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Sakhalin Energy Investment Company Ltd.

Corporate Standard for Use of Cranes and Lifting Equipment

**Корпоративный стандарт:
Использование кранов и грузоподъемного оборудования**

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Revision 09



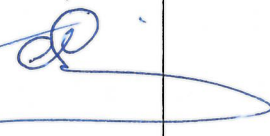
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Document History

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Mar 09	05	Hoisting & Lifting TA Evgeny Volkov	M&I Manager Erik van Hunnik	Production Director Tim Hake	HSES TA David Elmes	All SEIC Staff
Aug 10	06	Hoisting & Lifting TA Evgeny Volkov	E&M Manager Peter Zimmermann	Production Director Thomas Zengerly	HSES TA Robin Bryden	All SEIC Staff
Jul 15	07	Hoisting & Lifting TA Evgeny Volkov	E&M Manager Kurt Wolfsgruber,	Production Director Ole Myklestad	HSES TA Johann Moller	All SEIC Staff
Dec 16	08	Hoisting & Lifting TA 2 Evgeny Volkov Hoisting & Lifting TA 1 Richarl Hull	E&M Manager Kurt Wolfsgruber,	Production Director Ole Myklestad	HSES TA Johann Moller	All SEIC Staff
July 19	09	Head of Pipeline, Civil and Structural Hikmet Islamov 	Engineering & Maintenance Manager Alonso Pineda 	Production Director Ole Myklestad 	TA (SME) Lifting & Hoisting HSES TA	All SEIC Staff



Revision Details

Rev	Location of Change	Brief Description of Change
05	All	Reference to Mobile work platforms removed in line with simplified Shell Group Standard 2009
	All	Requirement for 6 monthly inspection in accordance with UK North Sea Standard replaced by 12 monthly inspection in line with RF Legislation.
	Appendix 3	"Rigger" replaced with "slinger" in line with RF terminology
	Section 3.1	Mechanical maintenance technicians shall be trained in lifting operations
	Section 7	Lift Plans to be registered in the ISSOW system
	Section 7	Complex and Complicated Lift Plans shall be reviewed and approved by SEIC Hoisting and Lifting TA
06	Section 6	Certification of CCUs
	Section 8.7	Use of wooden crates.
07	Appendix 9	Instructions for visual and measuring control of metal structures lifting equipment
	All	"Crane design and operation shall comply with RF Legislation PB 10-382-00" is replaced by "Safety rules hazardous industrial facilities that use lifting structures"
	Section 7.2	Change Lift Plan Categorisation
	Section 8.2	Instead of tag line is allowed to use a special tool Push / Pull Poles for lifting operations
08	Section 6.1 and 6.2	Sections are combined into one
	Appendix 3	Changed the requirements for the certification of personnel
	Appendix 10	Added Appendix 10, "Form for "deviation from the requirements standard""
09	All	Changed document structure
		Added Personnel Lifting
		Added Hoisting over live facilities
		Added transit sling
		Chapter added: Personnel transfer from boat using FROG
		Introduced a new classification of lifting operations
Changed the requirements for the certification of personnel		

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1 INTRODUCTION

1.1 Purpose

This standard for the use of Cranes and Lifting Equipment shall establish the Sakhalin Energy minimum operating standards and requirements deemed acceptable by the company for managing safety during crane and other lifting operations. The objective of this standard is to increase safety and efficiency of crane and lifting equipment operations and for all personnel involved, be it directly or indirectly including those undertaken by contractors.

1.2 Scope

This standard applies to all Lifting Appliances such as mobile and static cranes as well as mechanical and non-mechanical hoists of all types which are able to raise, lower, suspend or transport loads, in all operating environments including onshore, offshore, office and construction locations and any Lifting Accessory items used to directly or indirectly connect a load to the lifting appliance but do not form part of the load.

Lifting Equipment include:

- Cranes of all types (Mobile, Pedestal, Sideboom etc).
- Equipment for lifting personnel of all types includes mobile elevated work platforms
- Winches, Hoists (Electric, Air, Manual, Hydraulic).
- Chain hoists, Wire Rope Hoists, Lever Hoists, Beam Clamps, Sheave blocks, Beam Trolleys etc...

Lifting Accessory include:

- Chain, wire rope and webbing slings grippers, spreader bars, etc.
- Hooks, shackles, eyebolts and other accessories
- Tare.

The procedures and practices detailed in this standart are applicable to the following operations:

- All lifting operations using lifting equipments
- Crane operations involving the lifting of personnel for the purposes of conducting work from a suspended carrier or work basket.
- Crane operations involving the transfer of personnel in approved personnel transfer baskets (capsules).
- Personnel lifting conducted using elevating work platforms.

The standard does **not** apply to:

- elevators (lifts) in buildings;
- jacking;
- well operations involving the crown block, travelling block, and top drive systems;
- fork Lift trucks;
- helicopter lifting;
- operation by piling machines; and manual lifting

This standard applies to all Sakhalin Energy staff, Contractors, Sub-Contractors and visitors to sites where operations are being conducted by, or on behalf of, Sakhalin Energy. The standard is also aimed at personnel involved in the purchasing, operation or maintenance of any lifting equipment or lifting accessories designated for



use by Sakhalin Energy Staff, Contractors, their Sub-Contractors or visitors on behalf of Sakhalin Energy within the jurisdiction of the Russian Federation.

Any change to this Standard shall be approved by CED.

Sakhalin Energy retain the right to check compliance with RF legislation of contractors lifting equipment and shall instruct the service company or contractor to rectify any detected breaches of RF legislation, stop unsafe practices or remove any defective equipment from service.

Sakhalin Energy Staff: Any deviations from the requirements of this standard are subject to consideration in accordance with the "HSE standards and competency deviations management procedure". [1000-S-90-04-P-0336-00-E](#)

Contractors: Any non-compliance with this Specification shall be reported to the Contract Holder.

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1.3 Terminology

Shall – indicates a mandatory course of action.

Should – indicates a preferred course of action.

May – indicates a permitted course of action.

Slinger

Person competent and qualified to conduct lifting operations with the use of loose lifting equipment.

Banksman

Person, appointed from among the slingers, suitably positioned for full visual search of the load, to give load-manoeuving instructions to the Crane Operator via hand signal or radio.

Rigger

Person who performs rigging for horizontal and vertical movement, assembly, disassembly and installation on a design mark or foundation of machines, mechanisms, equipment using cranes, winches, hoists and other special devices.

Competent Specialist

A Competent Person is adjudged to have sufficient knowledge and experience and relevant RF certification to assess lifting issues, and the equipment and / or accessories being used.

Subject Matter Expert (SME)

A Subject Matter Expert is an engineer who has knowledge and expertise on a particular subject, based on specific education and/or roles in their career. Appointed by order of the company. He has relevant training in accordance with the laws of the Russian Federation and relevant position in Sakhalin Energy.

Crane

A machine incorporating an elevated structural member or jib, beneath which suspended loads can be controllably raised or lowered vertically and also moved horizontally either by hoisting or derricking the boom, slewing the Crane, or by other means involving a travelling motion of the Crane.

Mobile Elevated Work Platform

A lifting machine designed to move people with tools and materials and carry out work within the service area.

Lifting Appliance

Any machine that is able to raise, lower or suspend a load.

**Lifted Equipment**

Any device that is used to support the load, including containers, tanks, drum rackets, pipe racks, frames, gas cylinder racks, pallets, flexible industrial bulk containers (big bags), tree cages, cargo nets and cargo baskets.

Lifting Accessory

Any item used to connect a load to a crane or lifting appliance, but which is not in itself capable of providing any movement to lift or lower the load. Sometimes the lifting accessory is termed as lifting gear, however within this document, all references shall be to lifting accessory.

Winch

Deck or structure mounted lifting equipment. A winch system should not have a boom (jib) but may have a system of sheaves and or snatch blocks.

Cargo Carrying Unit (CCU)

Cargo Carrying Unit: Metal, wood-metal or polymeric means for storing, transporting and storing cargoes, which has slinging elements. The cargo unit (tare) must have marking places for stitching and indication of working load capacity.

Cargo container

Unit of transport equipment with:

- a permanent technical characteristic providing strength for repeated use (during the established service life, if any);
- a special design that ensures the transport of goods by one or more modes of transport in direct and mixed messages without intermediate cargo transshipment;
- arrangements providing mechanized reloading from one mode of transport to another;
- a design that makes it easy to load and unload cargo;
- an internal volume of 1 m or more.

Sling

Removable hoisting device, in which the main is a flexible element made of a piece of wire rope, chain or textile tape. The sling, depending on the version, includes one or several branches (bridle sling), equipped with a link for attaching to the crane and grippers. For the direct tying or hooking of the load by a flexible element, the slings can be annular or with loops or links at the ends.

Colour Code

A method of marking equipment to give a visual indication of its certification.

Dynamic Amplification Factor

An additional factor applied to the load to account for vessel and load motions for offshore lifting operations.

Load Chart

A diagram or table showing the rated capacity of the lifting appliance relative to the operating radius and type of lifting operation. Offshore cranes involved in vessel operations should also have charts which are applicable for the environmental conditions such as sea state.

Maximum Gross Mass (MGM)

The Maximum Gross Mass is defined as the maximum weight of a CCU inclusive of the weight of the CCU and it's maximum cargo capacity.

Safe Working Load (SWL)

The maximum load which an item of lifting equipment may raise, lower or suspend under particular service conditions.

Working Load Limit (WLL)

The maximum load which an item of lifting equipment is designed to raise, lower or suspend. The WLL does not account for particular service conditions which may affect the final rating of the equipment.

**Safety Factor**

The ratio of the load that would cause failure of an item of lifting equipment to the maximum load that can be imposed on it in service. (This is to allow for detrimental criteria such as wear, tear and dynamic loadings.)

RCI

Rated Capacity Indicator (Also termed SLI – Safe Load Indicator) is a device installed on cranes and lifting equipment to accurately inform the driver of the load on the hook. The RCI should be calibrated to include the weight of the hoist rope and hook at zero weight.

Hazardous Production Facility (HPF):

An official RF designation for a site of increased safety legislation as defined in FEDERAL LAW ON THE INDUSTRIAL SAFETY OF THE HAZARDOUS PRODUCTION FACILITIES, Annex 1, Point 3. In the context of lifting operations it is the whole area within the boundary defined as part of the lifting operation including the lifting appliance and area of operation.

Permit To Work (PTW)

A control document to allow work to take place at a work site. In the Sakhalin Energy ISSOW system the Permit To Work is referred to as the “Work Control Certificate” (WCC).

Integrated Safe System Of Work (ISSOW)

Sakhalin Energy integrated risk-assessment driven method for managing permitted work and isolation control.

Lift Plan

A written document, which shall include details of how a lifting operation should be undertaken, the lifting equipment and lifting accessories to be used, how the equipment and accessories should be rigged up and the control measures in place to manage the risks identified in the Risk Assessment.

ALL Lift Plans shall be registered in the ISSOW system

Method Statement

It is a production documentation developed by the organization that carries out these works or is commissioned by specialized organizations and regulating technical means and methods of work, technical solutions and organizational measures for ensuring labor safety, planning work at the facility with an indication of the zone work of the crane, places of warehousing of cargoes, dangerous zones and fences. The Method Statement may included a composition a Lift plan.

