Landsvirkjun’s Requirements Towards Contractors and Service Providers with Regard to Environmental Matters and Safety
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Introduction

Landsvirkjun's role is to maximize the potential yield and value of the natural resources we have been entrusted with, in a sustainable, responsible and efficient manner.

In Iceland, Landsvirkjun is a leader in the generation of electricity via the utilization of renewable energy sources.

Landsvirkjun's operations are certified according to the ISO 9001 Quality Standard, the ISO 14001 Environmental Management System and the OHSAS 18001.

Many contractors are involved in the Company's operations. They work both independently and in cooperation with our staff on various contracts. It is evident that a coordinated effort and successful collaboration creates a positive result and gives Landsvirkjun's management the opportunity to set objectives with regard to health and safety, alongside other matters pertaining to the Company's management.

We hereby welcome you into the partnership that continually strives to make Landsvirkjun the best energy provider in Iceland. At Landsvirkjun we make green energy a reality.
Landsvirkjun’s Environmental Policy

Landsvirkjun is at the forefront of environmental issues and supports sustainable development within society. The Company is committed to acquiring knowledge on the environmental impact of its operations and also to reducing any impact.

Further information regarding environmental matters on pages 10–29.
Policy targets

- Better utilization of natural resources
- Carbon neutral operations
- Operate in harmony with nature and the physical landscape
- Stakeholder engagement
- Operations without environmental incident

The purpose of this document is to define and outline the requirements and recommendations that are to be complied with by all contractors and service providers. Each section below details the practices required to fulfill the policy targets and therefore comply with the objectives of the Environmental Policy. It should be noted that some of Landsvirkjun’s requirements exceed the applicable legal requirements. However, the requirements presented herein, regarding environmental issues in Iceland, are not exhaustive and do not relieve contractors and service providers from fulfilling any laws or regulations in effect at any time.

Landsvirkjun operates according to a certified environmental management system in accordance with the ISO 14001 standard.
Landsvirkjun's Safety Policy

Landsvirkjun is a leading company in health and safety. Landsvirkjun’s policy is 0–accident policy with focus on employee’s wellbeing in the workplace. The conviction that health and safety is prioritized is a key factor in making Landsvirkjun a good place to work.

Further information regarding matters of safety on pages 30–49.
Policy targets

➤ ZERO-accidents operation

➤ Working environment contributes to maintaining good health and wellbeing

➤ Employees are guaranteed necessary safety training and health care

➤ Risk is assessed in all operations

➤ The delegation of authority is clear and employees know that their safety is a priority

➤ Reviews and constant improvements in health and safety
Landsvirkjun's Requirements and Recommendations Towards Contractors and Service Providers with Regard to Environmental Matters
Operations in harmony with nature and the ecosystem

_Landsvirkjun’s operations are accompanied by unavoidable disruption to the environment. Disturbance to the land, as a result of research and construction, can vary and irresponsible behavior such as off-road driving can cause irreversible damage to nature. It is Landsvirkjun’s policy to support and maintain natural diversity and to minimize any disturbance._

> Any disturbance to the natural environment should be kept to a minimum; both to the ecosystem and geological formations.

> Any ground disturbance outside the construction site is prohibited.

> Any unnecessary disturbance should be avoided within the approved construction site.

> Off-road driving is prohibited.

**Recommendations**

- Vulnerable aspects of wildlife and nature near a construction site, such as bird-nesting areas and spawning areas in rivers and streams, should be given special consideration.

  More detailed information is presented during environment and safety courses held for a particular project or from the project manager.
Courses on environmental matters

_Landsvirkjun’s policy requires every employee, contractor and service provider to receive the appropriate instruction on environmental matters before a project begins._

> Landsvirkjun’s representative shall assess the contractor’s and service provider’s personnel to evaluate the need for a special course on environmental matters (organized by Landsvirkjun) prior to the commencement of work.

Environmental mishaps – notification

_It is Landsvirkjun’s policy to record any environmental mishap to prevent such mishaps in the future._

> In the event of an environmental mishap:
  The contractor or service provider shall contain the source of pollution and prevent it from entering the environment or spreading any further.

