



APPENDIX 1

Emergency Preparedness and Response Standard Overview

Purpose

To plan and prepare for effective Emergency Response¹ (ER) that mitigates the potential consequences of an Incident to people (local community and personnel), environment, assets and reputation, and enables normal operations to be resumed efficiently.

This Emergency Preparedness and Response Standard of Organisation Standard Overview document provides a summary of Sakhalin Energy's ER planning and implementation processes. Details of how to implement the requirements are provided in lower level documentation (0000-S-90-04-O-0014 document series, and referenced Manuals) which are integral to this Standard.

Who is this for?

- KChS members, Asset Managers, Facilities Manager,
• ECT and CMT Members, Site Controllers,
• ER Manager, ER Specialists, Compliance Manager, General Manager HSE, HSE Professionals.

Requirements of the ER Standard are mandatory for all Company employees and contractors authorised for emergency prevention and response.

What situations are covered?

This document applies to Emergencies² involving all Sakhalin Energy assets, facilities, operations, projects and activities, including activities undertaken by any contractor on behalf of the Company.

Fundamental Principles

The following principles provide the foundation of this Standard, based on (1) lessons learnt from Russian legislation enforcement, (2) best oil and gas industry practice, and (3) characteristics of the Company:

- Priority of emergency prevention over response – firstly, the Company takes a systematic approach to identify hazards, assess risks, and implement controls to prevent incidents and emergencies.
• Net Benefit Analysis (NBA) is applied to assess the costs (scope of plans, manpower and equipment) and benefits (to people, environment, assets, reputation) to support practical decision-making and demonstrate risk reduced to ALARP.
• Scientifically-based, sound engineering tools and techniques are the basis for planning, implementation and preparedness assurance, and empirical approaches are necessarily abandoned. Asset-specific technical analysis (modelling, quantitative risk analysis) is applied as input data in ER planning and ALARP determination, for transparency and audit-ability.



ER System Lifecycle

- Safety and commercial issues are delineated – the requirements specified during planning (equipment capacity, team manning levels) are realised solely based on technical acceptability and economic criteria, and are determined exclusively as business decisions.

1 Italicized terms in this document are included in the Sakhalin Energy HSE Glossary.

2 An Emergency is a sudden, abnormal or unplanned situation that may endanger human life or the environment, or damage Assets or reputation, and which requires immediate attention. Emergencies include fire, explosion, oil spill, chemical spill, medical emergency, severe seismic or weather events, and other emergency events.



- **ER organisational structure is unified** in the Company but not centralised (ER is an integral part of operations and Asset manager is accountable). The Company (not Assets/Facilities) is authorized to be the link with Russian Unified ER System (RChS). The unified ER organizational structure is established in line with the internationally recognised Incident Command System, providing:
 - a scalable response to an emergency,
 - common framework with high operational efficiency, including a standardised response team structure, within which people can work together (people may be drawn from multiple locations that do not routinely work together, hence this helps to avoid problems and misunderstandings),
 - fixation of scope of activity and responsibility for each role, authorisation of each team member for the time of ER operations indicating specific function and communication requirements,
 - effective interaction between certain Asset/Facility teams, corporate teams, mutual aid agencies and competent authorities representatives.

Emergency and Crisis response in SEIC is provided by three separate and interlinked teams:

- **Site Control Team (SCT)**, led by a Site Controller (SC) addressing immediate emergency at site. SCTs adopt a common structure that may be locally adapted to meet practical needs.
 - **Emergency Coordination Team (ECT)** - led by the Emergency Coordinator (EC).
 - **Crisis Management Team (CMT)** - led by the Crisis Manager (CM).
- **Oil and gas industry training standards** – competencies of ER organisation members are properly assured, with Offshore Petroleum Industry Training Organisation (OPITO) certified options considered the best option for offshore operations.
 - **Exercises and Drills** are applied as a mechanism for training, teamwork and objective competence assessment.
 - **Compliance Assurance** – the Compliance Statement demonstrates that adherence to the business processes and technologies of this Standard implies proper compliance with Russian legislation in the field of emergency prevention and response. Furthermore, the Company implements an audit and inspection plan for facilities readiness and its strict implementation tracking is a mandatory requirement.

Requirements – General

KChS Chairperson is *Accountable* for requirement 1.