Lifting Operation Certificate (LOC)

A certificate created within the ISSOW system when a Lifting Operations Risk Assessment is performed. This certificate describes the details of the task and ensures a Risk Assessment is performed with the appropriate hazard groups, hazards & controls for Lifting Operations. The LOC is reviewed and approved by the appropriate ISSOW defined roles depending upon the category of lift.

Toolbox Talk (TBT)

A discussion held between all members of a lifting operation prior to commencement of work in order to agree on all aspects of the work, and the sequential steps to be taken to complete the work.

RosTekhNadzor: (RTN)

Russian Federation regulatory body responsible for ensuring compliance with all relevant legislation and technical standards for the Russian Federation.

Thorough Examination

An examination carried out by a competent person to arrive at a reliable conclusion as to the condition and safety of the equipment. The competent person shall determine the extent of the thorough examination in order to meet legislative, manufacturer’s guidelines and company requirements. The thorough examination may involve dismantling and testing.



1.4 Contractual relationships: rental of equipment or organization of works through (sub)contracts

Any organisation that requires a load to be moved by means of lifting equipment and does not have its own cranes or lifting equipment has two basic options:

- Renting a crane and – or lifting and hoisting equipment
- (Sub)Contracting an independent contractor to move the load, a contract job.

There are several reasons due to which it is important to highlight and explain the main differences in rental of equipment versus (sub)contract jobs:

- Responsibility for the planning, preparing and controlling of the lifting and hoisting operations
- Differences in responsibilities for insurances.

1.4.1 Rental of equipment

Responsibility for the serviceability of lifting equipment and its compliance with the tasks assigned and for personnel engaged in lifting works is assigned to the rental organization.

The rental Organization (Company): appoints responsible persons from among the Company's employees; ensures full planning, all necessary control measures; provides personnel for the organization and implementation of lifting operations.

1.4.2 Contract (sub)jobs

In this situation, the contracted company is responsible for appointing responsible persons, the full planning, all needed control measures and all the personnel and equipment involved through its personal responsibility unless otherwise specified in the contract.

For lifting operations being carried out as a contract job, it is important to note the following:

- The contracted company is responsible for planning, preparing, performing and supervising the lifting operations as described in the this Standard;
- The contracted company shall make sure that all lifting equipment are fully in compliance with applicable rules, regulations and tasks.
- The contracted company shall make sure, that all personnel is, trained and certified according rules and regulations as described in the this Standard.

1.5 Review and Improvement

Any user of this document who encounters a mistake or confusing entry is requested to immediately notify the Information Custodian.

The Information Custodian shall review this document as necessary, at least once every three years.

Users are encouraged to participate in the ongoing improvement of this document by providing constructive feedback.

2 RISK AND CONTROLS

The safe and effective use of cranes and lifting equipment is essential to all Sakhalin Energy operational areas. The fundamental nature of operation of cranes and lifting equipment is potentially dangerous and creates risk to both personnel and assets unless properly controlled and managed.

This standard for Cranes and Lifting Equipment shall establish the Sakhalin Energy minimum operating standards and requirements deemed acceptable by the company for managing safety during crane and other lifting operations. The objective of this standard is to increase safety and efficiency of crane and lifting equipment operations and for all personnel, directly or indirectly involved.



3 RESPONSIBILITIES

Information Custodian

The Information Custodian (Head of Pipeline, Civil and Structural) is responsible for:

- Providing discipline expertise for the creation, revision (including review of deviations and challenges in order to make recommendations to the Process Owner) and retirement of documents relating to Lifting Operations to meet the business needs of the Process Owner in accordance with the Corporate Document Control Procedure;
- Ensuring the technical validity of this document and that the document has been signed off to the correct level;
- Defining the distribution requirements for this document;
- Keeping a record of user feedback on this document and considering comments at each document review.

Process Owner

The Process Owner (Engineering & Maintenance Manager) is responsible for:

- Specifying the need for this document and delegates the responsibility for creating it;
- Resolving any practical difficulties encountered in applying this procedure;
- Approving the document prior to issue.

CED Member

CED Member (Production Director) is responsible for:

- The content of this document but in practical terms delegates this responsibility to the Information Custodian;
- Signing off this document at the highest level prior to issue.

Asset / Project Managers, Line Managers and Department Heads

Asset Managers, Project Managers and Department Heads shall be responsible for implementing this Standard by ensuring that activities they control are managed in accordance with its requirements.

Supervisors

Supervisors are responsible for ensuring that lifting operations are conducted in accordance with the requirements of this Standard for work executed under their supervision. They are responsible for ensuring that staff they supervise understand and implement the controls that are identified in this document.

Lifting Operations Personnel

Lifting operations personnel are responsible for ensuring that Lifting Operations are conducted in accordance with the requirements of this Standard.

Contractors

Contractors are responsible for ensuring that activities undertaken within the scope of their contracts are managed in accordance with the requirements of this Standard.

3.1 Specific Lifting & Hoisting Operation Responsibilities

Competencies

The competency of persons involved in lifting operations is an essential factor for the planning and execution of safe lifting operations. All persons involved in lifting operations for Sakhalin Energy shall have both the relevant level of RF certification for the role they occupy. In addition to the mandatory RF certification, Sakhalin Energy requires, as a minimum, personnel involved in lifting operations meet the relevant requirements described in paragraph 5.9.1. of this standard for the role they fulfil.

**Site Manager (Hazardous Production Facility Manager / Owner):**

The site manager has overall responsibility for the operational safety of an HPF. The site manager shall nominate a qualified and competent Job Supervisor (PIC) as defined in RF legislation. The site manager fulfils the role of Site Controller (SC) in the Sakhalin Energy ISSOW system.

Personnel Responsible for Industrial Control When Operating Lifting Equipment

Person responsible for industrial control should have relevant higher technical education, at least 3 years of relevant work experience at hazardous production facilities within the industry, and a certificate in industrial safety.

The duties and rights of the employee responsible for responsible for Industrial Control When Operating Lifting Equipment are defined in the job description.

Personnel Responsible for Maintenance of Lifting Equipment

Person responsible for lifting equipment maintenance shall be selected from the properly qualified engineering personnel whose subordinates shall be the employees involved in lifting crane maintenance.

Functions of the Engineer responsible for lifting equipment maintenance shall be set out in job description.

Person In Charge (PIC)

Specialist appointed by order as the person responsible for the safe operation of crane lifting operations. PIC shall provide supervision, and maintain overall control of the operation. The PIC shall nominate a suitably experienced and certified slinger to act as banksman for crane lifting operations. Further duties of the PIC shall be identified throughout this standard and in job description.

Lifting Appliance Operator

The lifting appliance operator shall be competent (paragraph 5.9.1. of this standard) for operation of the specific equipment to be used. The appliance operator must be familiar with the make and model of the appliance, as well as the operation of all operational and safety features.

Lifting Operations Crew

All lifting operations crew shall be competent in the type of Lifting Operations being conducted. All crew members shall be fully aware of their roles and responsibilities as outlined in the specific procedure for the type of lift being conducted. **The lifting operations crew shall include a nominated banksman (signalmen) for all crane lifts. The crane team should always perform only those signals that are sent by the signalman.**

Note: Mechanical maintenance technicians shall be trained in lifting operations in accordance with RF Legislation

3.2 Records

Records shall be maintained to document the implementation of this Standard.

Such documentation should include in their composition: the passport of the lifting equipment; a crane operator logbook that is maintained for each lifting equipment in order to record the use of this separate device, the log of the inspection of the load-handling devices, the log of the inspection of the bucket (cab), etc. Also in the crane operator logbook there are mechanical defects, defects in hydraulic equipment and electrical equipment and other defects. As a confirmation of the performance of periodic maintenance in the logbook, records are made about the maintenance carrying out with a description of the nature of the work performed.

Current certification for lifting equipment shall be available on all Sakhalin Energy worksites. The results of inspection of the lifting equipment and containers are recorded in the log of inspection of the load-handling devices. It is the responsibility of the Person In Charge (PIC) to ensure these records are kept and maintained. Records of maintenance shall be kept for all lifting equipment however these are not required to be kept at the work site. Contractors bringing lifting equipment onto Sakhalin Energy worksites shall ensure current certification accompanies the equipment.

3.3 Performance Monitoring

Compliance with this Standard shall be monitored through periodic site inspections and audits.



4 REFERENCES

Other applicable documents which should be read or referenced in conjunction with this document include:

Document title	Document number
Federal Law "On industrial safety of hazardous production facilities"	N 116-FZ of 21.07.1997
Federal rules and regulations in the field of industrial safety "Safety of hazardous industrial facilities that use lift structures"	Order of Rostekhnadzor of 12.11.2013 N 533
Technical Regulations of the Customs Union "On the safety of machinery and equipment"	TR CU 010/2011
Technical Regulations of the Customs Union "On Safety of Wheeled Vehicles"	TR CU 018/2011
Rules of organization and implementation of production control over compliance with industrial safety requirements at hazardous production facilities	Russian Federation Government Resolution dated March 10, 1999 N 263
Technical Authority Roles and Responsibilities Procedure	0000-S-90-01-P-0074-00-E
Non-fixed load-lifting attachments and tare. Exploitation	GOST 33715-2015
Methodical recommendations for the technical examination of removable load-handling devices	MDS 12-31.2007
Rules for labor protection during loading and unloading and placement of load	Order of the Ministry of Labor of Russia dated 09.17.2014 N 642H



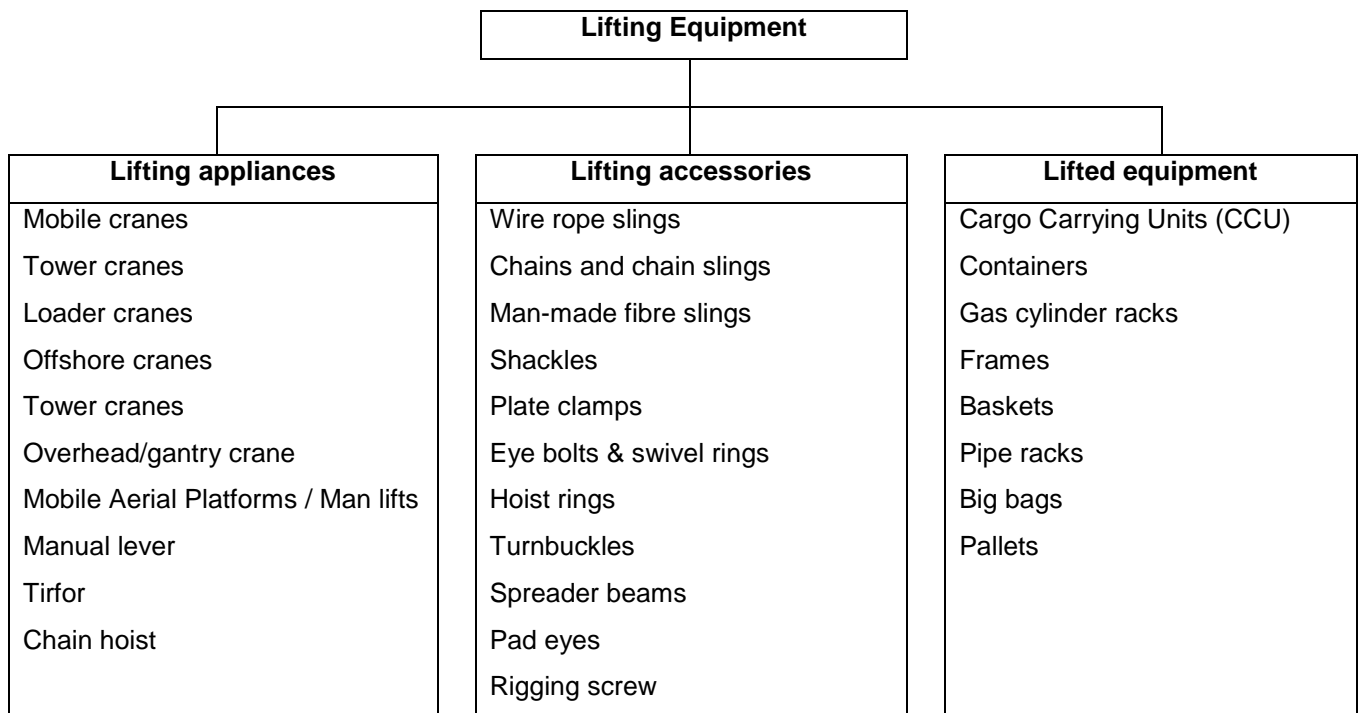
5 DOCUMENT CONTENT

5.1 Lifting equipment

5.1.1 Lifting Equipment Classification

Lifting Equipment is classified into 3 main categories which are as follows.