> The contractor or service provider shall contact Iceland’s emergency number 112 if the pollution or environmental damage is so extensive that an immediate cleanup is not possible.

> The contractor or service provider shall notify Landsvirkjun’s representative of the incident as well as the appropriate public health authority.
Utilization of groundwater – cold water

Groundwater is used by Landsvirkjun for cooling purposes and human consumption during both the construction and operations phase. It is Landsvirkjun’s policy to conduct its operations in harmony with nature and the ecosystem.

- The contamination of groundwater is prohibited.

Recommendations

- Water extraction should be kept at a moderate level to limit any impact to the ecosystem.
- An emphasis is placed on the preservation of water quality. The contamination of groundwater when handling toxic substances and hazardous substances should be avoided.
Water and soil pollution

Contractors and service providers can cause water and soil pollution if due care is not taken. It is the policy of Landsvirkjun to operate in harmony with the ecosystem and nature, in all construction projects and in regular operations.

- The pollution of water or soil is prohibited.
- The release of oil and oil products into water, groundwater or soil is prohibited.
- Contaminated soil shall be removed immediately and delivered to a recognized waste disposal specialist or treated in accordance with instructions provided by the relevant public health and environment authority.
- The discharge of toxic or hazardous substances such as oil products and turpentine, into drain or sewage systems, is prohibited.
- Sedimentation and septic tanks shall have the sufficient capacity for the purposes intended. This must be proven by calculations and monitoring.
- Water discharged into the natural water channel (from drilling, tunnel excavation and other work) shall not contain particles larger than 75 µm in diameter.
- The quantity of oil sludge in oil separators and the quantity of sediment in septic tanks must be regularly monitored. Separators and tanks shall be emptied as required to ensure efficient function. Emptying shall be carried out by approved contractors.
> Spilled toxic or hazardous substances must be prevented from entering wastewater systems by using all available methods such as absorbent materials and/or rubber mats to close drains.

> A plan must be made available for monitoring effluents and the inspection of oil separators and septic tanks.

**Recommendations**

> Tar removers, suitable for oil separators, should be used to increase the effectiveness of oil separators. Cleaning agents that do not reduce tank effectiveness should be used to ensure the efficient function of septic tanks.
Fossil fuels and the greenhouse effect

Burning fossil fuels release greenhouse gases into the atmosphere. It is the policy of Landsvirkjun to reduce greenhouse gas emissions in its operations and to become a carbon-neutral company.

- Vehicles and machinery subject to inspection shall be inspected in accordance with set regulations to ensure that exhaust emissions remain within permissible limits.
- The appropriate safety measures shall be implemented on site to minimize the risk of fuel and oil spill during the filling of tanks, equipment and machinery. Biodegradable oils (oils that break down easily and do not have a negative effect on water biota) shall be used in sensitive environments.
- All machinery shall be equipped with absorption mats or other approved equipment for the containment of oil spills. Oil spills must be cleaned up immediately.
- Significant spills (over 50 liters) shall be reported to a Landsvirkjun representative and the appropriate authorities.
- Oil tanks shall fulfill any regulations in force at any time. Tanks must be positioned and protected in such a way as to minimize the risk of collision or damage.
- The transportation of more than 1000 liters of diesel (no unit shall exceed 4500) or 330 liters of petrol/gasoline requires the obtainment of a special license (ADR).
Contractors and service providers shall register their fossil fuel consumption and submit this information for inclusion in Landsvirkjun's green accounts.

