



ENERGINET



WORKING  
SAFELY AT NIGHT



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## INTRODUCTION: WORKING SAFELY AT NIGHT

Night work should be avoided as far as possible for health and safety reasons. However, there may be good reasons for planning and performing night work.

This leaflet includes information on what to be aware of when planning and performing night work. You can also find information on unplanned night work as

well as the consequences of night work. This leaflet is aimed at project managers, consultants or project supervisors.

This leaflet was written by Energinet. If you have any questions about the contents, please get in touch with your contact at Energinet.



THE CLIENT, PROJECT SUPERVISORS,  
CONSULTANTS AND CONTRACTORS ARE  
ALL RESPONSIBLE FOR **SAFETY AND THE  
WORKING ENVIRONMENT**



# ROLES AND RESPONSIBILITIES WHEN PLANNING AND EXECUTING NIGHT WORK.

## **Energinet's responsibilities as client**

Responsibility lies with the client, even if the work is carried out by another party. The client is responsible for making sure that appropriate preventive measures are taken in the area of health and safety.

The client is responsible for the following:

- Coordinating the work, when more than 2 parties are involved in work on site
- Ensuring that particular risks on the construction site are identified, investigated, assessed and appropriately addressed, before the work commences
- Ensuring that traffic on the construction site has safe passage at all times, under fully acceptable conditions, including sufficient lighting on site traffic routes

## **Project supervisors' and consultants' responsibilities**

The legislation applies to both internal and external engineering (design) and consultancy. According to the legislation, project supervisors and consultants are responsible for:

- Ensuring, in the engineering (design) phase, that construction and future maintenance work is compliant with working environment legislation
- Ensuring that any conditions affecting health and safety are identified in the project material

- Ensuring that appropriate principles of prevention in the area of health and safety are taken into account while assessing the time period allocated to various works or phases of work

## **Project manager's responsibilities**

It is the project manager's responsibility to assess, early in the engineering (design) and construction phase, whether aspects of the work need to be carried out as night work.

If it is determined that work cannot be carried out without some element of night work, the tender documents must describe how the project will be carried out without risk to personnel or equipment. Risks in connection with night work must therefore also be addressed in the contractor's risk assessment.

*Extracted from Executive Order No. 110 on Duties of Project Supervisors and Consultants and Executive Order No. 117 on Duties of the Client.*

Read more about statutory requirements on page 9.

# PLANNED NIGHT WORK ON CONSTRUCTION PROJECTS

Planned night work is work that is already identified in the engineering (design) and construction phase as night work.

In certain cases, night work may be necessary because circumstances do not allow the work to be done during the day.

## Which tasks can involve planned night work?

- Crossing railways, motorways and overhead power lines
- Special transport of equipment
- Repair of subsea cables or oil-filled cables

## If night work cannot be avoided, the Danish Working Environment Authority recommends the following:

- The work should be organised with as few night shifts as possible and a maximum of three night shifts in a row.
- Shift changes should follow the clock – i.e. day shift, evening shift, night shift and so on. A morning shift should not start before 6.00 a.m.

Employees who have more than 300 annual night-time working hours must be offered free health checks by their employer before they start any role involving night work. They must then be offered health checks again at least every three years.



# HOW DO I PLAN ESSENTIAL NIGHT WORK?

## Start in the engineering (design) phase

The best way to plan night work is by starting in the engineering (design) phase. At that stage, various alternatives for implementing the project can be considered, with the advantages and disadvantages of alternatives as well as possible complications during the construction phase. It is also in the engineering (design) phase that applications are made for planned outages (outage times).

In some cases, it is not possible to predict night work in the engineering (design) phase, so it is not planned until the construction phase.

## Consider the risk of night work during planning

Carry out regular risk assessments and assess how the implications of night work will impact the project risks. Assess where possible faults and risks might occur.