The diagram below identifies the types of equipment included in the main categories but is not comprehensive.



5.1.2 General requirements for lifting equipment

All lifting equipment shall comply with the requirements of current Russian legislation.

All lifting appliances and operating areas are defined as Hazardous Production Facilities, and as such are subject to the following mandatory certification requirements under RF legislations:

- Registration as a Hazardous Production Facility
- Valid Technical Passport
- Registration Plate with the registration number, the serial number, capacity and date of the next partial and full technical inspection.
- Valid Permit to Operate.

All lifting devices and equipment:

- Shall be visually examined before use
- Shall be maintained, supported by an equipment register, to ensure equipment integrity
- Shall undergo a technical inspection by a competent person at least every 12 months for damage to lifting equipment.
- Shall be operated in the temperature range specified in the manufacturer's documentation, equipment with a temperature of operation of -40°C is recommended for procurement.



Lifting cranes of all types, pipe-laying cranes, manlift operated by contractors must be audited before using them at Sakhalin Energy facilities by a SME.

5.1.3 Marking of Lifting Equipment

All lifting appliances and accessories shall be marked in accordance with Russian Federation rules and the requirements of this standard.

Cranes, manlift

All cranes shall be fitted with a manufacturer's plate detailing the following:

- Factory Serial number
- Safe Working Load
- Date of manufacture
- Manufacturers Name & Address

All cranes, manlift shall also display the following RF applicable data:

- Registration Number
- Factory Serial number
- Safe Working Load
- Date of next Partial Inspection
- Date of next Full Technical Inspection

This data may be presented in the form of a plate or stencil.

The following additional marks shall also be clearly displayed on the crane:

- Warning signs and instructions as defined by the manufacturer.

All hooks and hook-blocks integral to the crane shall be marked as follows:

- Unique Serial number
- Safe Working Load

Winches

All winches shall be fitted with a manufacturer's plate detailing the following:

- Unique Serial number
- Safe Working Load
- Date of Initial Test / Manufacture
- Manufacturers Name & Address

Winches shall be suitably marked to indicate the intended use of the winch with regards to personnel lifting, i.e. "For Personnel Lifting Only" or "Not Suitable For Personnel Lifting" or similar as appropriate.

Portable lifting appliances

All portable lifting appliance such as chain hoists, lever hoists, wire rope hoists etc... shall be fitted with a manufacturers plate that details the following:

- Unique Serial number
- Safe Working Load
- Date of Initial Test



- Manufacturers Name & Address

The current site Colour Code shall also be marked on the equipment.

5.1.4 Marking of Lifting Accessories

All lifting accessories such as slings, shackles, eye-bolts etc... shall be marked with the following information:

- Unique Serial number
- Safe Working Load
- Date of last test
- Date of last examination

Wire rope slings shall have the above listed information and, in addition, the manufacturer's name. The information shall be displayed in the form of a suitable metal tag designed to last the lifetime of the item.

Fibre slings shall have the above listed information and, in addition, the following information:

- Manufacturer's name.
- Length
- SWL for all configurations.
- RF type or symbolic notation of the sling.
- Specification or standard the sling has been manufactured to.

The information shall be displayed by means of a suitable durable fabric tag attached to the fibre sling.

The current site Colour Code shall also be marked on the equipment.

5.1.5 Marking of Cargo Carrying Units

Cargo Carrying Units shall be marked with the following information:

- Manufacturer Details
- CCU serial number
- Tare Weight
- Maximum Payload
- Maximum Gross Mass (MGM)
- Date and type of last test / examination

The following suffix scheme shall be used to identify the type of test or examination carried out:

T – Test and non-destructive examination.

V – Visual examination only.

VN – Visual examination and non-destructive examination.

5.1.6 Color Code

A colour code system is used by Sakhalin Energy to indicate user to the lifting accessories and loose lifting equipment that that item of lifting equipment has undergone a 6 monthly examination and that the certification is valid for the operating period. The colour code shall be changed at predefined 6 monthly intervals. Only lifting equipment displaying the current Sakhalin Energy colour code shall be used on Sakhalin Energy operating sites with the exception of equipment supplied and exclusively used by 3rd parties who have been deemed by Sakhalin Energy to be operating a suitable alternative scheme.



The colour code shall follow the sequence: **ORANGE, BLUE, YELLOW, GREEN.**

Transit slings shall be colour coded: **BLACK, WHITE**

Rejected / quarantine slings shall be colour coded: **RED**

The color coding shall be repeated upon completion of the cycle. Colors should be applied at the point of completion of Thorough Examination. The following also applies.

- labeling to be applied shall be securely fastened and be clearly visible.
- The application of paint or any other marker directly on to a fiber sling is not acceptable.
- Any missing color tag should make the lifting equipment unsafe for use even if the item is new.
- The current color is displayed at each installation on notice boards.
- The presence of a correct color indicates only that the item was thoroughly examined at its last periodic examination. A pre-use inspection must still be carried out. The equipment may have suffered misuse or a mechanical failure since its last thorough examination.
- Only competent person to inspect and color code the lifting equipment's.

5.1.7 Testing and Examination

The following sub-sections define the testing and examination requirements for lifting equipment. Refer also to Appendix 2 for the tabulated data.

Testing & Examination – Lifting Appliances

Mobile, crawler, fixed cranes and manlift shall undergo the following inspections:

- Prior to every use in accordance with manufacturer's instructions.
- Partial Examination. This is an annual thorough examination and assessment of the crane condition and includes a test of all safety related functions and equipment. The minimum requirements for examination are crane structure, ropes and safety devices. Details of the Partial Examination shall be recorded in the crane passport. It is conducted at least once every 12 months.
- Full Technical Examination. The requirements are as per the Partial Examination with the addition of static & dynamic load testing. It is held no less than once in 3 years.
- Unscheduled Technical Examination. The technical requirements are as per the Full Technical Examination. An unscheduled Technical Examination shall be undertaken in cases stipulated by Federal rules and regulations in the field of industrial safety "Safety of hazardous industrial facilities that use lift structures".

Cranes shall be load tested as follows unless a RF approved alternative is in place, i.e. manufacturer's instructions:

- The static test must be carried out with a load 25% higher than the crane's SWL in the position corresponding to the highest crane load capacity and / or the largest load moment (125% of the rated load capacity).

The position of the bridge crane during static testing. The crane is installed above the supports of the crane track, and its trolley (trolleys) is in the position corresponding to the greatest deflection of the bridge.

The reference weight is raised to a height of 50-100 mm, followed by a hold for 10 minutes. The crane is considered to have passed the test if, within 10 minutes, the lifted cargo has not come down to the ground.

- Dynamic test to 110% SWL. The test load is raised and lowered three times, and also the action of all other mechanisms is checked while combining the working movements provided by the manual (instruction) for operation. If the crane can perform this task satisfactorily then it is deemed to have passed the dynamic test.

Sideboom cranes shall be subject to the same testing and inspection regime as other cranes with the following exceptions:



- Static test shall be to 140% SWL unless otherwise specified in manufacturer's operating procedures.
- Dynamic test shall be to 110% SWL and cover all hoisting and booming functions unless otherwise specified in manufacturer's operating procedures.

Manlift (MEWP) - during the tests should take into account the following:

- • Static tests of manlift are carried out when the manlift is installed on a horizontal platform in a position corresponding to the lowest calculated stability. On the manlift equipped with a basket, the cargo weighing 110 percent of the nominal capacity is placed in the basket, and the second cargo weighing 40 percent of the nominal capacity is suspended to the basket on a flexible suspension. After the beginning of lifting and lifting of the second cargo from the ground to a height of 50-100 millimeters, the lift is stopped with the subsequent exposure of the total cargo for 10 minutes.
- Dynamic test to 110% SWL. The test load is raised and lowered three times, and also the action of all other mechanisms is checked while combining the working movements provided by the manual (instruction) for operation

All test and examination details shall be entered into the technical passport for the crane.

Lifting appliances

- Prior to every use – visual examination by competent person.
- Every 6 months – full visual examination by competent person
- Annual inspection in accordance with manufacturer's instructions. In cases manufacturer recommendations for recertification is greater than 12 months, the maximum interval between testing shall be 12 months. If recertification and test is required more regularly, then the stated interval shall be adhered.

Periodic Inspection shall be conducted in accordance with the schedules and the results recorded in the lifting accessories log book. In the absence of approved manufacturer's guidelines the equipment shall be load tested to 125% SWL.

All test and examination details shall be entered into the technical passport for the equipment.

Testing & Examination – Lifting Accessories

The following inspection schedules shall be followed for all loose lifting equipment:

- Slings and crane operators (operators) should inspect the loose lifting equipment before using them.
- The specialist appointed by the order should periodically inspect them at least:
 - Spreader bar, carrying tongs, clamp and packagings - every month;
 - Slings (except rarely used) - every 10 days;
 - Rarely used loose lifting equipment - before starting work.
- After the repair of the loose lifting equipment, the quality of the repair should be checked with static tests carried out with a load of 125 percent SWL.

The results of inspection of the removable lifting devices and containers are recorded in the inspection log of the loose lifting equipment.



Testing & Examination – Offshore Containers

Cargo Carrying Units (CCU) shall be subject to the following test and inspection regime:

Interval	Test / Examination			
	Load Test	NDE of padeyes	Visual inspection	Inspection Plate Marking
Prior to first use	2,5 x MGM	Yes	Yes	T
Every 12 months	-	-	Yes	V
Every 48 months	-	Yes	Yes	VN
After significant repair or alteration (1)	2,5 x MGM	Yes	Yes	T

(1) A substantial repair or alteration means any repair and/or alteration carried out, which may affect the primary elements of the offshore container, or elements which contribute directly to its structural integrity. Suffix T - to indicate proof load test, non-destructive examination, and visual examination. Suffix VN - to indicate non-destructive examination and visual examination. Suffix V - to indicate visual examination only.