**Recommendations**

- The use of green and eco-friendly vehicles is encouraged: Vehicles that do not consume fossil fuels or release < 120 g CO₂/km (passenger vehicle) and < 250 g CO₂/km (SUV).
- Employees should drive in a fuel-efficient manner in order to minimize fuel consumption and pollution.
- The use of engine heaters in vehicles is encouraged.
- Vehicles and mechanical equipment should not be kept running idle.
- The maintenance of mechanical equipment should be carried out in such a way as to minimize the risk of any unnecessary smoke or soot emissions.
**SF\textsubscript{6} emissions from electrical equipment**

*Sulfur hexafluoride (SF\textsubscript{6}) is one of the most potent greenhouse gases and its importation is prohibited (according to current regulations) except for use in switchgear and electrical equipment. It is Landsvirkjun’s policy to prevent the release of greenhouse gases.*

- All electrical equipment containing SF\textsubscript{6} shall have pressure sensors to reduce the risk of leakage. Contractors and service providers shall be certified in accordance with regulations and shall implement procedures that minimize the risk of leakage from electrical equipment. Contractors must have a response plan for leakages.

- Any excess amounts of SF\textsubscript{6} left after the filling of new equipment shall be removed from the area. Used gas cylinders must be checked for leakages and contractors shall inform Landsvirkjun as to how they intend to utilize and transport the substance.

**General waste**

*General waste means any waste other than hazardous waste. Landsvirkjun’s policy requires the reduction of waste from its operations and the sorting, reuse and recycling of any unavoidable waste.*
> Waste shall be sorted for reusing and recycling whenever possible.

> All waste shall be delivered to a recognized waste disposal specialist. A permit must be obtained from Landsvirkjun for the reuse of a certain type of waste (such as wood or metal) instead of handing it over to a recognized waste recipient.

> Waste produced by contractors or service providers and delivered to any of Landsvirkjun’s sites of operation must be sorted in accordance with the environmental management guidelines for that particular site of operations.

> Contractors shall submit information on the quantity of waste accumulated during each project to Landsvirkjun’s representative.

> Waste must be stored in containers or in such a way that it neither blows away nor pollutes the environment or the physical landscape.

**Recommendations**

- Contractors and service providers are encouraged to minimize waste and to sort waste in the appropriate manner.
Procurement

It is Landsvirkjun’s policy to use green procurement measures, minimize greenhouse gas emissions and to increase the use of renewable resources in the design and construction work of every project carried out by Landsvirkjun.

Recommendations

▸ The management of projects and working procedures so as to improve the utilization of materials and to reduce consumption

▸ The utilization of renewable resources and energy

▸ The utilization of reusable and recyclable materials

▸ Choosing products and services certified as environmentally friendly

▸ The use of durable, wear-resistant materials
Toxic substances and hazardous substances

Toxic and hazardous substances shall be labeled appropriately (in Icelandic and in any language used by any foreign employees). It is the policy of Landsvirkjun to reduce the use of toxic and hazardous substances and to avoid any risks associated with the use of these substances.

Hazard labels and hazard pictograms

Substances are labeled in accordance with specific regulations on form and content. Labels provide information on the dangers of particular substances, guidance on the use and storage of substances and provide information on the appropriate response to accidents. Substances are labeled with the warnings “Danger” or “Caution” and the labels include hazard and precautionary statements.

- The use of toxic substances is to be avoided and the use of hazardous substances reduced as much as possible.
- The contractor or service provider must submit a list of all toxic and hazardous substances to a Landsvirkjun representative at the beginning of a project as well as the material safety data sheets (MSDS) for all substances.
- A risk assessment must be completed before these materials are used.
**GHS01** – May explode if exposed to fire, heat, shock, friction. Avoid ignition sources (sparks, flames, heat). Keep your distance. Wear protective clothing.

**GHS02** – Flammable if exposed to ignition sources, sparks, heat. Some substances with this symbol may give off flammable gases in contact with water. Avoid ignition sources (sparks, flames, heat). Keep your distance. Wear protective clothing.

**GHS03** – Can burn even without air, or can intensify fire in combustible materials. Avoid ignition sources (sparks, flames, heat). Keep your distance. Wear protective clothing.

**GHS04** – Contains gas under pressure. Gas released may be very cold. Gas container may explode if heated. Do not heat containers. Avoid contact with skin and eyes.

**GHS05** – Corrosive material that may cause skin burns and permanent eye damage. Avoid contact with skin and eyes. Do not breathe vapors or sprays. Wear protective clothing.