- Incorporate potential breakdown scenarios
- Create action cards for the individual possible breakdowns or faults
- Plan how to remedy the potential fault
- Check that risks and action cards are still relevant

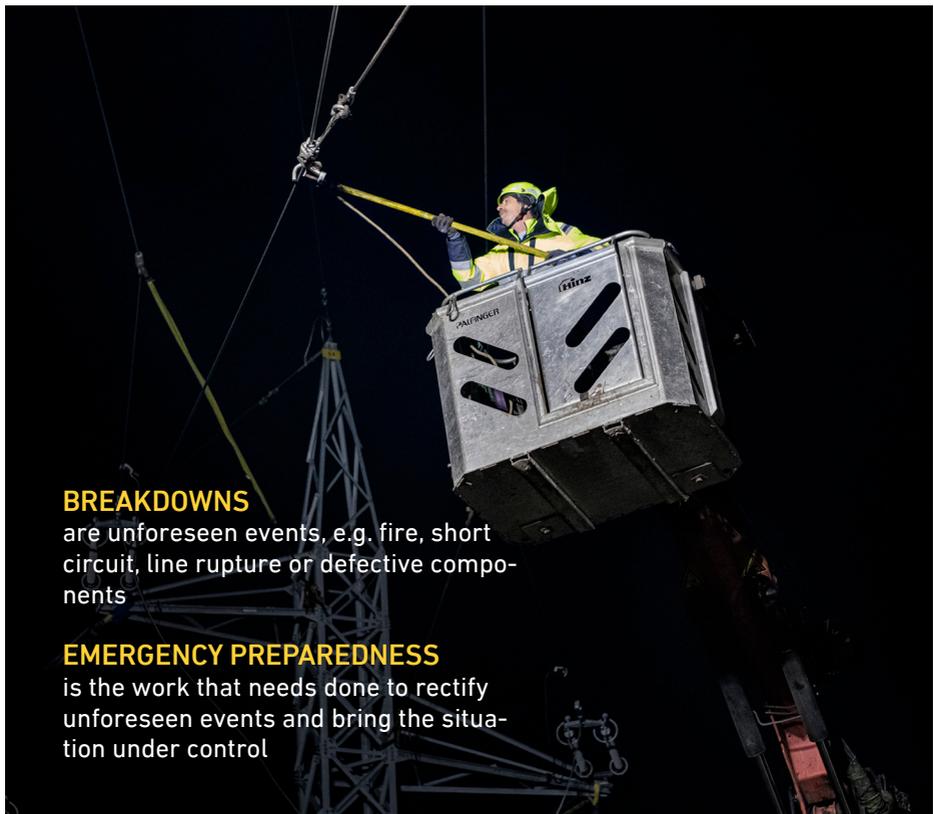


# UNPLANNED NIGHT WORK AT FACILITIES IN OPERATION

## Breakdown and emergency preparedness

When a breakdown occurs on high voltage systems, it must be remedied as quickly as possible to reinstate normal

operations and minimise the disruption. If the fault occurs at night, it is thus necessary to perform night work to correct the fault.



### **BREAKDOWNS**

are unforeseen events, e.g. fire, short circuit, line rupture or defective components

### **EMERGENCY PREPAREDNESS**

is the work that needs done to rectify unforeseen events and bring the situation under control

## LEGISLATION ON NIGHT WORK

When night work is to be performed, there are extensive legal requirements for identifying and eliminating risks. At the same time, project managers, subproject managers, health and safety coordinators and inspectors are required to be available outside normal working hours.

Here we outline the responsibilities, in line with applicable legislation, which apply to any building and civil engineering project.

The leaflet is based on the legislation outlined below:

- Danish Working Environment Authority's Executive Order No. 117 of

5 February 2013, Executive Order on Duties of the Client

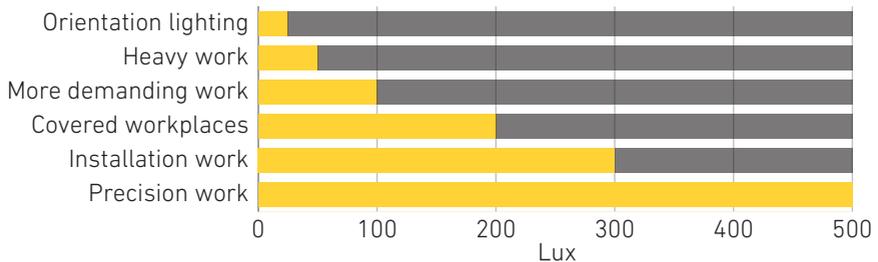
- Danish Working Environment Authority's Executive Order No. 110 of 5 February 2013, Executive Order on Duties of Project Supervisors and Consultants according to the Danish Working Environment Act

### Shift work

Shift work is only to be used where there are very good reasons for it. Shift changes can cause basic knowledge of the project to be lost. Take care to ensure a good transition between the teams.