1. **Manage ER in compliance with legal and adopted international requirements, as follows.**
 - 1.1. The Emergency Preparedness and Response Standard of Organisation (STO) Basic Provisions³ is the fundamental document specifying the approaches applied by Company to protect people (community and personnel) and environment, as well as assets and reputation, from potential emergency situations. It regulates the key principles of organization and function of ER.
 - 1.2. The Memorandum and Compliance Statement (Parts 1, 2 and 3) demonstrate that adherence to this Standard implies proper compliance with RF regulations in the field of emergency prevention and preparedness, which is confirmed by the approval of these documents by authorized supervisory agencies of the Russian Federation. To demonstrate the compliance, necessary permitting documentation is developed in accordance with Requirement 8.
 - 1.3. Lenders and Shareholders requirements and adopted international practices are included in this Standard Overview, and in the Basic Provisions document, and are further detailed in International Practices for EPR and Oil Spill Preparedness and Response specifications.
 - 1.4. An integral part of the Standard are Manuals (referenced below) that elaborate on the contents of the Standard identifying applicable business processes and associated technologies/methodologies.
 - 1.5. The following requirements of this Standard shall be established and maintained in accordance with requirement 1.

³ Underlined items in this document refer to Sakhalin Energy Controlled Documents.



Requirements – ER Planning

KChS Chairperson is Accountable and Corporate ER Manager is Responsible for requirement 2.

2. Establish and maintain all Corporate manuals and procedures referenced by this Standard.

Asset and Facilities Managers are Accountable and Corporate ER Manager is Responsible for Requirements 3 to 9.

3. Establish and maintain response plans for each Asset/Facility in accordance with the Manual on ER Preparedness Case Methodology, as summarised below.

3.1. Identify a list of **Feasible Emergencies**⁴ associated with Hazards in the yellow and red areas of the RAM (refer Managing Risk Standard, Asset/Facility HSE Case and/or HSE Hazard Register).

3.2. Identify a list of **Typical Emergencies** by grouping the Feasible Emergencies by Emergency Type and Response Level in accordance with the Categorisation Procedure, as follows.

Table 1: Typical Emergencies

Emergency Types ⁵ :	Fires and Explosions	Oil Spills	Chemical Releases	Special Emergencies
Response Level 1	X	X	X	X
Response Level 2	X	X	X	X
Response Level 3	X	X	X	X

Typical Emergencies

Table 2: Response Levels

Response Level ⁶	Location	Scenario / Scale	Command	Resources
Level 1	Localised at facility	Most Likely / Minor	Company command	Company only
Level 2	Regional, inter-municipal	Maximum possible / Medium	Company command (with RSChS co-commander)	Company, ENL, Municipal
Level 3	Federal, International	Worst Case / Major	Authorised bodies of RSChS (with company co-manager)	Company, ENL, Federal, International

3.3. Identify and describe the **Most Hazardous Emergency Scenario** with the most severe consequences and highest potential for escalation for each Typical Emergency.

- The Scenario includes the initiating event, its causes (sequence of failures/ deviations/ errors), its anticipated development, escalation and full range of consequences (timeline, adverse factors extent of territory impacted, potential fatalities, damage to human health, disruption of human living conditions, environmental impact, material losses).

3.4. Develop an **action plan** (in the ER/OSR plan) for each Most Hazardous Emergency Scenario.

- Define the response goals, in line with the HSE Policy (people, assets, environment, reputation).
- Define type, scope, timelines and sequence of ER operations required to achieve response goals.

⁴ Simultaneous occurrence of unrelated events are regarded as unrealistic. Feasible emergencies include man-induced emergencies caused by realistic accidents that have occurred in the international oil and gas industry, and natural disasters provided for in the design documents of the Asset/Facility.

⁵ Oil Spills include all hydrocarbon spills. Chemical Spills include all other hazardous substance spills. Special Emergencies include blowout, medical emergency, natural disasters, etc.

⁶ In distinction from the ER classification provided in the RF legislation, namely 6 levels (local, municipal, inter-municipal, regional, inter-regional, federal), the Company has determined 3 levels of ER, based on the best industry and international practice. These levels are further defined by number of the injured (casualties) in emergency, environmental damage and property losses (in monetary value), emergency zone size, volume of oil and oil products spill, as defined in the Manual on ER Preparedness Case Methodology.



