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TECHNICAL GUIDELINES

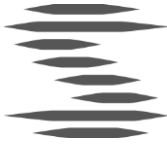
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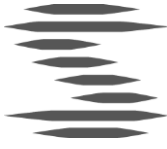
# Work environment requirements – Turnkey contract Client's responsibility

This technical guideline contains the work environmental requirements for turnkey projects, where Svenska kraftnät has Client responsibility under the work environment legislation. The guideline applies when carrying out building and civil engineering works on behalf of Svenska kraftnät.

This English text is to be regarded as a translation of the Swedish guideline. The Swedish text and the interpretation thereof shall govern the contract and the legal relations between parties.



Revision	Change note	Date
1	First edition	13/09/2016



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# 1 Definitions

Work environment plan:	Document which, among other things, specifies the work environment organisation, risks and measures in the present project to ensure the applicable health and safety requirements. The plan shall as a minimum include the requirements set out in the Work Environment legislation, and be structured according to Svenska kraftnät's template that can be found at svk.se.
Deviation	Work-related adverse incident or non-fulfilment of requirements: <ul style="list-style-type: none"><li>&gt; Event where accident or incident has occurred or could occur</li><li>&gt; Observation of an error, a risk or a deficiency that can lead to an accident or emergency (risk-sighting)</li><li>&gt; Departure from working methods, practices, routine, legal requirements, etc.</li><li>&gt; Deficiency in product, service and delivery</li></ul>
BAS:	A Building work environment coordinator shall be appointed in accordance with the Work Environment Act for both planning and design (BAS P) and construction phase (BAS U). The BAS may be a legal entity, business or individual.
Customer	The party who orders a product or service
Client:	The party who has construction work performed shall during every stage of the planning and design ensure that the working environment be taken into consideration both during the construction phase but also during use. Client shall appoint construction environmental coordinator (BAS)
Building and construction work:	Work or activities which the Supplier carries out in the field under contract with Svenska kraftnät, cf. AFS 1999:3.
Contractor	Companies that deliver more or less complete construction services including material, for which AB and ABT apply.
Permanent work site:	Permanent work sites are station, tunnel, pylon and technical shed. The company that manages the permanent work site has mandatory overall coordination responsibility.
HSEQ:	Work environment, electrical safety, environment and quality (safety is excluded).
Consultant	Consulting company that provides services and includes the role Project Planner.
Supplier:	Collective term for any company that has a contract with Svenska kraftnät and is supplying products/services. It includes Contractor and Consultant. Subcontractors can be different things but Svenska kraftnät is never party to the agreement.



Overall coordination responsibility:	<i>Overall Coordination responsibility</i> is a concept in the Work Environment Act that addresses how responsibility is handled when two or more employers simultaneously operate on a common site. The reason that this responsibility is regulated is that it is assumed that specific health and safety risks can arise when several companies are in the same workplace.
Coordination meeting:	A physical meeting with a written agenda and minutes to be recorded.
Consultation:	Verbal reconciliation between the BAS organisation and/or at the common working place
Temporary work site:	The Customer may define lines and line corridors as a temporary work site.
Turnkey contract:	A turnkey contract is characterised by the contractor himself executing or for his own account has the project executed. The Customer has usually provided some form of simple documentation, where the requirements to the intended function are given. The turnkey form is therefore sometimes known as <i>functional contract</i> . The standard contract that applies to turnkey projects is ABT ( <i>General provisions for turnkey projects relating to building, construction and installation works</i> ) with accompanying administrative provisions (AFD.xxx).
Subcontractor:	Company that is a contractor or consultant, and party to agreement with Svenska kraftnät's contracted Supplier.



## 2 Scope and responsibility

This technical guideline applies solely for the procurement of turnkey projects in accordance with the General rules when Svenska kraftnät has Client responsibility under the work environment legislation. The Client is responsible for appointing a Building work environment coordinator for planning and design, as well as for the execution of the work.