Ultimately, the project material should outline how transitions are made between teams, including potential risks.

**Requirements for lighting** in outdoor workplaces in relation to DS 12464 (Danish Standard). When heavy work lights are used in the dark, you must ensure there are no shadow areas or glare on e.g. access roads and neighbouring properties.



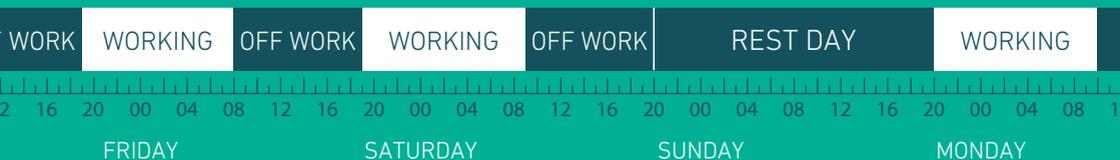
# 11-HOUR RULE



Working hours must be organised in such a way that employees are given a rest period of at least 11 consecutive hours in each 24-hour period.

## REST DAY

After six working days, a 24-hour rest period ("rest day") must be given. This must take place as an extension of a rest period (11-hour rule). As far as is possible, rest days should be on a Sunday.



# CONSEQUENCES OF AND PREVIOUS EXPERIENCES FROM NIGHT WORK

Over longer periods of time, night work may have an impact on an individual's daily life, social life, family and health. It is therefore the client's and employer's responsibility to plan so that periods of night work are kept to an absolute minimum, if night work cannot be completely avoided.

If you have been awake for 17–19 hours in a row, your responsiveness is equivalent to someone with a blood alcohol level of 0.5.\*

When working at night, it is possible to get into a rhythm where

day becomes displaced and night work is just "work".

Some signs of fatigue might be noticed. This could manifest itself as restlessness, problems concentrating, etc.

Tasks which are normally simple and considered routine may become more demanding if they are carried out at night.

\* (<https://nfa.dk/da/nyt/nyheder/2006/arbejdstider-soevn-og-sikkerhed>)



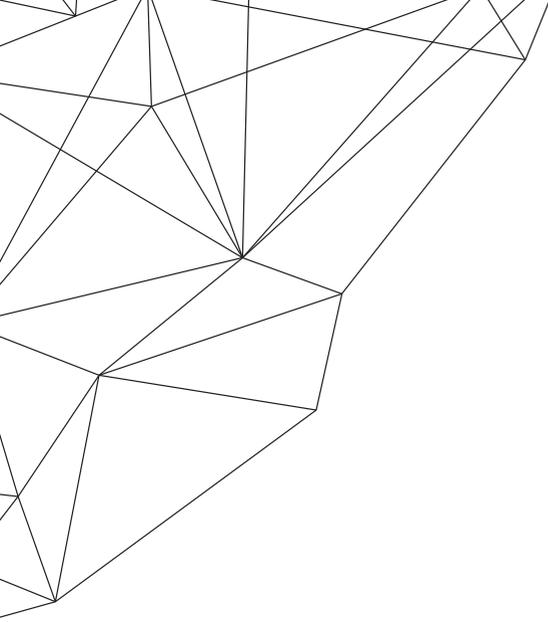
## WHAT ELSE SHOULD I BE AWARE OF?

- Long working days may result in increased complaints from neighbours
- Work outside normal working hours and during weekends requires special permission in the environmental approval
- There are restrictions on noise levels
- Permission is required to use strong lighting for work outside normal working hours
- It must be made clear whether all or part of the work is to be carried out at night

Note that weather conditions may mean outages at the site and/or cause delays as it can be necessary to stop work

- Weather conditions can also be difficult to assess at night as the movements of flags, trees, etc. cannot be seen
- Plan well in advance and invite involved parties to be part of the planning process
- Plan several breaks into the work. Efficiency levels may be different to that seen during the day time





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Version 1  
February 2021