- Estimate manpower and resources required to implement identified ER operations to achieve response goals.
- Combine identified operations, manpower and resources and optimize the time sequence response.
- Apply N(HSE)BA and ALARP principles and provide a **documented justification of sufficiency**, demonstrating that effective implementation of planned actions, manpower and resources will allow achievement of the response goals, in case of any Feasible Emergency at the Asset/Facility⁷.

4. Establish and maintain an ER Plan for each Asset/Facilities.

- 4.1. ER Plans shall conform with the requirements of the Basic Provisions document and the International Practises for EPR specification.
- 4.2. ER Plans and referenced documents shall contain:
- Source data – description of the hazardous Asset/Facility (including manning), environmental conditions and population in the location area, locally available ER manpower and resources of RSChS of all levels,
 - Output of Requirement 3, referencing safety analysis and quantitative risk assessment results, and including action plans for Most Hazardous Emergency Scenarios,
 - Contact details of the ER Team including relevant Contractors,
 - How to make the transition to normal operations after the Emergency Incident is declared over.
- 4.3. Establish and maintain Handbooks and Work Instructions for teams and individual participants.
- Action plans shall include an organigram specifying roles, main functions, tasks, actions and timelines (including immediate actions of an individual participant on hearing the emergency occurrence announcement at the Asset/Facility), etc, be concise to support prompt decision-making, and be specific to the team/unit and each individual participant.
 - Booklets include the general layout of the Asset/Facility, drawings of its structural components specifying evacuation routes, muster points, places of PPE and ER equipment, storage locations of hazardous substances and their properties, placement grounds of electrical equipment.

5. Establish and maintain Oil Spill Response (OSR) Plans.

- 5.1. OSR Plans shall comply with the requirements of the Basic Provisions document, applicable RF requirements in accordance with the Compliance Statement (Parts 1 to 3), and the Oil Spill Preparedness and Response Specification.

6. Establish and maintain Chemical Spill Response Plans.

- 6.1. Chemical Spill Response Plans shall comply with the requirements of the Basic Provisions document and the Chemicals Management Standard

7. Establish and maintain Medical Emergency Response (MER) Plans.

- 7.1. MER Plans shall comply with the requirements of the MER Specification and must provide:
- first aid treatment, including defibrillation, by a Designated First Aider within 4 minutes;
 - assessment and stabilisation by a Medical Emergency Professional within 1 hour;
 - admission to and care at the nearest Local Hospital within 4 hours; and
 - referral to an appropriate Specialist Hospital (casualty specific).
 - When the above response times cannot be met, perform a Risk Assessment and provide MER Risk mitigation measures to ensure that the Risks are ALARP.

8. **Prepare permitting documentation and obtain appropriate approvals** in accordance with the Basic Provisions document section 3.5 and further detailed in the Manual on ER Preparedness Case Methodology.

⁷ Proper planning of the response to the most hazardous emergency guarantees efficiency of response to any, less hazardous emergencies within this typical emergency.



- 8.1. The Asset/Facility emergency prevention and response system is documented in the “Passport of Asset/Facility Readiness”.
- [Piltun-Astokhskoye A \(PA-A\)](#)
 - [Piltun-Astokhskoye B \(PA-B\)](#)
 - [Lunskoye A \(LUN-A\)](#)
 - [Onshore Processing Facility](#)
 - [Onshore Pipeline Operations](#)
 - [Prigorodnoye Asset](#)
 - [Yuzhno Facilities.](#)
9. **Review and update the above plans and procedures on a risk-based frequency, at least every 5 years.**
- 9.1. Repeat Requirement 3 in case of any significant Change, and where this affects/changes the Most Hazardous Emergency Scenario, revise the Plan as appropriate.

Requirements – ER Organisation and Implementation

KChS Chairperson is Accountable and Corporate ER Manager is Responsible for requirements 10 to 12.