Lifting sets for offshore containers shall be inspected at intervals in accordance with the schedule listed in table.

Time or interval	Applicable to	Type of Inspection			
		Load test	Non-destructive examination ¹	Visual inspection	Suffix to be marked on tag
At intervals not exceeding 12 months	Complete lifting set	-	-	Yes	V
At intervals not exceeding 48 months	Sling components and joining links excluding legs	Either NDE or load test		Yes	T or VN
	Wire rope legs	-	-	Yes	-
	Chain sling legs	Either NDE or load test		Yes	T or VN
	Shackles	-	-	Yes	V
After substantial repair or alteration	Complete lifting set	Yes	Yes	Yes	T

¹ - For non-destructive testing of elements of lifting devices, except for steel cables, magnetic particle method is used. Suffix T - to indicate proof load test, non-destructive examination, and visual examination. Suffix VN - to indicate non-destructive examination and visual examination. Suffix V - to indicate visual examination only.

5.1.8 Maintenance and condition of lifting equipment

The equipment shall be maintained according manufacturers' instructions and always be suitable for a safe use.

The condition of the lifting equipment shall be:

- Full function (including all prescribed safety devices);
- Maintained regarding the users instructions of the equipment ;



- Without technical changes;
- Without wear and tear;
- Without damage.

5.2 Requirements for hoisting appliances

5.2.1 Cranes, pipe layer, manlift:

Design and operation of the crane must comply:

- Safety rules hazardous industrial facilities that use lifting structures
- TR CU 010/2011 Technical Regulations of the Customs Union "On the safety of machinery and equipment"
- TR CU 018/2011 Technical Regulations of the Customs Union "On Safety of Wheeled Vehicles"
- GOST / ISO

The following features shall be in place for any crane being operated by, or on behalf of, Sakhalin Energy prior to it being deemed suitable for lifting operations:

- Cranes must be fitted with limiters high position hook and disable the corresponding lifting mechanism when the limiter is activated.
- The crane shall be fully certified in accordance with the RF rules for operating Hazardous Production Facilities.

5.2.2 Requirements for Winches

Design and operation of the winch must comply:

- Safety rules hazardous industrial facilities that use lifting structures
- TR CU 010/2011 Technical Regulations of the Customs Union "On the safety of machinery and equipment"
- GOST / ISO

The following features must be in place for any winch being operated by, or on behalf of, Sakhalin Energy prior to it being deemed suitable for lifting operations:

- The winch shall be fitted with automatic brakes such that when the equipment operating controls are released all motions are brought to rest. The motion controls must return to the neutral position when not in operation.
- A second independent brake shall be provided for use if the automatic brake fails. This brake should be manual unless the second automatic brake is completely independent of the automatic braking system.
- Devices shall be incorporated in the winch system to prevent the load from over-riding, over-lowering and over speeding
- The winch shall be capable of lowering in a controlled manner in the event of sudden loss of power or primary control;
- The winch shall have adequate capacity to handle the loads required which should include but not be limited to rope weight and frictional effects.
- The design factor for the winch and the wire rope shall not be less than 6:1.
- At least 5 complete turns of rope shall remain on the drum at the lowest limit / maximum rope payout limit.
- The winch shall be firmly mounted with no flexible elements in the mounting arrangement.

5.2.3 Requirements for Crane Wire Ropes

The crane rope design and manufacture shall comply with RF Legislation "Safety rules hazardous industrial facilities that use lifting structures" and a test certificate shall be present within the crane / winch certification



package. Ropes manufactured to international standards shall be pre-approved by RTN certification bodies or head engineering organisations.

Only ropes of the size, type, strength and construction as specified in the crane manual should be fitted to the crane unless the crane manufacturer, rope designer or technically competent engineer has specified a suitable alternative. Evidence of this acceptance shall be held in the crane technical manuals.

Grades and types of ropes, dependant on application shall conform to regulatory standards.

All wire ropes used on cranes and winches shall have traceable load test certificate supplied by the rope manufacturer.

The design factor for wire ropes manufactured and used in the Russian Federation and within Sakhalin Energy sites shall be 6:1.

Rope terminations shall be made in line with the following methods;

- Wedge and socket type termination with wire rope clamps.
- Low temperature melting alloy filled socket.
- Any other method as prescribed by local regulatory documents with exception of termination of wire ropes by use of splicing.

Rope shall be discarded if the following defects are found;

- Strand breaks more than specified in Federal rules and regulations in the field of industrial safety "Safety of hazardous industrial facilities that use lift structures" or recommendations of the rope manufacturer
- Broken wires
- Reduction in diameter due to core deterioration (3% reduction for non-rotating rope, 10% reduction for all other types).
- 10% reduction in diameter – Wear
- Internal Corrosion
- Deformations
- Kinks
- Thermal damage
- Basket deformation
- Strand protrusion

5.3 Requirements for lifting accessories

A lifting accessory is termed as any item that is used to attach the load to a lifting appliance. A lifting accessory itself cannot raise, lower or suspend a load.

Items to which the term lifting accessory refers are wire rope slings, fibre slings, shackles, and any other piece of equipment that can attach a load to the lifting equipment.

As a minimum requirement, all lifting accessories shall be manufactured, tested, inspected and certified in accordance with RF legislation. All lifting accessories shall be designed to operate in low temperature environments encountered in Sakhalin Energy operations.

Suitable RF compliant certification shall be present for all lifting accessories with the following details on the certification as a minimum:

- Name of manufacturer.
- Product type.
- Rated load capacity.
- Length.



- Manufacturers part number.
- Year and month of production.
- Date of testing and test details, e.g. test load applied.
- Warranty details.
- Statement of compliance with relevant RF legislation.

The accessories shall be marked in accordance with RF legislation and shall be fitted with a suitable tag or marker designed to last the lifetime of the item.

The following criteria shall also be met for lifting accessories used in lifting operations:

- Hooks on slings etc, must have a positive locking device or pinning arrangement to prevent unintentional release of the load.
- The maximum angle between the legs of multi-leg slings must never exceed 90°, if necessary use other angles need to calculate the load capacity with safety factor.
- A competent person shall carry out pre-use visual inspection.
- No welding shall be conducted on lifting accessories.
- Inspection & Rejection criteria shall be as prescribed in RF requirement “Safety rules hazardous industrial facilities that use lifting structures”

Safety Factor applied to the rope, slings are made of, should be 6:1.

At the same, safety coefficient $Z_p = 5$ must be applied to all slings fabricated: GOST 25573-82 / BS EN 13414.

Fibre slings shall be manufactured with a factor of safety of at least 7:1.

If no certificate of load test accompanies new engineered lifting accessories such as spreader beams etc, a full load test shall be conducted in accordance with GOST 25573-82 / BS EN 13414

5.3.1 Requirements for Loose Lifting Equipment

Loose lifting equipment is termed as any portable lifting appliance which can be used to lift, lower or suspend a load such as chain hoists, wire rope hoists, pull lifts. All loose lifting equipment shall be supplied with a certificate of conformance to RF standards, and shall include a load test certificate and record of visual inspection.

All loose lifting equipment shall be designed to operate in low temperature environments encountered in Sakhalin Energy operations.

Suitable RF compliant certification shall be present for all loose lifting equipment with the following details on the certification as a minimum:

- Name of manufacturer.
- Product type.
- Rated load capacity.
- Height of Lift.
- Manufacturers part number.
- Year and month of production.
- Date of testing and test details, e.g. test load applied.
- Warranty details.
- Applicable reference standard/code
- Statement of compliance with relevant RF legislation.



The accessories shall be marked in accordance with GOST 28408-89 and shall be fitted with a suitable tag or marker designed to last the lifetime of the item.

Where loose lifting equipment is due for recertification, the following must be checked and ensured.

- Hooks must have a positive locking device, or pinned. Distortion of hooks is not acceptable.
- A competent person shall conduct a visual inspection.
- A competent person shall conduct load test of equipment to prove integrity.
- No welding shall be conducted on lifting equipment.
- Where there is no prescribed inspection / rejection criteria in Russian Federation legislation shall be adhered to.

Loose lifting equipment shall be recertified within the time period specified by the manufacturer.

5.3.2 Requirements for Cargo Carrying Units

Cargo Carrying Units are termed as any container or material receptacle specifically designed for holding cargo during a lifting operation.

CCU shall be design and certification requirements:

- Dedicated lifting points shall be built into the design of the CCU. The CCU shall not be used in any other configuration or slinging arrangement from which it has been designed.
- All CCUs to be shipped to offshore installations shall be designed, manufactured and tested in accordance with recognized international standards for CCU operated in marine conditions and have a valid certificate of conformity of the Maritime Classification Society which is a member of the International Association of Classification Societies (IACS).
- All CCUs shall be suitably painted or otherwise protected to withstand the environmental conditions encountered during Sakhalin Energy operations.
- All CCUs and lifting gear used to ship materials to or from Sakhalin Energy installations and sites should be correctly chosen for the purpose, in terms of type, size and load carrying capacity. The person responsible for shipping should satisfy themselves that an adequate testing and inspection procedure is in place for 3rd party owned CCU's.
- CCU doors must be adequately secured, with both top and bottom locking cams fully engaged, and door handle locking mechanism secured with a seal. Typical sealing arrangements include custom seals, steel bands or tie-wraps with minimum width of 10mm (3/8"). The door engaging and un-engaging method should be suitable to eliminate the requirement for excessive force to be applied.
- All certification is fully in date at the time of use, and has sufficient test period remaining so as to prevent the CCU certification expiring when at the Sakhalin Energy site or installation.
- Only CCUs specifically designed for the purpose should be stacked. All sling sets shall be removed from CCU's onto which another CCU will be stacked in order to avoid damage to the sling set.
- CCUs being transferred to and from offshore locations shall be pre-slung. The recommended sling set arrangement is a four leg sling with a fifth leg and masterlink fitted as the lifting pennant. The fifth leg should be long enough to reach down the side of the container to allow safe access for slinging but All not long enough to reach the ground. When CCU's with this arrangement are transported on vehicles the masterlink must be suitably fastened down
- Where open cargo baskets containing general waste are used they should be provided with safety nets to retain the contents.
- The use of skips has been identified as a factor in accidents, and their use should be discouraged as these skips are easily snagged.
- When the CCU contains Dangerous Goods, padlocks should not be used.



5.3.3 Transit slings

Transit slings are those used only for the transportation of drilling tubulars to and from offshore platform and should only be used for this purpose.

Transit slings shall not be used for general lifting purposes, as they are not part of the installation's lifting equipment.

Transit slings shall be of wire rope manufacture.

