk container deliveries and distribution via refillable containers,
 - maximise the use of containers for hazardous materials that are returnable to the material producer,
 - ensure that hazardous materials containers are suitable for decontamination and reuse; if necessary a waste management professional must request the responsible department of Sakhalin Energy (currently logistics department) to flush (deactivate) oily waste containers;
 - The usage of containers and packaging materials that are recyclable or suitable for reuse;
 - minimise the use of multi-material containers.
4. **Segregate** at source and avoid mixing different types of Waste to the extent reasonably practicable. In accordance with RF legal requirements (Appendix 2), collection of wastes and segregation shall be conducted by Waste type, Hazard Class, and other applicable characteristics to facilitate waste use in the process cycle (for manufacturing of goods (products), performance of work, rendering of services, and for generation of energy):
- Do not mix chemically or physically incompatible Wastes.
 - Do not mix Wastes of different hazard classes, as well as Wastes which are supposed to be transferred to different contractors for various waste handling types.
 - If Wastes of different Hazard Classes are inadvertently or unavoidably mixed, the resultant mixture shall carry the more restrictive classification.
 - Segregate all recyclable waste at source.
5. **Organise the disposal (waste injection into subsurface formations through the CRI wells) and waste accumulation (temporary storage)** in compliance with regulatory requirements and Appendix 8 hereto, waste transfer to the licensed contractors, approved by the Company, for further management. Recycling, deactivation, and disposal of **Hazard Class III oily waste** should be carried out as following:
- Used lubricating oils without halogens are to be sent to approved and compliant with regulatory requirements facility for utilization or deactivation
 - Solid oily wastes should be deactivated by incineration at special plants; **wastes of Hazard Classes I–III** which cannot be deactivated or reused should be disposed at the licensed waste disposal facilities, designed in accordance with RF regulations. Wastes of Hazard Classes I–III are not disposed on Sakhalin Island; any disposal of wastes with Hazard Classes I–III outside Sakhalin Oblast must be carried out at appropriate waste disposal sites licensed for Hazard Classes I–III and only within the territory of the Russian Federation.
 - In case of oil spills, the Company will use the OWHA.
6. **Re-injection of drilling wastes into the** subsurface formations. The drilling cuttings {“waste “associated with the extraction of crude oil, natural gas, and gas condensate using hydrocarbon-based drilling fluid of low risk”}, generated during drilling operations on platforms, are disposed by the method of re-injection into the subsurface through absorbing wells. In case the drilling cuttings cannot be injected into the formation for some technical reasons (e.g. equipment failure, impossibility of grinding cuttings, etc.) or transferred to other platforms for injecting, it should be taken onshore for accumulation, but not for more than 11 months. The recycling or deactivation must be carried out at the facilities (sites) of licensed contractors.



7. Sewage water residues management.

- a. **Sewage water residues** forming from sewage treatment plants (STPs) operations should be collected and dewatered through the special presses (if they are available at a certain STP facility) to reduce the volume. Hereafter the solids should be disposed of at Company-approved landfills.
- b. Biological treatment facilities should be monitored in compliance with their operational instructions.
- c. No liquid / solid waste should be disposed overboard, during the operations at offshore assets as it is defined in the Offshore Aqueous Discharges Specification.

8. Medical waste management (Addendum to EIA on SWM).

Medical waste is collected and disposed by the Contractor providing medical services in accordance with the Medical Waste Procedure approved by the Sakhalin Energy Company Health Manager ([Sakhalin Energy Medical Conditions of Contract Specification](#)). in compliance with Sakhalin Energy Medical Conditions of Contract, RF legal requirements, and WHO Guidelines (1999 Safe Management of Wastes from Health-care Activities).

9. Incineration of Waste at the plants meeting International and RF requirements:

- Sakhalin Energy shall assess the environmental characteristics of incinerators for compliance with Russian Regulatory standards (ITS 9-2015 Technical Reference Book on the Best Practices in Production and Consumption Waste Disposal “Deactivation of Waste Using the Thermal Method (Waste Incineration)” with the effective date of the 1st of July 2016) and international standards. **Sakhalin Energy and its Contractor (whichever is the operator)** must demonstrate that incinerators are compliant with appropriate EU directives (Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)), except in those instances where small capacity batch incinerators with a capacity of < 25 kg per hour are required for the incineration of selected waste which cannot otherwise be processed on Sakhalin due to the absence of appropriate facilities.
- Offshore incinerators are exempted from EU regulations and are controlled by the MARPOL requirements.