Requirements on the systematic control of the work environment, electrical safety, environmental and quality work required at all construction and maintenance work and consulting services in planning and design of projects for Svenska kraftnät, are contained in TR 13-01 and they apply in parallel with this TR.

The requirements apply to the activities performed by the Supplier under contract with Svenska kraftnät. The requirements also apply to all Subcontractors and Consultants working on the assignment. The Supplier, with whom Svenska kraftnät has signed an agreement, is responsible for ensuring that the requirements in this document are met.

Contractor, Planner/Consultant are referred to below as Supplier and Svenska kraftnät as Customer.

Rules for work environment in general are found in the Work Environment Act and associated provisions:

*AML (Arbetsmiljölagen)*

Work Environment Act  
Cf. [www.av.se](http://www.av.se)

*ABT (Allmänna bestämmelser för totalentreprenader avseende byggnads-, anläggnings- och installationsarbeten)*

General provisions for turnkey projects relating to building, construction and installation works

*AFS (Arbetsmiljöverkets författningssamling)*

Swedish Work Environment Authority  
Collection of provisions



## 3 Responsibilities and organisation

The Contract points out whom the Customer has appointed as Building Work Environment Coordinator under AML §3 sec. 6. The assignment as Building Work Environment Coordinator may not be transferred to any other party without the Customer's written consent. Before the assignment may commence, the appointee shall give account for the person(s) intended for use in the work environment task (BAS P and/or BAS U) along with written documentation evidencing that the person or persons hold the qualifications referred to in sections 3.1. and 3.2.

### 3.1 Building work environment coordinator for planning and design, BAS P

#### **Work environment plan and prior notification**

The BAS P will take over and further develop the work environment plan that the Customer has prepared in the planning stage. The work environment plan for the building and construction works shall include the elements mentioned in the template for work environment plan that is available on the Customer's website [www.svk.se](http://www.svk.se) under Stakeholder portal, templates to TR 13. A consultation shall take place in connection with the handover. The Customer shall call the consultation.

In cases where prior notification is required, the Customer is responsible for submitting it to the Swedish work environment authority.

#### **BAS P Coordinator must**

- > Have the skills, qualifications and experience in accordance with the suitability requirements set out in annex 1. Training papers must not be older than three years; certificates must be verified for the Customer.
- > As a minimum requirement implement the tasks set out in annex 2; in order to view the full tasks, please refer to the Work Environment Act and associated provisions.



### 3.2 Building work environment coordinator for the execution, BAS U

#### **Work environment plan and prior notification**

The BAS U should take over and further develop the working environment plan prepared by BAS P. The work environment plan for building and construction works shall include the elements mentioned in the template for work environment plan that is available on the client's website [www.svk.se](http://www.svk.se) under Stakeholder portal, templates to TR 13. A consultation shall take place in connection with the handover. BAS P shall initiate the consultation.

When necessary or by changed conditions the BAS U should update the notification provided by the Customer and ensure that it be posted in the workplace.

BAS U shall call Customer and Provider with any Sub-suppliers to a coordination meeting, to be carried out to a sufficient extent depending on the nature and intensity of the assignment.

#### **BAS U Coordinator must**

- > Have skills, qualifications and experience in accordance with the suitability requirements set out in annex 3. Training papers must not be older than three years; certificates must be verified for the Customer.
- > Be Swedish-speaking but also able to communicate in a predetermined language to everyone who is in the workplace.
- > As a minimum requirement implement the tasks set out in annex 4; to see the full tasks, please refer to the Work Environment Act and associated provisions.





## 4 Assignment management

On the basis of the established work environment plan and risk management from the planning stages, the Supplier shall perform the points under section 4.1 in the design stage. When risk management from the design phase is completed, the Supplier shall carry out the paragraphs under section 4.2.

### 4.1 Design

- > Investigate the potential risks of illness/accident for the parties who will be staying at the projected site during operation and management phase, by change and demolition. Risks in carrying out the work relating to the construction of both temporary and permanent structures should also be investigated. Risk management shall comply with the requirements of the TR 13-01.
- > If the Supplier intends to perform any activity in the area prior to the execution, which means "work with special risk" according to AFS Building and Construction work incl. amending provisions, these activities shall be reported with preventive measures to the BAS P coordinator before the activity may commence.
- > Work environment accounting to be provided on a regular basis under the heading "HMSK" at planning meetings. As a minimum, the following must be reported: risk management, measures implemented to minimize risks of illness/accidents at all stages.
- > Have a dialogue with the customer designated BAS P, provide the information required, and participate in any co-ordination meetings so that the BAS P coordinator can implement his work environment duties.

### 4.2 Execution

Prior to project start, the Supplier, including all subcontractors who will be active in the workplace, shall:

- > Analyse the risks that can occur with the chosen working methods, and describe how they are to be prevented. Risk management shall comply with the requirements of TR 13-01. If it is advocating a different method than provided by the work environment plan, it must be particularly analysed and communicated with BAS U coordinator before the execution.
- > Perform electrical safety planning of all activities when working in or near high voltage power lines, and communicate with BAS U coordinator before the execution. For specific requirements to electrical safety, cf. TR for that area.



- > In their scheduling pay particular attention to the risk of illness/accidents by time pressure and specify measures to minimize that risk. They should also have documented procedures to ensure that the organisation of work hours is such that the working environment and safety is not jeopardized.
- > Account the Work Environment Organization in writing. The description should clearly state for whom the Supplier is the employer and who are the Subcontractors with their own work management, and responsibilities and authority for work environment tasks.

During the execution of the contract the Supplier, including all subcontractors that are active in the workplace, shall:

- > Systematically provide information to the coordination meetings with regard to risks in the assignment as work progresses.
- > When risks need to be coordinated, the BAS U is responsible for coordination and to request any measures to be performed.
- > Implement measures and changes that are recommended by BAS U coordinator.
- > Account work environment tasks regularly under agenda point "HMSK" at project meetings. The following shall be recognised as a minimum; all accidents, serious incidents, root causes and measures implemented, emerging risks and measures planned. Actions carried out in connection with safety inspections and/or decisions of the safety committee should also be reported here.
- > Ensure good order in the workplace.
- > Have signs and other posted information in Swedish and translated into the languages spoken and understood by the workers.
- > Document that technical appliances, machinery and vehicles are checked by competent authority, tested and approved, and that the operator has sufficient expertise, and report to BAS U coordinator.
- > To ensure that their activities do not involve risk of illness or accidents for anyone in the assignment.

After completion of the assignment, the Supplier including all subcontractors that are active in the workplace shall:

- > Participate and provide information on any residual risks and any other relevant information to BAS U coordinator who passes this on to BAS P coordinator who will compile the final documentation for the work environment.



## 5 Protective equipment

### 5.1 Personal protective equipment (PPE)

Before personal protective equipment is chosen the supplier shall analyse and assess the risks in the work and the characteristics that the equipment must have in order to protect against these. In doing so, account is also taken of the risks which the equipment itself can cause. The assessment should be reviewed when any changes have occurred that are relevant to the assessment.

The supplier is responsible that the following personal protective equipment according to the current standard/norm is worn by all who visit the work area, unless it is clearly unnecessary after risk assessment (according to AFS 1999:3):

- > Safety helmet with chin strap \*
  - > High visibility vest or work clothes in reflective material
  - > Safety shoes with penetration protection and protective toecaps \*
- \*) For external visitors on brief site visits, the requirement on the chin strap and protective shoes may be waived if the person will be guided around by someone with good knowledge of the operation and the tour takes place in such a manner that they are not exposed to risk of injury

Additional personal protective equipment should be used in accordance with current risk assessment/safety instruction or directive from the BAS U on the relevant working location. Safety glasses should be worn where there is a risk of eye injury. Moreover, the PPE must be worn when needed, such as gloves, ear protection, protective equipment, etc.

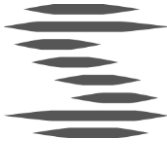
When working within substations/power lines/storage operation, existing safety rules and provisions must be followed.

### 5.2 Common protective equipment, first aid

The Supplier is responsible that the following common protective equipment is available at each workstation in the work area:

- > ABC fire extinguishers, 6 kg. in adequate supply
- > Fire blanket
- > Eye wash or rinse bottles
- > First aid board or first aid bag

The Supplier is responsible for ensuring that protective equipment and first aid materials are maintained, are available in sufficient quantity and stored so that its protective power and hygiene standards are maintained.



## 6 Control and follow-up

### 6.1 Alcohol, drugs and medicines

It is not acceptable that an employee is under the influence of alcohol or other intoxicants at work.

The Customer shall be given the opportunity to carry out alcohol and drug testing during the assignment period.

In the event that any employee of the Supplier or of his hired subcontractor is found under the influence of alcohol or any other drug during working hours, the person shall immediately and safely leave the workplace. It is the responsibility of the Supplier to ensure this and replace him with another person with equivalent expertise.

## 7 Time reporting

The Supplier shall report to the Customer on a monthly basis the number of hours worked on site, including officials. Supplier (incl. any subcontractors) shall also annually and on completion of the assignment report number of total hours of work performed on the site.



## **Annex 1 – Suitability requirements for BAS P coordinator**

Basic skills requirements:

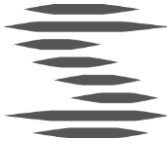
- > Good knowledge of the content of AML, the Work Environment Act
- > Good knowledge of the following AFSes:
  - Provisions on building and civil engineering work
  - Provisions on systematic work environment management

Competence requirements depending on the type of risks in the current project (minimum requirements):

- > Provisions on ergonomics
- > Workplace design
- > Provisions on ladders and trestles
- > Provisions on asbestos
- > Provisions on chemical hazards in the working environment
- > Provisions on the inspection of lifting devices and other technical devices
- > Provisions on the use of lifting devices and lifting accessories
- > Provisions on machinery and technical devices
- > Provisions of work equipment
- > Provisions about bolt-driving tools
- > Provisions about nail guns
- > Provisions on noise
- > The provisions relating to vibrations
- > Provisions on mast and post work
- > Provisions on Quartz
- > Education ESA 14 – Basic and Work for proficient
- > Current parts of the Electricity law SFS 1997:857, Power Provision SFS 2009:22 and the Electrical Safety Authority's provision ELSÄK-FS 2006:1 Professional Activity
- > Maintenance standard EN 50110-1 version 3

Experience requirements (supported by CV and reference checks upon request from the Customer):

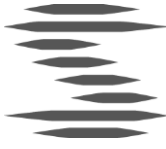
- > Experience of carrying out building and construction work



- > Experience of work with coordination, management, or control of construction projects
- > Experience of project planning
- > Knowledge of the organisation's rules and procedures concerning the work environment

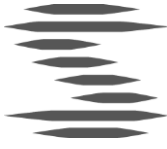
Certificates presented to demonstrate the competency requirements:

- > AML training, Work Environment Act, for example BAM-education
- > BAS education incl. an approved grade on written examination
- > Education relevant provisions
- > ESA Education incl. an approved grade on written examination

**Annex 2 – Minimum duties BAS P coordinator**

BAS P coordinator shall ensure coordination of efforts to prevent illness and accidents in the assignment and as a minimum perform the tasks below;

- > Participate in the planning and management of the design, as well as being involved in each design.
- > Coordinate all designs, so that OSH issues are taken into account for the execution and operational stages. This applies in particular for operations carried out at the same time or one after the other, or when the time required for such operations is calculated.
- > Coordinate efforts so that all participants take into account each other's plans.
- > Schedule the execution of the contract so that the risks of illness and accidents are avoided.
- > Establish or initiate establishing the work environment plan before the construction site is provisioned.
- > Ensure that adaptations and updates to the work environment plan and other documentation are carried out.
- > Continually report the status of the work environment in writing to Customer
- > Ensure that the final work environment documentation is established and completed in conjunction with the project's termination. The documentation shall be provided to the Customer.