**GHS06** – Toxic material that may cause life threatening effects even in small amounts and with short exposure. Do not swallow the material, allow it to come into contact with skin or breathe it.

**GHS07** – May cause irritation (redness, rash) or less serious toxicity. Keep away from skin and eyes. Avoid release to the environment.
GHS08 - May cause serious and prolonged health effects on short or long term exposure. Do not swallow the material, allow it to come into contact with skin or breathe it.

GHS09 - Toxic to aquatic organisms and may cause long lasting effects in the environment. Avoid release to the environment.

Substances prohibited by Landsvirkjun

The following substances are prohibited by Landsvirkjun:


- The use of a substance subject to restrictions by REACH requires authorization. A Landsvirkjun representative must be notified and the application will be considered by Landsvirkjun’s Environmental Division. The choice of substance must be justified in the application. Information must be provided on the quantity of the substance in question, which part of the work plan the substance will be used in and how the substance should be used and handled.
Handling toxic substances and hazardous substances

- Contractors and service providers must have the necessary licenses required by the law and regulations pertaining to the purchase and use of toxic and hazardous substances.

- The handling and use of these substances must be in accordance with material safety data sheets (MSDS). Safety equipment shall be available during use. The discharge of these substances into the environment, sewage systems or drains is prohibited.

- Any surplus substances and toxic substance packaging shall be delivered to a hazardous waste disposal site.

Storing toxic and hazardous substances

- Toxic substances, hazardous substances and goods containing such substances shall always be stored in a secure and safe manner. Unauthorized personnel shall not have access. The choice of storage space must ensure that these substances cannot enter any drains. Substances must be stored in a well-ventilated area.
Packaging for toxic substances and hazardous substances

- The transfer of toxic substances or hazardous substances into other containers is prohibited unless the packaging is suitable for the particular substance and is marked in accordance with the applicable requirements.
- Packaging specifically designed for toxic substances or hazardous substances may not be used for any other purpose.

Material safety data sheets (MSDS) for toxic substances and hazardous substances

- MSDS (cf. relevant regulations) shall be available at the site of use for all toxic substances and hazardous substances. The contractor’s safety officer shall have a record of all the safety data sheets on toxic and hazardous substances to be used in the project. Landsvirkjun’s representative shall have access to this overview. MSDS are provided free of charge by all suppliers. MSDS must be in Icelandic and in the language used by any foreign employees.
Hazardous substances

Hazardous waste is waste containing a toxic substance or hazardous substance. Examples of hazardous waste include oil products, waste oil, paint products, oil-soaked waste, oil filters, cleaning agents, acids, cuttings, vehicle batteries, batteries and surplus chemicals. Landsvirkjun’s policy requires the reduction of hazardous waste.
Hazardous waste must be kept separate from other waste and be handed over to a recognized waste disposal specialist.

Hazardous waste must be stored in such a way that there is no risk of polluting the environment. Different substances must be kept separate and in their original packaging. If hazardous material is transferred to a bottle or another container it must be labeled with the relevant information on the substance’s hazardous properties (flammable, irritant) and the type of substance (petroleum product, paint, solvent, etc.). Only secure, dependable packaging appropriate for the particular substance should be used.

The contractor shall submit their records on the disposal of hazardous waste to Landsvirkjun’s representative. They must identify the type and quantity of waste and keep copies of waste disposal certificates.

Any contractor or service provider in doubt as to whether a substance is considered ‘hazardous waste’ shall seek advice from the recognized waste recipient, the regional public health and environment authority or the Environmental Agency of Iceland.
Design of structures and landscape design

Any structures constructed in connection with energy generation are particularly prominent in Iceland as the country is known for its open landscape, wilderness and low-growing forests. It is Landsvirkjun’s policy to achieve a balance between the design of structures, landscape design and the natural environment.

➢ The design of structures and landscape shall be in accordance with Landsvirkjun’s policy.

➢ The provisions outlined by the project specifications on permanent structures, material extraction sites (mines), spoil areas and work sites for work camps and other facilities shall be fulfilled.

➢ The construction site should be kept tidy by all employees during the construction period.

