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TECHNICAL GUIDELINE

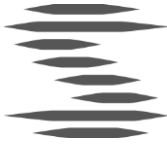
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Work environment Requirements – Project Consultant Client's Responsibilities

This technical guideline contains the work-environmental requirements for project consultants who perform consulting assignments with Svenska kraftnät's Client responsibility under the work environment legislation. The guideline applies to consultants within all categories of technical consulting services.

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.



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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">> Event where accident or incident has occurred or could occur> Observation of an error, a risk or a deficiency that can lead to an accident or emergency (risk-sighting)> Departure from working methods, practices, routine, legal requirements, etc.> Deficiency in product, service and delivery
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 civil engineering work	Work or activities which the Supplier carries out in the field under contract with Svenska kraftnät, cf. AFS 1999:3.
Permanent work site	Permanent work sites are substation, tunnel, pylon and technical shed. The company that manages the permanent operations site has mandatory overall coordination responsibility.
Contractor	Companies that deliver more or less complete construction services including material, for which AB and ABT apply.
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.
Overall coordination responsible	Whoever controls a permanent work site is overall coordination responsible for work environmental issues of all who work there
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.
Subcontractor	Company that is a contractor or consultant, and party to agreement with Svenska kraftnät's contracted Supplier.
Performance contract	A performance contract is characterised by the Customer having completed the design (preparing building and construction documents such as drawings and descriptions), then procures a Contractor who undertakes the work according to these documents. Usually the Contractor either carries out the work at a fixed price or on so-called current account. The Customer is then responsible for the design, and the Contractor solely for the performance being in line with Customer's provided documentation. The standard contract that applies to performance projects is ABT (<i>General provisions for building, construction and installation works</i>) with accompanying administrative provisions (AFC.xxx).
Project consultant	Implements an independent consulting assignment such as e.g. study and design within any category of technical consulting services. The Project consultant performs the works under own management.
Subcontractor	Company that is a contractor or consultant, and party to agreement with Svenska kraftnät's contracted Supplier.
Client's delegee	The Client can use the services of a Client's delegee who takes responsibility according to paragraph 6 of the Work Environment legislation if the following criteria are met: <ol style="list-style-type: none">1. the Client's delegee has been commissioned to independently be responsible for planning and design and/or performance and2. it has been agreed in writing that the duties referred to in paragraph 6 and in the regulations shall rest with the Client's delegee in the current assignment A Client's delegee may not be hired under separate contracting.



2 Scope and responsibility

This technical guideline specifies the work environment requirements for the procurement of project consultants for all categories within technical consulting services. TR Project consultant applies solely when Svenska kraftnät is the Client and has not designated any independent Client's Delegee. Project consultancy means that an independent consulting assignment is carried out, such as studies and design consultancy services within the framework of technical consulting services. The Project consultant performs the work under own management.

Requirements for systematic control of the work environment, electrical safety, environmental and quality work required at all building and civil engineering, and maintenance works, and consulting services in planning and assignments for Svenska kraftnät are contained in TR 13-01, which applies in parallel with this technical guideline.

The requirements include the activities that the Project consultant carries out under contract with Svenska kraftnät. The requirements also apply to all Subcontractors and sub-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 followed.

Contractor, Planner and 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 in the Swedish Legal Framework:

AML (Arbetsmiljölagen)

Work Environment Act
Cf. 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 Responsibility and management at Building and Civil Engineering Works

This section applies solely when Svenska kraftnät has designated the Project consultants BAS P and/or BAS U.

3.1 Information on Building Work Environment Coordinator

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 3.1.1 and 3.1.2.

The Building Work Environment Coordinator appointed for the assignment shall call the Project consultant with the Customer and any Suppliers to a coordination meeting, which will be conducted to a sufficient extent depending on the nature and intensity.

3.1.1 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, and the plan shall include the elements mentioned in the template provided by the Customer for this purpose. The template is available on the Customer's website 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 providing a first draft to be attached to the work environment plan. 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 1; in order to view the full set of tasks, please refer to the Work Environment Act and associated provisions.