The use of transit slings

- Transit slings will be utilised for one operation only.
- The criteria for one operation offshore consists of:
 1. The transportation of the pre-slung load to the platform;
 2. The hoisting of the pre-slung load onto the platform deck with the use of the platform pedestal crane;
- Once any part of the original transit slinging method has been removed e.g. the bulldog clips, then this is the end of the "one operation" criteria;
- If the originally installed transit slinging method on any bundle of drilling tubulars has not been removed or disturbed, then the transit slings can be utilised for a crane hoisting operation back down to a supply vessel. Prior to the hoisting operation commencing, a trial lift shall be conducted, and a visual inspection on the available section of the sling shall be carried out as far as reasonably practicable to ensure the integrity of the slings;
- Once the transit slings have been released from their original pre-slung configuration, then the transit slings shall not be used under any circumstances to undertake platform lifts of any nature;
- Once the transit slings have been removed from the load, the transit slings shall be quarantined, back loaded or disposed of following the appropriate methods and procedures;

5.4 Working area and external surrounding factors

5.4.1 Risk assessment on location

Lifting activities must be able to be performed at the location safely. For this purpose, prior to commencement of the lifting activities, all risks associated with the location must be known and measures must be taken to minimise these risks.

Upon entering the work site, information and instruction must be provided to all those involved with regard to working safely at the location. Vehicles and resources must be suited to the location, individuals must have the required training, instructions directed at the location must have been provided to them and measures should have been taken for first aid, fire fighting and the evacuation of employees.

Individuals must at least use the Personal Protective Equipment (PPE) tailored to the risks of the location.

All risks associated with the location must be considered during preparation of the lifting activities.

5.4.2 Environmental conditions

Ground conditions

Access roads shall be strong enough to withstand axle loads of mobile lifting and hoisting equipment. Ground condition shall be suitable to support the crane under fully loaded conditions. The ground should always be firm and level. For mobile lifting and hoisting equipment, ground stabilising mechanisms must be provided if necessary, by means of road access plates, mats or dragline boards.

Care should be taken to ensure there are no dangers to or from underground services such as gas mains, oil or chemical product pipelines, electric cables, water mains etc. Additional care has to be taken when working near exposed edges such as quaysides but even more so, near edges of excavations. Check that the type of ground can withstand the maximum bearing pressures transmitted through the outriggers.



5.4.3 Weather

Adverse weather conditions will increase the risks presented to personnel, equipment as a result of lifting operations.

Prior to commencing hoisting operations the crane operator shall take stock of the prevailing weather conditions (wind speed and direction, visibility, etc.). Lifting operations shall not commence if the weather or environmental conditions are likely to jeopardise the safety of the activity.

When assessing weather conditions related to the impact on lifting operations, the following topics should be considered.

Wind

Cranes may only be operated below the maximum allowable wind speeds as stated in the users instructions of the crane.

However, in the event there is no statement made in the instructions, hoisting operations shall be suspended as from wind speeds exceeding 10 m/s.

Special care must be taken during high wind conditions with regard to:

- Operating a crane between structures (Venturi effect);
- The geometry and shape of the load; (e.g. load with large dynamic surface and minimal weight);
- Direction of the wind and position of the crane, load will move to/from or sideward of the crane.

Offshore operations

Prior to commencement of discharging cargo from and back loading of cargo to supply vessels, the crane operator should confirm that the prevailing wind and sea-state conditions are within the Installation Adverse Weather Policy limits.

Under no circumstances shall lifting and hoisting operations exceed the limits applicable for the vessel or crane.

Other weather conditions

Other weather conditions can cause reduced visibility and the risk of an uncontrolled lifting operation. Rain, fog and snow are such examples where environmental conditions are affecting safety of lifting operations in a negative way.

Special care should be taken during thunderstorms. Crane booms can act as lightning rod and be struck by lightning. At the first signs of lightning crane activities must be suspended, the boom must be lowered and personnel should leave the area immediately.

Apart from the risk of impact, there is also a risk of unexpectedly high wind gusts during thunderstorms.

5.4.4 Working near Overhead Power Lines

Under RF legislation, no work may be carried out using a crane or other appliance closer than 30m to an energised overhead power line with a voltage of more than 50V without extraordinary safety measures put in place.

On occasions when it is necessary to work near overhead power lines the following safety criteria must be met:

- Wherever possible the power to the overhead line should be isolated.
- A special work permit must be issued with a validity period clearly stated.
- Work may only commence when the line voltage is known, and the permit is issued as above.
- A Work Order in accordance with Safety rules hazardous industrial facilities that use lifting structures must be raised.
- A safety briefing shall be conducted with all personnel involved in the lift. It is the responsibility of the Crane owner and site engineer to perform this brief.



- Personnel not directly involved in the lift must be cleared from the area.
- Operations shall not commence, or shall be halted during thunderstorm, heavy rain, fog and snowfall, when visibility is poor, and also when the ambient temperature is lower than that indicated in the manufacturer's certificate of the hoist;

The following table specifies the minimum distance permissible for personnel working close to power transmission lines using lifting equipment. No part of the machinery or personnel shall be permitted within the distances stated in the table below.

Voltage of Overhead Line, kV	Minimum Distance, m
To 1	1,5
From 1 to 35	2,0
From 35 to 110	3,0
From 110 to 220	4,0
From 220 to 400	5,0
From 400 to 750	9,0
From 750 to 1150	10,0

Crane operation near power transmission lines shall be treated as a Complex Lift and conducted under Permit to work with direct supervision of the Person responsible for Safety of Lifting Operations. He shall be responsible for ensuring compliance with all safety precautions required by the lift planning, risk assessment and a separate permit to work issued by the local power transmission company.

It is not permissible for the crane operator to independently setup the crane in vicinity of power lines. This instruction shall be written into the lifting plan.

Jib cranes shall be equipped with limit switches for working motions to automatically switch off mechanisms of hoisting, slewing and extension of jib at a safe distance between crane and power transmission line wires.

5.4.5 Working near the slope of the pit (ditch)

Crane or other appliance on the edge of the excavation pit (ditch) should be installed in accordance with the distances indicated in the table.

Depth of excavation (ditches), meters	Ground				
	sand and gravel	sandy-loamy	loamy	loess dry	clayey
1	1,5	1,25	1,00	1,0	1,00
2	3,0	2,40	2,00	2,0	1,50
3	4,0	3,60	3,25	2,5	1,75
4	5,0	4,40	4,00	3,0	3,00
5	6,0	5,30	4,75	3,5	3,50

At a pit depth of more than 5 m and impossibility of observing the distances indicated in the table, the slope must be strengthened in accordance with the Method Statement.



5.5 Performing the lifting operations

5.5.1 Barriers

All personnel and third parties shall be kept out of any area where they might be struck by a load or lifting equipment if it swings, shifts or falls. No one shall stand or work directly below a load.

The work area shall be closed off, to prevent clenching people by the load or lifting equipment.

The barrier can be made using marking tape, but it is preferable to use physical barriers. See procedure 1000-S-90-04-P-0151-00-R for more information on using safety guards.

Entrance to the closed area is prohibited without permission of the lifting operator.

During the preparation, setting up or the installation of the lifting appliance the working area shall be closed for people who are not involved with preparing operations. It shall be clear for all people (e.g. by means of barriers, signals, warnings) before entry of the working area.

Personnel involved in the lifting operation shall have an escape route at all times in case of an unexpected movement of the load or the equipment.

5.5.2 Execution of Lifts – Tubular Handling Operations

Key elements and practices for the safe operation of slinging tubulars or tubular bundles are described in this section.

Note: for the purposes of this standard the term tubular is deemed as a rigid section pipe or similar such as:

- Drill pipe
- Pipeline sections
- Scaffolding poles

The following items are excluded and subject to the appropriate slinging & lifting procedures for the load:

- Flexible pipe & tubing such as HVAC ducting
- Hoses

The following points should be observed when handling tubulars:

- Only tubulars of the same diameter or size and the same length should be bundled together.
- The number of tubes in each bundle should be such that the middle tubes are gripped and will not slip out of the bundle. Whenever practicable tubulars over 140mm (5.5") in diameter should be bundled in 'odd' numbers.
- Tubulars should always be slung with two slings, each of the same length and of the same SWL.
- In the case of bundles of tubulars, a means of preventing the bundle from coming slack when it is landed should be considered, such as a wire clamp or a wire rope grip above the reeved eye that forms the 'choke' and a tie wrap of robust design on the reeved eye of the sling to prevent the eye from slipping over the rope grip.
- Slings should be placed positioned at equal distance (approximately 25% of total length) from the ends of the load. They should be double wrapped and choked around the tubular either when using steel slings or webbing slings. In order to prevent damage to the sling it shall not cross under the load.
- The slings should be of sufficient length to ensure that the choke is on the sling body, never on a sling splice, fitting, tag, eye or at the base of a sling eye or fitting.
- Tag lines shall be fitted for all lifts. The tag line shall be free of knots and other potential snagging hazards.
- Care should be taken on removing slings due to stowage movement.
- Whilst loading, consideration should be given to the installation discharging sequence.



- Ensure thread protectors and end caps are securely fastened.
- Due care and attention should be taken when loading tubulars to avoid damage to slings.
- Prior to making any lifts, the release of rigging should be considered. Precautions are required to prevent personnel from being trapped between tubulars during release of rigging.
- All drill pipe for offshore installations shall be pre-slung prior to leaving supply base or platform.

5.5.3 Execution of Lifts – Cargo Carrying Units

Key elements and practices for the safe operation of lifting CCU's are described in this section.

The following checks must be carried out prior to the lift:

- Check condition of the CCU, including doors, seals and locks and ensure that generally there are no signs of excessive corrosion or deformation.
- Check that the CCU is not overloaded.
- Check the sling set is appropriate for the CCU and that the SWL is adequate and the leg angles shall not exceed 90°.
- Check the sling set is correctly fitted with all shackles pinned or locked, no twists in legs or shackles and no snagging present.
- When suspended, lift must be level in both axes within <3% of length/breadth - equivalent to 6" (or 15.24cm) in 20' (or 6.096m), 18" (45.72cm) in 50' (15.24m).
- Check all certification is fully in date at the time of use, and has sufficient test period remaining so as to prevent the CCU certification expiring when at the Sakhalin Energy site or installation. Containers with less than one month of currency of certification shall not be shipped to any offshore installation, except by written agreement with the shipper.
- Affix any relevant hazard placards and labels when hazardous goods are carried. Remove old hazard placards and labels when the unit does not contain hazardous goods.
- Always load heavier cargo first, with lighter goods on top.
- Ensure CCU contents are lashed or wedged securely, to avoid movement in transit. If necessary, use packing between items in CCU.
- With open top CCUs, ensure drainage holes are clear.

WARNING: The larger open top containers with drainage holes blocked can hold up to 18 TONNES OF WATER.

- Use restraining door nets in closed CCUs.
- Check CCU roof, forklift pockets and any external ledges for loose items such as tools, dunnage, stones, etc.
- Always check lifting sets and fixed lifting points.
- Check the container door(s) are closed, dogs top and bottom are fully engaged and the closing mechanism secured so that it cannot inadvertently come open during handling and transport.
- Ensure that no equipment is loaded above the height of an open CCU without a Risk Assessment. This is to prevent snagging, damage to contents and potential dropped objects.
- Tape must never be used to secure loose items which could constitute a potential dropped object hazard. Loose items should be containerised and protective packaging should be secured using a certified lashing product.

5.5.4 Execution of Lifts – Wooden Crates

Key elements and practices for the safe operation of lifting wooden crates and boxes are described in this section.



The following checks must be carried out prior to the lift:

- Check the security of all wooden crates and their lids prior to any lift ensuring that nails are not the sole securing method.
- Check the condition of the wooden box. Wooden crates that are damaged are not to be lifted unless contained within a CCU or cargo net.
- Ensure that the wooden crate is clearly marked according to with lifting points and Centre of Gravity marking. Non compliant crates and Crates marked with the international no hooks symbol are not to be lifted by a crane unless a cargo net is used (see Appendix 3).
- Ensure there is a lift plan in place for lifting of wooden crates directly using the crane, avoid this type of lift wherever possible.
- Prior to authorizing work to be performed assess the likelihood of airborne debris and dropped objects.
- Review the long term storage arrangements of wooden crates in an effort to avoid deterioration from exposure to the elements. Avoid reusing wooden crates.
- Plan ahead to ensure that when crates are used there is sufficient indoor storage arrangements to ensure crates are not weather damaged.
- 'Pre used' wooden crates are not to be used to accommodate back loads of equipment.
- Check the sling set is correctly fitted with all shackles pinned or locked, no twists in legs or shackles and no snagging present.
- When suspended, lift must be level in both axes within <3% of length/breadth - equivalent to 6" (or 15.24cm) in 20' (or 6.096m), 18" (45.72cm) in 50' (15.24m).

5.5.5 Blind lifts

Blind lifts should be avoided as much as reasonably possible.

However if blind lifts are unavoidable, communications should be given the highest attention during the risk assessment.

In connection with blind lifts, there shall always be at least two persons (signaller and slinger) who have visual contact with the load and each other, and have radio contact with the crane operator. Any closed circuit television that monitors the work area is considered to be an aid, and not a replacement for either of these persons

The signaller shall place himself in a position where he has clear visual contact with the crane operator and can give the stop signal manually in the event of radio equipment failure.

Communication from the signaller to the crane operator should be continuous, two way and confirmative by repeating the command. This is particularly important during "blind lifts". If no continue signal, crane operator must stop the operation.

5.6 Planning of lifting operations

5.6.1 Lift Planning

Records of lift planning shall be held in the ISSOW system, where preparation of lift plans may be executed quickly by utilising a register of lifts, and adaptation of lift plans may be conducted more efficiently.

A Method Statement / A Lift Plan shall be prepared for every lift to be conducted on Sakhalin Energy worksites. Once the plan has been developed, it is necessary for a competent person to review the lift plan, ensure that all conditions have been satisfied, and the lift is deemed safe to proceed.

A sample lift plan is included in Appendix 1.

When writing a lift plan, shall assess the lift, and detail the following information. The plan must contain sufficient information to ensure that the lift may be conducted safely, efficiently and shall detail



- Equipment required
- Site safety requirements
- Pre-use inspections.
- Briefings and toolbox talks (as per Toolbox Talk Procedure 0000-S-90-04-O-0261-00-E).
- Quantity of personnel required and their particular roles.
- Step-by-step instructions, including designation of lifting and landing sites.
- Communication methods to be used.
- Contingency and rescue plans.

If the lift is deemed a routine lift by categorisation above, the lift plans and risk assessment may be generic. Generic lift plans and risk assessments shall state to which type of lifts they are applicable.

All Lift Plans – generic, specific or engineered – shall be developed, reviewed and approved by persons competent to do so as designated by the local Controlling Documents. For example: routine or simple plans could be reviewed by a Crane or Slings Supervisor; complicated plans by the Site Manager, Barge Engineer or Tool pusher and complex or complicated Lift Plans by a qualified, specialist engineer. Complex Lift Plans shall be approved by the Sakhalin Energy Hoisting and Lifting SME prior to the lift taking place

All Lift Plans shall be registered in ISSOW

5.6.2 Lift Plan Categorization

To encompass all types of lifts being conducted within Sakhalin Energy work sites, Sakhalin Energy shall adopt the scheme detailed below where the categorisation of lifts shall take into account all types of lifts.

Method Statement / A lift plan is required for all lifts. If the lift deviates from the plan, the person in charge shall make safe and stop the job. An assessment of the lift and determination of the lift method, equipment and number of people required are critical to planning of the lift. Therefore the following lift plan categorisation Shall be used to determine the controls that must be in place for conducting a lift:

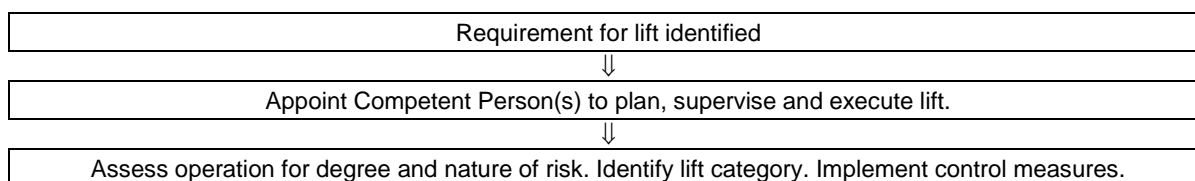
1. Routine - Routine Crane Operations/Lifting Operation
2. Non-routine - Simple / basic lifting operations
3. Non-routine - Complicated Lifting Operation
4. Non-routine - Complex Lifting Operation

For each different category of lift, personnel conducting a lifting operation shall ensure that a valid lift plan, risk assessment and toolbox talk is conducted and documented prior to the lifting operation commencing. Hazard identification and risk assessment are an integral part of planning a lift.

The following charts detail the lifting operation categorisation and the process for lift planning.



Lifting Operations Categorisation



Categories Of Lift

Control Measures

Routine

<p>Routine lifting operations.</p> <ul style="list-style-type: none"> - Ordinary operations with a crane. - Deck operations with an offshore crane and handling standard CCU's to and from a supply boat. - Load with known and evaluated weight, shape and centre of gravity. - Standard rigging arrangements. - Suitable environmental conditions. 	<ul style="list-style-type: none"> - Operation planning. - Routine Permit to Work - Written procedures, standing instructions for these lifting operations. - Toolbox talk. - 10 questions for a safe lift.
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Non-Routine

<p>Simple / basic lifting operations</p> <ul style="list-style-type: none"> - Using only one hoisting appliance (hoist, winch). - Load with known and evaluated weight, shape and centre of gravity. - Centre of gravity below the hoisting point. - Sufficient working area and ample headroom. - Standard rigging arrangements. - Not within difficult or restricted areas. - Hoisting of personnel by manlift. 	<ul style="list-style-type: none"> - Operation planning. - Permit to Work - Lifting plan showing the operations to be carried out, prepared by technician or engineer. - Toolbox talk - 10 questions for a safe lift
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<p>Complicated Lifting Operation</p> <ul style="list-style-type: none"> - Using two or more lifting appliances (hoist, winch). - Hoisting other cargo than standard CCU's to and from offshore installations. - Operator has no direct view on the load – blind lift. - Extended duration, e.g. more than one shifts. - Odd shaped loads, not having the centre of gravity in the middle of the load, but with a known weight. - Within difficult or restricted areas. 	<ul style="list-style-type: none"> - Operation planning. - Permit to Work - Risk Assessment level 1 or 2. - Lifting plan showing the operations to be carried out, prepared by technician or engineer and to be approved by assets responsible person. - Lifting Operation Certificate (LOC) - Toolbox talk - 10 questions for a safe lift
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<p>Complex Lifting Operation</p> <ul style="list-style-type: none"> - Weight of load in excess of 90% of the rated capacity of the lifting and hoisting appliance. - Hoisting of personnel by crane. - Load with unknown, difficult to estimate, weight and or centre of gravity. - Special or expensive load, whose loss would have serious impact on production. - Over active hydrocarbon-containing process equipment. - Using two or more lifting cranes. - Non-standard rigging arrangement or equipment. 	<ul style="list-style-type: none"> - Operation planning. - Permit to Work - Risk Assessment level 2. - Lifting plan / Method Statement describing the operations prepared by technician or engineer. - Approval Lifting plan / Method Statement and planning by SME. - Lifting Operation Certificate (LOC) - Toolbox talk - 10 questions for a safe lift
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5.6.3 Method Statement

In the Method Statement should be provided:

- conformance of established HE to construction and installation conditions by lifting capacity, lift and boom, wind load, and seismicity of the installation site;
- maintaining of a safe distance from grids and air-borne power transmission lines, traffic routes, and pedestrian ways, as well as safe distances from structures and storages of building parts and materials;
- conformance to installation conditions and lifting equipment operation near pit slopes;
- list of used hauling device and graphic images (diagrams) of sling indicating methods of strapping products, parts, elements;
- places and sizes of stacked cargoes and access ways;
- measures aimed at safe work based on specific conditions in the area where the lifting equipment are installed;
- location of utility premises for builders, drinking fountains, and recreation sites;
- safe distances from the bottom of the moved cargo to the most protruding vertical parts of the buildings or structures considering lengths (height-wise) of used slings and spreader beam sizes (if any);
- safe distances from boom parts, counterbalance console considering the sizes of the counterbalance ballast blocks to the most protruding vertical parts of the buildings or structures;
- sizes of the most protruding horizontal elements of the building or structures;
- measures aimed at safe work based on specific conditions at the hoist site (e.g. fencing of the construction site or installation zone); Method Statement must specify that work at height may not be carried out in open space with the maximum wind speed recorded in data sheet, in case of ice, thunderstorm, or fog which reduces visibility (snowfall, rain, fog, twilight). Method Statement must also include indications of prohibited use of equipment, pipelines and process or structural steel for attachment of installation gear.
- Emergency load recovery procedure in the event of loss of crane power.
- Identification, setting up and removal, post lift, of all barriers.
- Identification of necessary authorizations and approvals.
- Number of personnel required for the operation.
- Communication method.
- Emergency shut down / evacuation procedures for the live area in the event of problems developing with the lifting operation.
- 10 Questions for a Safe Lift.

The method statement shall be drawn up and reviewed by suitably competent persons following this Standard.

5.6.4 Risk Assessments

For all lifts executed within Sakhalin Energy worksites, a risk assessment and Lift Plan shall be prepared and documented. This section provides guidance on how these documents shall be developed.

The planning of a lift shall address all risks and implement measures to mitigate or reduce these risks as low as reasonably practicable (ALARP).

The risk assessment applied to all lifts, routine or non-routine, shall address:

- Communication barriers and how these are to be overcome
- Weight, size and centre of gravity of lift to be conducted
- Methods of slinging and availability of certified lifting points



- Availability of suitable lifting equipment, and its condition
- Path of the lift including pick up and lay down areas
- Quantity and duration of lifts
- Selection of Lifting equipment
- Conflicting work in the area
- Environmental conditions
- Levels of illumination
- Proximity hazards
- Access and egress
- Experience, competence, training of personnel
- Number of required personnel
- Pre-use lifting equipment inspections
- Communication methods
- Procedures for changing the lift plan.
- Restrictions in line of sight between Banksman and Crane Operator

The object of a risk assessment is to identify and eliminate or reduce to an acceptable level, any hazards in the lifting operation. In most cases it is not possible to totally eliminate the risks however by identifying and implementing additional safety measures the risks should be sufficiently lowered to perform the task without injury or harm to people or the environment.