Some points from Landsvirkjun’s Landscape policy

➢ The natural environment, spirit of the location and landscape at each site should be considered in the landscape and structure design.

➢ Landscape analysis shall be used as the basis for power project design and any decisions pertaining to the design of the project.

➢ Eco-friendly perspectives are used in preparation work, design work and construction.
Noise

*It is Landsvirkjun’s policy to conduct its operations in harmony with nature and the ecosystem.*

- Contractors operating on-site shall fulfill the requirements set out by current regulations on noise levels: 70 dB within industrial zones, 50 dB in outdoor recreational areas in close proximity to the construction site and 45 dB in the vicinity of recreational buildings.

Recommendations

- Work carried out in vulnerable areas or during sensitive periods (nesting periods) should be executed in such a way as to minimize disruption.

- Preventive measures shall be implemented to ensure that noise levels remain within acceptable limits. These measures include the use of mufflers to decrease the noise from wells and organizing work in such a manner that the noisiest work is carried out when it causes the least impact.

- The maintenance of vehicles and machinery must be managed in such a way as to cause minimal noise impact and should fulfill traffic noise level requirements.

- Contractors and service providers are asked to respect the Environmental Agency’s request to reduce noise during peak tourist periods.
Landsvirkjun's Requirements and Recommendations towards Contractors and Service Providers in regard to Occupational Safety, Health and Environment
Safety, health and working environment plan

During the design and preparatory stage of a project, the client shall take measures to allow for the possibility of ensuring complete safety and good facilities and sanitary practices during execution of the project. At the preparatory stage, the client is responsible for working on or seeing to the preparation of a safety, health and environment plan (SHE plan).

Consistency must exist between this SHE plan and the SHE plan and risk analysis that the contractor has to prepare during the construction phase, with the stipulation that the contractor present such a plan at the start of the project.

Work permits

Landsvirkjun or its representative shall supervise the project on site. The company shall appoint a coordinator of safety and health measures, in compliance with current acts and regulations.

When working on the premises of a power station that is in operation, the contractor must acquire a project permit from the station manager or her/his representative, using the form VKL–55, Verkleyfi.
Nomination and responsibility of security officer

The contractor shall designate a safety officer(s) and shall arrange for an election of safety stewards. This election must occur at the start of the project and the contractor must submit information on these matters and on the number of personnel to Landsvirkjun and the Administration of Occupational Safety and Health (AOSH).

- Together with the contractor’s SHE officer, the above-mentioned employees shall serve as communication and liaison officers with Landsvirkjun in the field of safety concerns for as long as the project lasts.
- A contractor’s SHE officer is required to have a vocational education or comparable education as a minimum and to be familiar with worker protection issues. In the case of major projects, a safety committee must be kept active, in compliance with the applicable rules.
Safety training of employees

- Before starting to work on site, every employee of the contractor must be ascertained to have received appropriate safety training, with the contractor demonstrating to Landsvirkjun that such training has occurred.

- Crew leaders are required to review safety concerns with their personnel every day and to make sure that everyone is conscious of their own safety and that of others.

- All personnel at a construction site need to be aware of and follow the emergency response plan for that construction site.

- Whenever necessary, the coordinator for safety measures shall introduce emergency response plans, in all cases taking note of the individual emergency response plans of every contractor on site.
Requirements regarding first aid

- At each work site, there shall be employees who have attended a first-aid course and know how to respond in case of emergency.
- The contractor shall see to having the proper equipment for emergency help on hand, such as a first-aid kit.
- Should an accident or emergency arise, the general emergency number, 112, shall be called. The following prioritization shall be followed in such instances:

  1. Assure safety at the location
  2. Give emergency help
  3. Give notification of the incident
  4. Provide general first aid

- A person calling the emergency number, 112, must speak calmly and plainly, telling the exact location, a telephone number and name; s/he should describe the incident and state the number of injured people and their condition.
- Larger working sites shall initially outline work areas and deliver this information to the emergency services so that the area in question can be located immediately when necessary.
Requirements regarding cleanup and finishing touches at worksites

- A worksite shall be demarcated and unauthorized traffic onto it obstructed insofar as possible. Where work occurs in or by a traffic artery, the site shall be indicated in accordance with the laws and regulations on markings for worksites, cf. the Road Administration and the relevant local authority or proprietor of the road.