### **Annex 3 – Suitability requirements for BAS U coordinator**

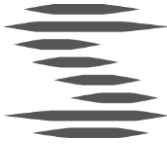
#### Basic skills requirements:

- > Good knowledge of the content of AML, Work Environment Act
- > Good knowledge of the following AFSes:
  - Provisions on building and construction work
  - Provisions on systematic work environment

#### Competence requirements depending on the type of risks in the current project (minimum requirements):

- > Provisions on ergonomics
- > Workplace design
- > Provisions on ladders and trestles
- > Provisions on asbestos
- > Provisions on chemical hazards in the working environment
- > Provisions on the inspection of lifting devices and other technical devices
- > Provisions on the use of lifting devices and lifting accessories
- > Provisions on machinery and technical devices
- > Provisions on work equipment
- > Provisions about bolt-driving tools
- > Provisions about nail guns
- > Provisions on noise
- > The provisions relating to vibrations
- > Provisions on the mast-and-poster work
- > Provisions on Quartz
- > Education ESA 14 – Basic and Work for proficient
- > Current parts of the Electricity law SFS 1997:857, power provision SFS 2009:22 and the Electrical Safety Authority's provisions ELSÄK-FS 2006:1 professional activity
- > Management standard EN 50110-1 version 3
- > EBR





Experience requirements (supported by CV and reference checks upon request of the Subscriber):

- > Experience of carrying out construction work
- > Experience of work with the coordination, management, or control of construction projects
- > Familiarity with the Organisation's rules and procedures around the work environment

Certificates presented to demonstrate the competency requirements:

- > AML training, Work Environment Act, for example BAM-education
- > BASIC education incl. an approved grade on written examination
- > Education relevant provisions
- > ESA education incl. an approved grade on written examination

**Annex 4 – Minimum duties BAS U coordinator**

Coordinator BAS U should make sure to coordinate efforts to prevent illness and accidents at work place and perform the tasks as a minimum requirement as below;

- > Ensure that adaptations and updates of the work environment plan and its annexes are conducted when necessary and by changed conditions,
- > Ensure that the work environment plan, safety provisions, risks, work preparation and instructions as well as other relevant information, are available in a language that is spoken and understood by employees and that they are enforced,
- > Coordinate adaptation of relevant health and safety rules when technical or organisational questions concerning the planning of operations to be performed simultaneously or one after the other are determined, and when the time required for such operations is calculated,
- > Demand that staff trained and with expertise in fire fighting, first aid and CPR is available at all workstations in the assignment,
- > Coordinate implementation of relevant health and safety provisions to ensure that those who operate on the site apply these rules in a systematic manner, and comply with applicable work environment plan,
- > Coordinate measures to check that the construction work is carried out correctly with regard to the working environment,
- > Take the necessary measures to ensure that only authorised persons have access to the work place,
- > Organising the data that according to § 7 g apply for those that operate on a common working place,
- > Work will be scheduled as needed to prevent risks for illness and accidents due to different activities going on at the site,
- > Demand general safeguards to be implemented and maintained, and to issue general rules in the workplace,
- > Responsibility for the special protective equipment that may be needed for a particular or certain jobs, and
- > Require staff rooms and sanitary facilities to be set up at the work site in the necessary extent.
- > Make sure that the technical equipment, machines and vehicles are fully maintained by the competent authority, tested and approved, and that the operator has sufficient expertise
- > Continually report the status of the work environment in writing to Customer