When the lift plan has been developed, each task shall be risk assessed using the Risk Assessment Matrix from the Managing Risk Standard. If any specific task has a low risk rating as determined by the competent assessor, there may be no further need to implement additional measures of safety.

Implementation of safety measures identified shall be introduced after the conclusion for each step of the lifting process is determined. After implementing the safety measures, re-assess the risk and identify whether the hazard would be sufficiently contained, and if not, implement further measures to make the task as safe as possible.

When all risks have been assessed as far as reasonably practical, the conclusion for the complete lift should be determined as Low Risk. In cases where risks cannot be reduced further than Medium Risk rating as termed in the Risk Assessment Matrix from the Managing Risk Standard, the lift should only proceed with adequate supervision and control. Authorisation by management shall be sought if conducting a lift that is termed greater than Low Risk.

As a guide, use the following interpretations for risk categorisation and control.

- Low Risk – The hazards should be sufficiently contained, and the lift should proceed after all safety measures have been adopted as identified during the risk assessment.
- Medium Risk – The task should only be undertaken with appropriate management authority, after consultation with the assessment team and specialists if required. If possible, review the method of work, and assess whether there can be a safer way of doing the task to reduce the risks further.
- High Risk – Task shall not proceed. The method of work should be redefined or further implement measures to reduce the risk to an acceptable level. The controls shall be re-assessed prior to job commencement.

5.6.5 Pre-Lift Toolbox Talk

Prior to conducting lifting operations, the Person in Charge of a lift shall hold a toolbox talk with all personnel assigned to carry out the lift. The Toolbox Talk shall be as per the **Toolbox Talk Procedure (0000-S-90-04-O-**



0261-00-E). In particular the TBT shall be conducted on site and include representatives from affected teams. The content shall and cover, though not be limited to, the following elements of the lift.

- The planned Lift
- Procedures to be adhered to
- Responsibilities of each crew member
- Access and egress to job site
- Potential hazards as identified in risk assessment and specific site risks
- Tools and equipment required
- Materials required
- Work permits
- Isolations, if required
- Conflicting activities
- Environmental issues
- Contingency plans
- PPE

All personnel involved in the lift shall sign the record of Toolbox Talk Form prior to the lift being conducted. The signature of persons is confirmation of understanding of the lift to be conducted, and their required involvement.

The Toolbox Talk Form is specified in the **Toolbox Talk Procedure** and is to be adopted by all Sakhalin Energy sites, unless a suitable alternative is in use.

The toolbox talk, held prior to the execution of a lifting operation shall consider all risks that shall be present during the lifting operation. The site toolbox talk / risk assessment form is not a substitute for an engineered risk assessment, however site conditions may realize further risks which need to be contained which the engineered assessment has not identified.

The PIC shall verify that the answers to the following '10 Questions For A Safe Lift' are all addressed by the toolbox talk.

10 Questions for a Safe Lift

1. Is everyone in the working party aware of and do they fully understand the lifting and hoisting procedures applicable to the lift?
2. Has everyone in the working party attended the toolbox talk?
3. Has a pre-use inspection of the Lifting Equipment been carried out and are the Lifting Accessories tagged or marked with:
 - Safe Working Load
 - A valid certification date or colour code
4. Are all safety devices working?
5. Does everyone in the working party know the Person-in-Charge of the lift and is everyone in the working party competent and aware of his or her tasks?
6. Is the load safe to lift, e.g. not frozen to the ground or held by any means, free of potential dropped objects including ice & snow?
7. If required, is there a current Lift Plan and JSA and does everybody in the working party understand the job and precautions?
8. Does everyone in the working party know the environmental limits (e.g. maximum permissible wind speed) for the lift?
9. Is the lift area controlled and is everyone in the working party clear if the load falls or swings?



10. Are signalling methods and communication agreed and clear to you?

5.6.6 Emergency Recovery Procedures

Sufficiently detailed emergency recovery procedures shall be available onsite for each lifting appliance and to ensure safe recovery in the event that a lift has to be aborted for any reason. All personnel involved with the lifting operation shall be briefed on the emergency procedures prior to commencing operations.

The equipment manufacturer should provide adequate emergency recovery procedures however if these are not available then suitable procedures should be written and reviewed by competent persons.

Emergency recovery procedures are subject to review and approval by Sakhalin Energy designated review personnel prior to implementation.

5.6.7 ISSOW And Lifting Operations

Lifting operations should be planned and assessed using the Sakhalin Energy ISSOW system. The use of this system has a number of benefits including the automatic generation of a Toolbox Talk Form and Work Control Certificate for the task. The ISSOW system also creates a Lifting Operations Certificate when a Lifting Operations Risk Assessment is performed. This certificate describes the details of the task and ensures the Risk Assessment has identified the appropriate hazards & controls for the planned operation. The LOC is reviewed and approved by the appropriate ISSOW defined roles depending upon the category of lift.

5.7 Hoisting over live facilities

5.7.1 Purpose

Lifting Operations over live process areas should not be considered unless absolutely necessary and no suitable alternative exists. Methods such as depressurization of pipelines, shutdown of plant and evacuation of building should be considered.

On occasion however, where lifting over live process areas is considered appropriate, the control of the lifting operations is of paramount importance for any work site in order to ensure all operations are conducted safely and in a timely manner but with minimum disruption to production.

5.7.2 Scope

This article covers the minimum requirements for the administration and control of lifting operations over live process areas at all Sakhalin Energy worksites.

Live process areas are defined as, but not limited to, the following for the purposes of this article:

- Areas with live plant or process equipment.
- Buildings occupied by persons.
- Drilling areas including wellbays.
- Sub-sea structures e.g. pipelines, manifolds, caissons etc....
- Live plant (process) piping.

5.7.3 Risks and Controls

The control of lifting over live process areas is of paramount importance for any work site in order to ensure all operations are conducted safely and in a timely manner and with minimum disruption to production.



5.7.4 Lifting Over Live process areas

Any lifting operation to be carried out over live process areas as defined in the scope shall be defined as a Complex Lifting Operation as defined in this Standard and as such will be subject to strict control measures as defined in that standard.

Prior to considering the lifting of a load over a live process area, the use of an alternative method or travel path should be investigated.

The key elements, which must be considered in the planning and implementation of the lifting operation, include the following as a minimum:

- Competency of the lifting operations personnel.
- Detailed Method Statement.
- ISSOW PTW Level 2 Risk Assessment.
- ISSOW Permit To Work and Lifting Operations Certificate (LOC).
- Formally recorded Toolbox Talk.

5.7.5 Risk Assessment

Level 2 Risk Assessment shall be generated for each lifting operation over live process areas. Each risk identified shall be assessed using the Risk Assessment Matrix. The lift planning process shall reduce all risks to as low as reasonably practicable before the lifting operation may commence.

The risk assessment should particular special attention to the following:

- Implications of loss of crane power or loss of load over live area.
- Breakdown of communication method.
- Proximity hazards.
- Management of concurrent conflicting operations.
- Barriering off of lifting operation area and control of access to non-involved personnel.
- Management of changes to lift plan or method statement.
- Implications of potential dropped objects over live process area.

5.8 Personnel Lifting

5.8.1 Introduction

Personnel lifting using cranes or other lifting appliances is never the preferred option however it is occasionally unavoidable. When it is carried out it is necessary that all possible measures be taken in order to reduce the risks to the lifted personnel.

Personnel lifting operations involving cranes should not be considered unless absolutely necessary and no suitable alternative exists. The use of scaffolding or Mobile Elevating Work Platforms should always be considered before opting for the use of a crane.

All LIFTING equipments used for Personnel lifting should be inspected by competent person every 6 months basis.

5.8.2 Risk Assessment.

Before any personnel lifting is undertaken a risk assessment should be carried out by competent person.

When conducting a risk assessment, the following factors should be taken into consideration

- The necessity of the lifting;



- Alternatives available;
- The suitability of the vessel;
- The availability of sufficient clear space both at the embarkation and landing locations;
- Visibility;
- Sea-state and wind speed;
- The wind speed limitations of the lifting equipment to be used;

The risks associated with each identified hazard should be assessed and appropriate risk reduction methods introduced to control the risks.

5.8.3 Planning of Personnel Lifting Operations

Lifting and transportation of people should be carried out with the use of lifting equipment designed to perform these works.

Lifting and transportation of people should be carried out in a basket (cabin), intended only for these purposes.

Lifting and transportation of people using lifting equipment in which the passport does not have permission to transport people are allowed in the following cases:

- For the installation and maintenance of stand-alone drilling and other oil and gas production facilities;
- On oil and gas platforms installed in offshore, for personnel change;
- When moving personnel for fastening and detaching containers and cargo;
- When diagnosing and repairing metal structures of lifting structures;
- For emergency transportation of people who are unable to move.

Wherein Lifting plan for lifting and transporting people using lifting equipment must be developed with the mandatory compliance with the requirements of industrial safety and agreed by the Federal Environmental, Technological and Nuclear Supervision Service of Russia, except for cases of emergency transportation of people. Lifting cranes, chosen for transportation of people must meet the following requirements:

- Have a control system for the mechanisms, ensuring their smooth start and stop;
- Have at least twice the load capacity in comparison with the mass of the basket (cab) itself, the mass of the device intended to suspend the basket (cabin) and the nominal load capacity of the basket (cabin);
- Ensure the speed of the car moving vertically no more than 20 meters per minute.

To ensure safety, the slings used for hanging the basket should not be used for other purposes and have a margin for carrying capacity:

- For chain slings - not less than 8;
- For rope slings - not less than 10;
- For lifting eyes (shackle, rings) serving to suspend the basket on the hook - not less than 10.

Lift Plans

No personnel lifting will take place without a lift plan. A Lift Plan will be developed to the required lifting operation. All personnel lifting operations shall be determined at least "Non-Routine Complicated".

Lift Planning as defined in the Federal rules and regulations in the field of industrial safety "Safety of hazardous industrial facilities that use lift structures". When writing a lift plan, the competent person shall assess the lift. The plan must contain sufficient information to ensure that the lift may be conducted safely, efficiently and shall detail:

The lift plan should cover the following items as a minimum:

- Site and equipment safety and pre-use inspections.
- Briefings and toolbox talks.



- Checks that all safety devices are operating correctly and the pre-use inspection.
- Test of communication systems.
- Contingency and rescue plans.
- Designation of lifting and landing sites.

Planning of Personnel Transfers Offshore

The transfer of personnel using the FROG Personnel Transfer Capsule is the only currently approved method by Sakhalin Energy. Work to move the person over the sea surface should be carried out in accordance with the "Work Method Statement. Use of Personnel Transfer Capsule - Offshore Platforms" 1000-S-90-04-P-0124-00.

5.8.4 Emergency Recovery Procedures

Sufficiently detailed emergency recovery procedures will be available for each lifting appliance and personnel platform / carrier to allow safe retrieval of lifted personnel in the event of total or partial power loss to the lifting appliance. All personnel involved with the lifting operation, including the lifted personnel, shall be briefed on the emergency procedures prior to commencing operations.

5.9 Personnel

Lifting operations can be dangerous and as such, require skilled, trained and competent persons.