3.1.2 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 work environment plan prepared by BAS P. The plan shall include the elements mentioned in the template provided by the Customer for this purpose. The template is available on the Customer's website 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 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 set of tasks, please refer to the Work Environment Act and associated provisions.

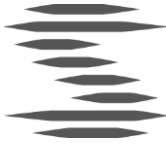
4 Project management

4.1 Consultant's mission

The basis for the Project consultant's work is the contract including an order for the assignment. The assignment description shows the requirements for skills, education and experience which the Customer sets on the Project consultant.

4.2 The Project consultant's work environment planning

Based on the Customer's data the Project consultant (applies to *all* project consultants for all categories within technical consulting services), shall



- > if he/she intends to perform any activity within Svenska kraftnät's plants, account for these activities and their risks, together with preventive measures, to the Building work environment coordinator (BAS U)/coordinator responsible for the operations site (permanent/temporary) before the activity starts.

Based on the Customer's data the Project consultant (applies *only to* project consultants within the categories relating to planning and design in connection with a Building and civil engineering work to be performed), shall

- > investigate the potential risks of illness/accident for the stakeholders who will be staying in the facility during the operation and maintenance phase. The Consultant mission is primarily to propose solutions to eliminate these risks and secondly propose cost-effective preventative measures if risks remain
- > investigate possible risks in carrying out the work regarding the construction of both temporary and permanent structures. The Project consultant's investigation will be used as the basis for continuing work environment planning during the work, wherefore the motive for selected solutions and structures, as well as preventive measures should appear from the investigation. Unless otherwise specified elsewhere in the contract documents the investigation needs only form the basis for a possible method.

The Project consultant shall carry out the above tasks in cooperation with, and report to, the designated BAS P who has all dialogues with the Client.



5 Protective equipment

Before personal protective equipment is chosen the Project consultant 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 Project consultant is responsible that the following personal protective equipment is available and worn by all consultants in the project, 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 exempted 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 goggles 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.



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.

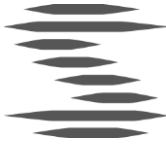
In the event that any employee of the Project consultant or of his hired subcontractor is found under the influence of alcohol or any other drug during working hours, the person shall immediately and safely leave the workplace. It is the responsibility of the Project consultant to ensure this and replace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

7 Time reporting

The Project consultant shall report time according to the Customer's instructions in accordance with the current contract for consultants.

8 Internal instructions; e.g. visits within the Svenska kraftnät's facilities

The Customer is responsible for informing those concerned of relevant internal instructions. The Project consultant is responsible for compliance with relevant internal instructions.



Annex 1 – Suitability requirements for BAS P coordinator

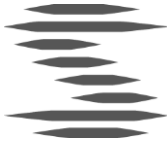
Basic skills requirements:

- > 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

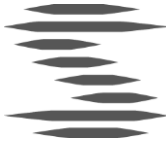
Experience requirements (supported by CV and reference checks upon request from the Customer):



- > Experience of carrying out Building and civil engineering 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

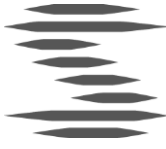
Certificates presented to demonstrate the competency requirements:

- > 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.



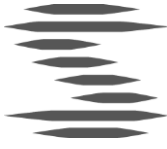
Annex 3 – Suitability requirements for BAS U coordinator

Basic skills requirements:

- > Good knowledge of the content of AML, Work Environment Act
- > Good knowledge of the following AFSes:
 - Provisions on Building and 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 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:

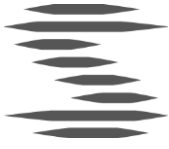
- > AML training, Work Environment Act, for example BAM-education
- > BASIC education incl. an approved grade on written examination
- > Education relevant provisions
- > ESA education incl. an approved grade on written examination



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



- > Report the status of the work environment in writing to Customer on a continuing basis