10. Establish and maintain the Emergency notification and response process.

- 10.1. All personnel are responsible for reporting Emergency situation by calling “2500” or the local Site Emergency number in accordance with the Site emergency procedure.
- 10.2. Duty Dispatcher Service (DDS “2500”) must, in accordance with [Manual on ER Management Bodies](#):
- Capture all emergency calls, operate 24 hours a day, keep a log of incoming and outgoing communications,
 - Immediately notify the Duty Emergency Coordinator and the Asset/Facilities Manager (or the back-up contacts for these roles), and when requested shall activate the ECT and CMT in accordance with the [ER & Crisis Management Activation & Call-Out Procedures](#).
 - Maintain a list of the Emergency contacts that must be notified.

11. Establish and maintain the Corporate ER Organisation and resources in accordance with [Manual on ER Management Bodies](#).

- 11.1. Appoint Management Authorities to the roles in the CMT, ECT and DDS to function in both duty/constant preparedness regime, and emergency threat or response regime.
- 11.2. Maintain the Emergency Response and Crisis Management [Weekly Duty List](#).
- 11.3. If business decision deems necessary⁸, involve external manpower and resources (Professional Emergency Response Team, PERT) on a contractual basis. Currently this includes:
- [Regulations for Joint Activities at Prigorodnoye Assets for LNG NERT, PERT of Ecosshelf and PERT of CREO.](#)
- 11.4. Establish and maintain the Corporate Emergency Response Coordination Centre and supporting infrastructure in accordance with the [Manual on ER Management Bodies](#).

12. Establish and maintain External Support and Mutual Aid arrangements.

- 12.1. Maintain coordination with relevant authorities and industry groups including Mutual Aid Groups that provide support during Emergencies.

⁸ Only in case the Company takes the relevant business-decision based on the technical and commercial justifications, the involvement of a Professional Emergency Response Team (PERT) is possible in accordance with the CPPM. The technical conditions for PERT employment are: the number of responders with relevant competencies, availability of corresponding certificates, working procedure, funding, etc. as documented in accordance with the relevant Asset/Facility readiness passport. The most optimal applicable contractual conditions are: Conclusion of an initial agreement with a contractor for permanent readiness for ER (standby mode outside the Asset/Facility), and in case of emergency, conclusion of an additional full-scale agreement for ER with deployment of manpower and resources.



- 12.2. Sakhalin region and Far East RSChS subsystems, and common equipment can be mobilized for emergency response, which is in operational subordination to non-core organizations carrying out their industrial activities in the Sakhalin Region, as well as the Sakhalin and Russian Far East Basin Rescue Authorities under the Ministry of Transport of the Russian Federation along with the staff of these organizations, that operate, maintain and provide service support of this equipment.
- 12.3. External Support and Mutual Aid arrangements currently include:
- [ENL and SEIC Mutual Aid Agreement for ER \(including Fire, OSR etc.\) at the territory of Sakhalin Energy.](#)
 - [Regulations for Joint Activities of Department of Forests and Specially Protected Areas of Sakhalin Oblast and "Sakhalin Energy Investment Company Ltd." to Contain and Fight Fires at the Territory of the Forest Fund of Sakhalin Oblast.](#)
 - [Regulations of Joint Activities of Sakhalin Seaports Administration and Sakhalin Energy regarding oil spills containment and response at Sakhalin continental shelf & Sakhalin seaports water areas.](#)
 - Search and Rescue arrangements.
 - Contract with Shell Response Limited, providing access to manpower and resources of dedicated international oil spill response centres (AMOSC, CCC, OSRL, EARL, FOST) and capacities of other dedicated international commercial companies providing OSR services globally (e.g. PAJ).

Asset/Facilities Manager is Accountable and Site Controller is Responsible for requirements 13 to 17.

13. Establish and maintain the Site ER Organisation and resources.

- 13.1. Appoint Management Authorities to the roles in the SCTs (including Non Professional Emergency Response Teams, NERT) in accordance with the Site ER Plans.
- 13.2. Establish and maintain Asset/Facility ER equipment and resources in accordance with the Site ER Plan, OSR Plan, Chemical Spill Response Plan and MER Plan.
- 13.3. Procure resources in accordance with the [Contracting and Procurement Procedures Manual \(CPPM\)](#), based on technical acceptability (type of equipment, main specifications, quantity, etc. that has been defined in the relevant ER plans) and minimum (lifecycle) cost.
- 14. In case of emergency, implement Site ER Plan** (refer Table 3).
- 15. In case of hydrocarbon spill, implement Site OSR Plan** (refer Table 3).
- 16. In case of chemical spill, implement Site Chemical Spill Plan** (refer Table 3).
- 17. In case of medical emergency, implement Site Medical Emergency Response Manual** (Table 3).