Root Cause Analysis of incidents related to lifting operations, indicates that as much as at least 80 % of incidents are related to human errors. These can, for example, be incomplete organizing of the operation, incorrect operation with regards to equipment and procedures, incorrect or incomplete maintenance.

It cannot be assumed, so must be assured, that all personnel involved are aware of:

- How the lifting operation is to be performed;
- The risks involved;
- The operation being performed according to rules, regulations and procedures.

This can be achieved if the people involved understand why plans and procedures are as they are and consequently realize that this is the safe way to do the operation. Involved personnel should feel ownership of the plans and recommended practices that are in use.

Employers are legally obliged to assure that all personnel involved in lifting operations are trained, have the required experience for the type of operations to be undertaken, and be formally assessed as competent.



5.9.1 Competency and training requirements

Discipline	Role / Responsibilities	Qualification / Competency Skills	Legislation Requirements
Banksman (Signaller / Flagman)	<p>A designated individual who:</p> <ul style="list-style-type: none"> Coordinates the lifting movements and maintains radio- and/or visual communication with crane operator and persons close to the load; Participates in JSA/risk assessment for the lift; Should not get involved as Slinger when also performing the role of a Banksman. 	<p>Has successfully completed training programme(s) that are appropriate to the lifts they are involved with that incorporates familiarisation with slinging hardware, slings, communication (including hand signals and radio) and safety issues associated with rigging and lifting loads, and planning of lifting operations. Has a qualification slinger certificate.</p> <p>Has a minimum experience level of at least 3 years continuous employment in a or Slinger.</p>	RD-03-20-2007
Slinger	<p>Implements slinging and linking of cargo, products, parts and units for their lifting, moving and stacking.</p>	<p>Has successfully completed training programme(s) that are appropriate to the lifts they are involved with that incorporates familiarisation with slinging hardware, slings, communication (including hand signals and radio) and safety issues associated with rigging and lifting loads, and planning of lifting operations. Has a qualification slinger certificate.</p>	RD-03-20-2007
Riggers	<p>Carries out rigging works for horizontal and vertical movement, assembly, disassembly and installation on a design mark or foundation of machines, mechanisms, machines, requiring the rigger to have special accuracy, responsibility and accuracy in work, using cranes, winches, hoists and other special devices. Determination of the mass and the center of gravity of moving and assembled units and structures. Selection and testing of cables, ropes, chains and special devices in accordance with the mass and configuration of the cargo</p>	<p>Has successfully completed training programme(s) that are appropriate to the lifts they are involved with that incorporates familiarisation with slinging hardware, slings, communication (including hand signals and radio) and safety issues associated with rigging and lifting loads, and planning of lifting operations</p>	<p>RD-03-20-2007</p> <p>Professional Standard 1180</p>
Crane Operator - Onshore	<ul style="list-style-type: none"> To be responsible for the crane operations under their control; To duly complete all required crane operation logs, Pre-Use Inspection procedures and checks. 	<p>Has successfully completed training programme(s) that</p> <ul style="list-style-type: none"> Are appropriate to the lifts involved Incorporate(s) familiarisation with equipment and: <ul style="list-style-type: none"> Crane operating safety; 	<p>RD-03-20-2007</p> <p>Professional Standard 992</p>



Discipline	Role / Responsibilities	Qualification / Competency Skills	Legislation Requirements
		<ul style="list-style-type: none"> ○ Crane system knowledge ○ Pre-operational checks; ○ Operating requirements. ○ Communication systems (including hand signals and radio) 	
Crane Operator – Offshore	<ul style="list-style-type: none"> • Responsible for crane operations on the offshore platform; • To duly complete all required crane operation logs, Pre-Use Inspection procedures and checks. 	<p>Has successfully completed training programme(s) that</p> <ul style="list-style-type: none"> • Are appropriate to the lifts involved • Incorporate(s) familiarisation with equipment and: <ul style="list-style-type: none"> ○ Crane operating safety; ○ Crane system knowledge ○ Pre-operational checks; ○ Operating requirements. <p>Communication systems (including hand signals and radio)</p>	RD-03-20-2007 Professional Standard 992
Manlift operator, Boom truck crane operator	<ul style="list-style-type: none"> • To be responsible for the sideboom crane operations under their control; • To perform crane inspections with the exception of the initial, quarterly and annual inspections; • To duly complete all required crane operation logs, Pre-Use Inspection procedures and checks. 	<p>Has successfully completed training programme(s) that</p> <ul style="list-style-type: none"> • Are appropriate to the lifts involved • Incorporate(s) familiarisation with equipment and: <ul style="list-style-type: none"> ○ Manlift and Boom truck crane operating safety; ○ Manlift and Boom truck crane system knowledge ○ Pre-operational checks; ○ Operating requirements; ○ Transfer people by crane (Frog ops); ○ Communication systems (including hand signals and radio) 	RD-03-20-2007 Professional Standard 970



APPENDIX 1: LIFT PLAN

	Sakhalin Energy Investment Company			
	Lift Plan #			
	LOCATION:		AREA:	
	JSA/RISK ASSESSMENT #:			
CATEGORISATION OF LIFTING OPERATION:	Routine <input type="checkbox"/>	Non-Routine Simple / Basic <input type="checkbox"/>	Non-Routine Complicated <input type="checkbox"/>	Non-Routine Complex <input type="checkbox"/>
DIAGRAM/SKETCH OF OPERATION ATTACHED? <input type="checkbox"/> Yes / <input type="checkbox"/> No		WEIGHT OF LOAD:		
DESCRIPTION OF LIFTING OPERATION:				
LIFTING EQUIPMENT & ACCESSORIES TO BE USED (SPECIFY TYPE, SWL)				
ALL LIFTING OPERATIONS REQUIRE THE FOLLOWING TO BE CONSIDERED BUT THIS LIST IS NOT EXHAUSTIVE				
<ul style="list-style-type: none"> - Pre-use equipment checks by operator - Suitability and condition of lifting equipment to be used - Weight, size, shape and center of gravity of load - Overturning /load integrity/ need for tag lines - Method of slinging /attaching/detaching the load - Availability of approved lifting points on load - Availability of certified lifting points - Environmental conditions including weather - Barriers and barrier watchers to prevent people walking under suspended loads 		<ul style="list-style-type: none"> - Lifting of personnel - Conflicting tasks in area/adjacent worksites - Proximity hazards, obstructions, path of load, laydown area - Experience, competence and training of personnel - Number of personnel required for task - Responsibilities clearly defined e.g. /banksman - Communication requirements - Lifting over live equipment - Visibility of the load during the lift - Access and emergency escape routes 		
TASK DETAILS (STEP BY STEP)				
Method(s) of communication to be used Radio <input type="checkbox"/> Verbal <input type="checkbox"/> Hand Signals <input type="checkbox"/>				
CREATED BY:	NAME:	SIGNATURE:	DATE:	
APPROVED BY:	NAME:	SIGNATURE:	DATE:	
DE-BRIEF and LEARNING POINTS				




APPENDIX 2: TEST & CERTIFICATION MATRIX (A3 PRINTING)

Lifting Equipment Test, Examination & Certification Matrix																											
Equipment Type	Test / Examination Requirements							Proof Load Testing					Documentation Requirements				Design Factors										
	Prior To First Use	After Repair / Modification	Every 6 months	Every 12 months	Every 24 months	Every 36 months	Every 48 months	Proof Loads					Certificate Of Conformance/Test	Destruction Sample Cert	Stress Calculations	Full Manufacturing Package	Minimum requirements										
								% Above SWL																			
								10	25	40	50	100	300	SWLx2.5					10:1	8:1	7:1	6:1	5:1	4:1	3:1	2:1	
Lifting Equipment	Cranes all types	T	T		E			D	S					X													
	Manlift	T	T		E			D	S		S			X													
	Side Boom Cranes (Pipelayer)	T	T		T			D		S				X													
	Winches (Deck Mounted)	T	T		E			S						X								X					
	Winches (Personnel lifting)	T	T		E					S				X					X								
	Powered Hoists (Electric)	T	T		E				S					X									X				
	Powered Hoists (Pneumatic)	T	T		E				S					X								X					
	Manual Hoists (Chain Bloks)	T	T	E					S					X									X				
	Lever Hoists (Puliffs)	T	T	E					S					X									X				
	Wire Rope Hoists	T	T	E					S					X									X				
	Wire for Wire Rope Hoists	T	T	E					S					X									X				
	Beam Trolleys	T	T	E					S					X									X				
	Beam Clamps	T	T	E					S					X									X				
	Plate Clamps	T	T	E					S					X									X				
	Single Sheave Bloks (Up to 25te)	T	T	E					S					X									X				
	Single Sheave Bloks (Over 25te)	T	T	E					S					X									X				
	Multi Sheave Bloks (Up to 25te)	T	T	E					S					X									X				
	Multi Sheave Bloks (Over 25te)	T	T	E					S					X									X				
	Hooks	T	T	E							S				X									X			
	Runway Beams	T	T	E					S					X													
Spreader Beams & Drum Lifters	T	T	E					S					X									X					
Fabricated Padeyes	T	T	E					S					X		X	X										X	
Lifting Accessories	Wire Rope Slings	T	T	E						S				X							X						
	Chains & accessories (Grade 80)	T	T	E						S				X									X				
	Fibre Slings	T		E						S				X					X								
	Shackles	T	T	E						S				X								X					
	Eyebolts	T	T	E						S				X									X				
	Rigging Screws	T	T	E						S				X									X				
	Open Wedge Sockets	T	T	E						S				X									X				
	Lifted Equip.	Cargo Units (ISO Containers general)	T	T	E										X												X
Offshore Containers		T	T	E			E					S		X													
Personnel Transfer Basket (Frog)		T	T	T							S			X					X								
Personnel Workbasket		T	T	T						S				X					X								
Key:																											
Test	T																										
Examination	E																										
Static Test	S																										
Dynamic Test	D																										
Maximum Gross Mass	M																										
Applicable	X																										
Load Limiter Exavination	L																										

APPENDIX 3: MARKING OF CARGO CARRYING UNITS

MARKING OF CARGO CARRYING UNITS	
	Do not use hooks. Hooks are prohibited for handling the transport package
	Sling here. Slings shall be placed where indicated for lifting the transport package
	No hand truck here. Hand trucks shall not be placed on this side when handling the transport package
	Top. Indicates correct upright position of the transport package
	Center of gravity. Indicates the centre of gravity of the transport package which will be handled as a single unit
	To lift directly for a load. Lifting is just right for the goods, that is, lift cargo for packaging prohibited
	Do not use forklift truck here. Transport package should not be handled by forklift trucks
	Fragile. Lift with care
	Unit shall be protected from direct sunlight
	Unit shall be kept dry
	Temperature limitation. The range of temperatures for lifting, transportation and stocking
	Perishable cargo.



	<p>Vacuum packing. During lifting, transportation and stocking package can not be open.</p>
	<p>Open here. Package can be open only in the marked place.</p>
	<p>Unit shall be protected from radiation</p>
	<p>Unit shall be protected from sources of radioactivity</p>
	<p>Do not roll</p>
	<p>Tropical packing</p>
	<p>Do not stockpile</p>
	<p>Limited stockpiling</p>
	<p>Clamp here</p>
	<p>Do not clamp</p>
	<p>Limit for number of tiers in stockpile</p>