- On project completion, the development site shall be tidied and left in accordance with the conditions appearing in the tender documents and project contract. Signs and obstructions that might cause danger are to be removed from the area.

Tobacco and controlled substances

- Smoking is forbidden on those Landsvirkjun premises that are covered by the Tobacco Control Act.

- The consumption of any narcotics or strong alcohol is strictly and entirely prohibited, and no one under the influence of alcohol or narcotics shall be permitted access to the premises, vehicles or worksites of Landsvirkjun.
Notification of accidents, damage or potential danger

- A contractor is obligated to notify Landsvirkjun of circumstances that might create danger and to take measures for avoiding accidents and losses.

- A worker’s immediate superior shall be notified of every accident, and it must be handled and recorded as soon as possible, irrespective of its seriousness.

- A contractor is obligated to prepare a summary of all accidents, dangerous incidents and losses to machinery and equipment and to turn the summary in to Landsvirkjun.

- The causes of work accidents shall be analyzed and remedied immediately, so as to prevent their recurrence.

- In addition, the AOSH, Consumer Agency (in instances of electrical accidents) and the police must be notified of an accident as promptly as possible.

- These notifications shall reach the appropriate parties within 24 hours, cf. the currently applicable provisions.

- Project meetings shall review the hazardous situations, accidents and mishaps that have occurred since the previous meeting.

- Landsvirkjun is to be informed immediately of any notifiable accident.
Violation sanctions

- In instances of violations relating to occupational safety, health and environment, Landsvirkjun reserves the right to impose sanctions.

- If finalized agreements and/or tender specifications do not deal with such sanctions, the Landsvirkjun representative for safety concerns shall be authorized to decide in each case what sanctions to apply.

- In cases of extremely grave violations, immediate expulsion of an employee from the site is permissible if s/he has demonstrated reprehensible behavior.

- Should a contractor not comply with warnings, Landsvirkjun reserves the right to postpone payments until safety issues that are wanting have been rectified.

- Landsvirkjun may cancel the agreement between them. Sanctions shall always be stated in writing and be signed by a Landsvirkjun representative for safety concerns.
Requirements regarding personal protective equipment

The contractor shall make sure that her/his employees always use suitable personal protective equipment that is in accordance with the risk analysis of the particular project. Moreover, the contractor shall ensure that her/his employees have been trained in using personal protective equipment and that they use it whenever required by rules or regulations, in order to prevent any health damage. The personal protective equipment must display CE marks and comply with current rules.
Ear protectors – Ear protectors shall always be worn in noisy places (cf. AOSH requirements).

Work clothes – Employees must wear protective clothing or safety vests that meet standards on visibility and, whenever appropriate, clothing that protects against burns and other mishaps.

Breathing masks – When using solvents or other substances that may emit hazardous fumes, breathing masks must be worn. Breathing masks must also be worn where dust pollution occurs, for instance in underground tunnels.

Safety helmets – Safety helmets are mandatory for all construction work.

Safety goggles and face shields – Safety goggles and face shields must be used for work where there is a risk of eye injury and where machinery or equipment may throw particles or shavings.

Protective footwear – During construction work, personnel shall always wear protective footwear.

Safety belts and safety lines – Where a danger of falling exists, suitable safety belts with safety lines must always be used.
Requirements regarding vehicles

- A contractor is responsible for all of the equipment, machinery and tools s/he owns and shall make certain that their condition fulfills the stipulations of acts and regulations. All heavy machinery and equipment shall have a current inspection certificate.

- Vehicle and machinery operators must have the prescribed credentials for operating the equipment concerned, a driving license and/or a license issued by the AOSH.

- The greatest possible caution must be exercised while operating machinery, and it is desirable that drivers be guided by an assistant while backing heavy machinery.