Table 3: Links to Site Plans

Site	ER Plan		OSR Plan		Chemical Spill Plan		MER Manual	
	EN	RU	EN	RU	EN	RU	EN	RU
Piltun-Astokhskoye A Platform (PA-A)	EN	RU	EN	RU	EN	RU	EN	RU
Piltun-Astokhskoye B Platform (PA-B)	EN	RU			EN	RU	EN	RU
Lunskoye A Platform (LUN-A)	EN	RU	EN	RU	EN	RU	EN	RU
Onshore Processing Facility (OPF)	EN	RU	EN	RU	EN	RU	EN	RU
Onshore Pipeline Operations	EN	RU	EN	RU	EN	RU		
Sovetskoye Pipeline Maintenance Depot (PMD)							EN	RU
Gastello PMD							EN	RU
Yasnoye PMD							EN	RU
Nogliki PMD							EN	RU
Nogliki Base Camp							EN	RU
Booster Station 2 (BS2)	EN	RU	EN	RU	EN	RU	EN	RU



Prigorodnoye Asset (LNG/OET/TLU) Onshore	EN	RU	EN	RU	EN	RU	EN	RU
Prigorodnoye Asset (LNG/OET/TLU) Offshore			EN	RU				
Kholmsk Marine Port							EN	RU
Vessels bunkering in Nabil Port			EN	RU				
Yuzhno Facilities – Offices	EN	RU	EN	RU	EN	RU	EN	RU
Yuzhno Facilities – Zima Highlands							EN	RU
Hokkaido Oil Spill Contingency Plan (external)			JP					
Hokkaido Environmental Sensitivity Index maps			JP					

Emergency Coordinator is Accountable for requirements 18 and 19.

18. In case of emergency, implement the [Emergency Coordination Procedure](#) and supporting procedures.

- [ER & Crisis Management Activation & Call-Out Procedures](#)
 - [Emergency Response and Crisis Management Checklists](#)
 - [Human Resources Crisis and Emergency Response Team Procedures](#)
 - [On Call Compensation Procedure for Russian Federation Employees](#)
 - [External Affairs Team Crisis and Emergency Response Procedures](#)
- [Business Continuity Plans](#)

19. In case of spill, implement Requirement 18 and the following additional supporting procedures.

- [Manual for Oil and Oil Product Spill Notification and Reporting](#)
- [Emergency Coordination Team \(ECT\) Oil Spill Response Handbook](#)
- [Sakhalin Energy Third Party Oil Spill Policy](#)
- Mutual Aid Agreements as required (refer requirement 12 above)
- [Health and Safety Handbook for Oil Spill Response](#)
- [Oil Spill Modelling Handbook for Oil Spill Responders](#)
- [Handbook for Monitoring and Assessment of OSR Operations](#)
- [Aerial Surveillance Handbook for Oil Spill Response](#)
- [Oil in Ice Manual](#)
- [Regulations for Dispersants NEBA and Application](#)
- [Shoreline Response Handbook](#)
- [Wetland OSR Handbook](#)
- [Oiled Wildlife Response Plan](#)
- [Wildlife Rehabilitation Site Implementation Manual](#)
- [Oiled Wildlife Responders Field Manual](#)
- [Master Equipment List \(MEL\)](#)

Crisis Manager is Accountable for requirement 20.

20. In case of crisis, implement the [Crisis Management Procedure](#) and supporting procedures.

- [Emergency Response and Crisis Management Checklists](#)

Requirements – Preparedness Assurance

KChS Chairperson is Accountable for corporate preparedness assurance and Asset and Facilities Managers are Accountable for site preparedness and assurance in accordance with requirements 21 to 25:

21. Inspect and maintain ER equipment.



21.1. Undertake regular **inspections of ER equipment and resources**, in accordance with Manual on planning, scheduling and conducting Inspections of Emergency Response Teams.

22. Training and competence.

22.1. Provide training to establish and maintain the competency of individuals and ER Teams in accordance with the Manual on ER Teams Learning and Training, Oil Spill Response Training Standard, and MER Specification.

- A pan-asset approach shall be implemented, coordinated by Learning and Development Department in liaison with Central Emergency Response Team.

22.2. Conduct initial training for new ER Team members.

22.3. Conduct refresher induction and training for ER Team members according to «Manual on maintaining the emergency response management bodies».

22.4. Maintain documentation of training, exercises and Competence.

22.5. Conduct the training for wildlife responders (for newcomers and refresh training once per two years) to have team ready for environment protection.

23. Establish, implement and maintain an ER Exercises and Drills programme.

23.1. Establish, implement and maintain a Company ER Exercises and Drills programme and an ER Exercises and Drills programme for each Asset/Facility in accordance with Manual on Preparation, Arrangement, Performance and Assessment of ER Drills and Exercises.

23.2. Exercise and Drill programmes shall:

- Cover all relevant Emergency Types.
- Include a complex integrated exercise for each Asset, minimum once every 3 years,
- Describe the scope of the exercises, participants and actions, and resources to be deployed if applicable, in line with the relevant ER plans.
- Test ER Plans and Procedures including testing of notification and activation procedures, ER Team communications and communications with internal and external contacts.
- Include tabletop and mobilisation exercises using equipment and key regulatory agencies, contractors and consultants.
- At a hazardous Asset/Facility the following shall be conducted based on the approved exercises and drills schedule: (1) tactical and special exercises, (2) command and staff exercises, and (3) integrated exercises.
- Ensure quantity, composition and frequency of exercises/drills should be reasonably practicable (at least once a year or more frequently based on the level of risk).
- Communicate to external observers (representative of the Company's management, share-holders, representatives of supervisory bodies, independent experts, etc) all planned emergency response simulation actions.
- Avoid the situation where an external observer may try to impose the ER actions and avoid any other interference in the course of the exercises.
- Focus the attention of observers on assessment of correctness and accuracy of ER personnel actions in implementation of the general ER plan, in case of the particular simulated accident.
- Ensure the clear and transparent basis for the exercise or drill.

23.3. Review tests and exercises to identify lessons learned and use these to improve training and procedures.

24. Maintain documentation and records.

24.1. Retain and make available to the ER Team documentation, including:

- plant, operational and HSSE information including drawings and equipment specifications;
- Contractor Emergency Plans or interface documents; and



- records of ER testing.
- 24.2. Retain records for periods defined by RF legal requirements and the Records Management System.
- 25. Audit and regularly review the status of ER preparedness** in accordance with Manual on planning, scheduling and conducting Inspections of Emergency Response Teams and HSE Assurance Standard.
- 25.1. The Company's Asset/Facility ER arrangements are subject to internal auditing in accordance with the HSE Assurance Standard to determine its compliance with RF and adopted international requirements as defined in this Standard and Asset/Facility readiness passport. The Assurance Plan is developed based on risk assessment and the results of previous audits.
- 25.2. An annual **ER Preparedness Report** shall be prepared by the Corporate ER Manager (after year end) and provided to KChS, and shall include:
- the results of training / attestation of own ER manpower,
 - the results of own ER resources preparedness inspections,
 - the structural units Asset/Facility-based ER organization readiness inspection results,
 - findings of any HSE Audits applicable to ER,
 - status of corrective and preventative actions relating to ER, including actions arising from ER inspections, audits, exercises, incidents, and annual development plan,
 - suggestions on development of plans for the next year.
- 25.3. ER shall be included in the HSE Management Review process in accordance with the HSE and Social Performance Management System to review suitability, adequacy and effectiveness and provide for continuous improvement. Overall HSE performance shall be reported in the annual HSE report.

Requirements – Public Disclosure

KChS Chairperson is Accountable and Corporate ER Manager is Responsible for requirement 26.

- 26. The following documents shall be maintained on the Company internet website in accordance with Lender requirements.**
- Summary of the Corporate ER Standard in relation to oil spill preparedness and response
 - Summary of OSRP for Lunskeye Offshore Operations
 - Summary of OSRP for Piltun-Astokhskoye Offshore Operations
 - Summary of OSRP for Onshore Processing Facility
 - Summary of OSRP for Onshore Pipeline Operations
 - Summary of OSRP for Prigorodnoye Onshore Operations
 - Summary of OSRP for Prigorodnoye Asset Offshore Operations