APPENDIX 10

Chemicals Management

Purpose

Ensure responsible management and control of *Chemicals*[1] in all *Activities of Sakhalin Energy LLC* for:

- minimising potential impact of chemicals on human health, safety and the environment;
- ensuring full compliance with the applicable laws;
- minimising the amount of chemical *waste* generated;
- minimising chemicals consumption; and
- strengthening accountability and maximising the cost effectiveness in using chemicals.

Target Audience

- *Managers.*

Scope of Application

This document applies to all *Sakhalin Energy LLC Assets, Facilities, Operations, Projects and Activities*, including activities undertaken by any *Contractor* on behalf of the *Company*.

Requirements

Managers are Responsible **for requirements 1 to 14 within their organisations:**

1. Chemicals management in accordance with:
    a. The laws of the Russian Federation (overview is provided in the Chemicals Management Standard[2]) and
    b. lenders and Shareholders as defined in International Requirements for Occupational Health and Hygiene.
2. Chemicals approved by the Company's Chemicals Approval Panel shall be purchased and used at Sakhalin Energy LLC *Sites* only. The Company's Chemicals Approval Panel shall consider the *Risk* of expiration (including waste management) and provide a consistent approach that promotes standardisation and rationalisation.
3. Chemicals that fully comply with the RF laws shall be approved for use at Sakhalin Energy LLC sites only, in particular:
    a. all chemicals shall have a valid hygiene certificate or an information card of a potentially hazardous chemical and biological substance, a GOST certificate of conformity (if necessary) and a Material Safety Data Sheet (MSDS) in Russian and English;
    b. norms of the RF Water Code (No. 73-ФЗ of 03 June 2006) and requirements of environmental expert review (dated 15 April 1998) shall be observed.
4. The Chemicals Approval Panel shall take into account the composition of substances and generally accepted international standards, such as standards of the United Kingdom (disease prevention), the Oslo-Paris Commission (OSPAR/OSPARCOM), and the Montreal Protocol on Substances that Deplete the Ozone Layer). Onshore operations of Sakhalin Energy LLC comply with the requirements set forth in the Water Framework Directive (WFD) 2000/60/EC.
5. Where possible, Sakhalin Energy LLC shall give preference to the least toxic alternative chemicals

[1] Italicised terms herein are included in the Sakhalin Energy LLC HSE Glossary.

[2] Underlined terms in this document refer to Controlled Documents of Sakhalin Energy LLC.

and chemical substances that have minimal residual impact when released into the environment (e.g. biodegradable, non-chlorinated, etc.) Where possible and cost-effective, preference shall be given to suppliers that offer recycling and reusing options for chemicals.

6. Full Material Safety Data Sheets (MSDS) in English and Russian shall be available for all chemicals and petroleum products used at the site. MSDS in English and Russian for all potentially hazardous materials used in Sakhalin Energy LLC activities shall be available at the work site. MSDS shall include, but not limited to, instructions for safe handling and disposal of a product. Unless otherwise is provided by local laws or applicable rules and regulations, MSDS shall be issued in accordance with ISO 11014 and based on EU, US or similar standards.
   a. Chemicals shall be properly labelled and provided with instructions for use. In this regard, the Company complies with Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures.

7. Chemicals shall be selected, purchased, transported, used, stored and disposed of in accordance with the Chemicals Management System Guidelines, based on the principles of the UK Offshore Operators Association (UKOOA), and subject to Directive 94/55/EC (European Agreement concerning the International Carriage of Dangerous Goods by Road), and in accordance with the RF laws.
   a. Chemicals shall be transported and stored in accordance with the Chemicals Management Procedure, which sets forth safe handling practices for all chemicals in use. Only specially trained personnel are allowed to handle chemicals.
   b. The Chemicals Management Procedure requires that an employee reads MSDS prior to handling the product, and clearly states that the use of the personal protective equipment (PPE) specified in MSDS is a minimum requirement that must be strictly observed. For detailed information, see the International Requirements for Occupational Health and Hygiene (Appendix 2).
   c. The said Guidelines and Chemicals Management Procedure shall provide for training in transportation and storage of chemicals, maintaining stock records, posting warning notices, arranging safety measures for chemical storage areas, and identifying action parties.

8. Chemicals shall be transported (including by road, air or sea) in accordance with the Offshore Standard and Land Transport Standard, including the Guidelines for Safe Packing and Handling of Cargo from Offshore Locations. Thus:
   a. Motor vehicles: all motor vehicles shall be suitable for safe transportation. A vehicle or cargo shall be clearly marked with appropriate warnings or signs indicating hazards of materials, precautions and measures in case of an emergency. Emergency telephone numbers shall also be clearly indicated. Drivers shall be duly trained and instructed on hazards of cargo and measures they shall take in case of an emergency, including the measures specified in MSDS, and their liability;
   b. Air transport: a Dangerous Goods Declaration shall be filled in for hazardous substances transported by air. Relevant IATA (International Air Transport Association) regulations shall apply. The Aviation Operations Manual clearly sets forth requirements for labelling, packaging and handling of dangerous goods transported to and from offshore installations, and provides examples of products prohibited for transportation by air;
   c. Maritime transportation: the basic safety requirements for seaworthy packaging are set forth in the Packing Instructions, which are part of the International Maritime Dangerous Goods Code (IMDG). A supply base operator shall provide a vessel in advance with a copy of a loading list and, if applicable, a manifest with reference to dangerous goods for each offshore platform to which the vessel will be moored, to ensure that the cargo is properly stowed for the intended route.

9. Hazardous chemicals, fuels and lubricants shall be stored at least 30 m from a water body. [EIA Vol. 4, Chapter 3, Section 3.6.1]

10. All chemicals discharged to water shall have maximum permissible concentrations (MPCs) corresponding to receiving water bodies, and be specified in the relevant water use license. If

products are to be discharged, concentrations and discharge volumes shall not exceed the limits set by the valid permit or water use license. Readings shall be taken to ensure that MPC values are not exceeded. Discharge shall comply with other accepted standards (refer to the International Requirements for Occupational Health and Hygiene and International Requirements for Water Use and Water Discharge). The Chemicals Approval Panel shall cross-check international protocols, e.g. the Oslo-Paris Convention / Oslo and Paris Commissions (OSPAR, OSPARCOM) (including the Harmonised Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals).

11. Over-saturation with chemicals should be avoided due to their relative inefficiency. For example, demulsifiers become emulsifiers; absorbers of oxygen dissolved in water contribute to the growth of bacteria that reduce the production of sulphates, etc. Sakhalin Energy LLC has implemented a system for taking readings and providing reports based on them for ensuring that injection rates are met but not exceeded.
12. Waste chemicals shall be disposed of in accordance with the Waste Management Standard.
13. Chemical safety training programmes shall be provided and updated in order to maintain the required level of competence.
14. A chemical spill response procedure shall be developed for each asset with regard to the substances in use. It shall contain the detailed procedure in case of spill to ensure quick and effective response. Appropriate cleaning equipment shall be located in each chemical and fuel storage area at the site. In addition, the personnel shall be trained in responding to chemical spills and using the appropriate equipment. MSDS at each asset shall provide detailed information on chemical spills and related chemical spill response actions. [EIA, Vol. 4] 3.6.1, 3.12.3); Vol. 5: 3.5.3]
15. Proper work practices shall be used to minimise the risk of accidental spills at the site. Bunded storage facilities or double-lined tanks shall be used as appropriate (in particular, all platforms are provided with skid units for chemical injection. They are surrounded by bunding with drainage facilities located in such a way as to prevent risks of spills).