- The contractor bears responsibility for machinery controls and safety equipment being in order and for the secure fastening of loads.
> When leaving a vehicle, it shall be left behind in keeping with the rules at the operations site involved. As for lifts, they shall be left with the lift forks in their lowest position.

> The transport of passengers using vehicles or machinery is prohibited unless there is a special seat intended for the passenger(s).

> All machinery shall be equipped with lights and any other equipment that is expected of equipment used for driving in traffic.

> Lifting people with machinery that has not been approved by the AOSH for that purpose is strictly prohibited.
Requirements regarding fire protection and orderliness on site

- Contractors working in or by Landsvirkjun facilities shall acquaint themselves at the start of the project with the escape routes and assembly areas for the particular facilities or site. Also, contractors shall make sure they acquire and maintain at least minimal fire extinguishing equipment.

- In working areas where rescue teams have been organized the contractor shall provide the necessary staff to train and participate in such activities.

- Fire bells or sirens sound in order to call for evacuation due to fire or other danger; contractor personnel are thereupon obligated to vacate without delay the facilities or site involved. Following evacuation, the contractor’s safety officers shall contact Landsvirkjun, which will decide in consultation with the contractors on the continuation of work.

- The operations site must be kept orderly and organized, with no combustible material nearer to a building than 12 m, unless a closed waste container is used. This distance must be greater if substantial quantities are involved. Trash and combustible material that is not being used shall be removed from the worksite, while the material that must be on site due to construction shall be positioned such that fire squads and other emergency services have ready access throughout the site.

- Extreme caution shall be shown while using or handling flammable liquids or gases, in accordance with safety instructions. Such substances shall be stored in a secure place while
not in use. It is not permissible to burn materials at a construction site.

- Special attention must be given to the positioning of lighting equipment, taking care that it cannot cause overheating and fire. Where substantial dust, wood shavings and so forth are present, lamps shall have safety glass to protect the bulb.

- All combustible material shall be removed where welding is to occur, shielding any combustible articles that cannot be taken away. After welding has been completed, it must be made certain that there is no risk of any fire starting, and the contractor must keep a watch on the welding area throughout the following hour. There is good reason to treat gas and oxygen cylinders with extreme caution, so every cylinder must be equipped with the necessary safety equipment, such as backflow check valves, flashback arrestors and handles with backflow arrestors. When in use, cylinders shall be securely fastened onto a cart that is purpose-made for them or else be kept so that they cannot fall over. Extra supplies shall be stored in a secure manner, away from the site of work.

- Where there is felt to be any risk of fire, a fire extinguisher must be on hand and be readily accessible. A location within 25 meters of the point of work is preferable, with the type of extinguishers being based on the work and materials on site and their number being based on the fire load, so as to attain an adequate total extinguishing capacity.
Requirements regarding electrical work

The Regulations for Electrical Installations, No. 285/1998 [first issued as No. 264/1971 in Icelandic], as subsequently amended, must be observed in every instance. The safety exclusion zone surrounding aerial high-voltage lines and high-voltage equipment shall be determined in the following manner, cf. rules from the Safety Division of the Consumer Agency in its memorandum numbered 1/84:

„A safety distance shall be specified for each task. This shall be determined by adding a suitable supplement to the hazard distance that shows consideration for the work methods, equipment and facilities, material, personnel skills, weather conditions and safety supervision (see illustration). The safety distance shall be communicated to those concerned as the minimum safe working distance from either particularly specified parts of the body or a part of the machinery or equipment to a charged part of the electrical installation.“

<table>
<thead>
<tr>
<th>Measured operating voltage –kV</th>
<th>Maximum operating voltage –kV</th>
<th>Hazard distance cm (considered equal to touch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–33</td>
<td>36</td>
<td>50</td>
</tr>
<tr>
<td>5–66</td>
<td>72,5</td>
<td>75</td>
</tr>
<tr>
<td>120–132</td>
<td>145</td>
<td>120</td>
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<tr>
<td>150</td>
<td>170</td>
<td>140</td>
</tr>
<tr>
<td>220</td>
<td>245</td>
<td>210</td>
</tr>
<tr>
<td>380–400</td>
<td>420</td>
<td>310</td>
</tr>
</tbody>
</table>
If circumstances arise in which personnel or equipment must enter such an exclusion zone, the contractor shall submit a risk assessment and safety rules, together with written authorization from the person in charge of electrical safety.

Work using a power station’s operating electricity shall only be performed in close consultation with someone on shift at the site.

Care must always be taken during work near a charged object or object which might possibly be charged.

Work of any kind on electrical equipment shall be the responsibility of a certified electrician, and electrical contractors shall operate according to an authorized safety control system.

In regard to other aspects of the operation, inspection and maintenance of electrical installations, please see memorandum No. 1/84 [in Icelandic] from the Consumer Agency.
Requirements regarding work at fall heights

An effort shall be made to perform as many tasks as possible on the ground, in order to avoid working at heights. Work at fall heights is not restricted to locations high above ground, as such work may simultaneously be classified as work below ground, for instance in underground tunnels, ditches and pits. The equipment selected must always offer the optimum ergonomic conditions for personnel, using personal protective equipment if it is impossible to apply ordinary safety measures.

Fall protection shall be used in every instance where:

- The risk exists of an employee falling and being injured
- Work is being carried out beyond areas normally bounded by handrails
- An employee finds such protection necessary

Fall protection may entail but shall not be restricted to:

- Work platforms
- Reliable handrails
- Appropriate safety belt(s) with a safety line, to provide protection from falling
Requirements in regard to lifting

- Slings, chains, crane cables, cargo hooks, and cranes or equipment used for lifting shall be certified and their capacity shall conform to the weight of the load to be lifted.

- Slings and chains must be in perfect shape and their condition inspected regularly.

- When lifting, careful attention must be paid to the locations of other employees, never lifting a load above any personnel; also, the signaler must remain at a safe distance.

- Lifting equipment must be in perfect condition; the contractor is responsible for ensuring it is inspected on a regular basis.

- No load may ever be left hanging in a crane.

- The contractor bears responsibility for keeping the leveling feet in proper order and for their correct use, including their placement on an appropriate base.

- Before lifting starts for extremely heavy objects, such as mechanical equipment or large transformers, an approved risk assessment must be on hand concerning the precautionary measures, choice of lifting equipment and manner of executing the lift.
Requirements regarding work in high-temperature fields

> Special care shall be taken when working near steam or hot-water pipes. Where there is a risk of being burned by hot water, contractors shall put on appropriate footwear and long gloves.

> A risk assessment must be available prior to starting work on a steam supply system that is or has been in operation; this assessment should show whether it is acceptable for employees to be there alone and whether any potential risk stems from heat and/or gases at the proposed worksite.

> Two life-threatening gases are carbon monoxide (CO) and hydrogen sulphide (H₂S). The greatest risk is posed by work in steam pipes that are cooling off or have become cold, for instance on account of cleaning. Another gas that can be dangerous is carbon dioxide (CO₂), if it is present in sufficient quantities. Hazardous gases that are heavier than air (hydrogen sulphide, H₂S, and carbon dioxide, CO₂) may collect in basements and depressions, resulting in death where their concentrations are substantial.

> Contractors shall educate their personnel on the hazards stemming from gases and urge them to stay alert.

> Personnel needing to work on a steam supply system must have an alert meter on site, and no project permit shall be issued until consideration of every risk has been assured and arrangements completed for achieving employee safety.
In the case of new construction projects for a steam supply system that is not yet connected to geothermal heat, the same rules are to apply as those applying other construction work.

Requirements regarding work in closed spaces

 Contractors who will be working in a closed space shall present their task procedures and turn in a risk assessment before their personnel are allowed into the closed space.

 A supply of breathing air into the closed space must be assured, as well as escape routes out of the space, should an emergency arise.

 Any work in closed spaces must comply with the current rules prescribed by the AOSH.

Requirements with regard to the handling and use of hazardous substances

 The requirements outlined on pages 20–24 on environmental issues shall be adhered to.
This book belongs to:
Reminders: