
Document information

Title: Safety document for OL3 annual outages in 2024
Allocation: OL3
Allocation extension:
Author/date: Suomijärvi Tytti / 01.01.2024
Inspected by/date:
Approved by/date:
Valid until:
Publishing location:
Partner:
Expired identifier:
Archive: -
Appendices:
Distribution:

Safety document for OL3 annual outages in 2024

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1 GENERAL

1.1 The purpose of the safety document

This safety document complex comprises a safety document pursuant to Government Decree 205/2009, Sections 7 and 8, which has been prepared to the applicable extent for the annual outage of the Olkiluoto 3 (OL3) plant unit, and the project supervisor's safety plan pursuant to Government Decree 205/2009.

The purpose of the document is to provide the necessary safety information in order to allow the safe completion of work without impacting employee safety. The safety document acts as the initial data provided by the client and project supervisor and as the main plan for the contractors' safety plans. The document will be supplemented over the course of the outage if needed.

TVO, as the project supervisor of the construction site for the annual outages at OL3, shall submit a prior notice to the regional state authority in accordance with Government Decree 205/2009.

Safety must be the starting point of all operations. All work must be performed in a way which ensures that no accidents occur and everyone gets to go home healthy!

1.2 Contact information for annual outages

Client's point of contact for annual outages: Tytti Suomijärvi.

Appointed qualified person in charge for the work site: Marjo Mustonen.

Point of contact for the project supervisor: Anna Lehtinen.

The appointed annual outage safety coordinator pursuant to Government Decree 205/2009 is Tytti Suomijärvi.

The client and project supervisor is Teollisuuden Voima Oyj (TVO).

The laws and regulations applicable to occupational safety shall be followed during annual outages. Furthermore, the TVO Group's procedures, recommendations and contract-specific safety plans shall apply.

The organisation during the annual outage and contact information is available at TVO's intranet and in the information brochure that will be distributed.

1.3 General information about the site

The Olkiluoto 3 (OL3) plant unit will undergo a service outage with an estimated duration of 37 days. The outage is scheduled from 2 March to 8 April 2024.

The object of the construction site is the annual outage of a nuclear facility, and the area within the OL3 plant unit's plant fence is included in the construction site. A nuclear facility is a safety-critical location, and any work performed in its area is subject to various legal provisions.

1.4 Goals and actions for safety management

The goal of the TVO Group's occupational health and safety activities is to be proactive in promoting health and industrial safety. The Group maintains a good atmosphere and working conditions and ensures equal treatment. No form of harassment or bullying in the workplace is allowed in our operations. The goal of every employee in terms of industrial safety is to look after the safety of themselves and others. When making decisions about industrial safety, the Group is committed to hearing the employees and any employee representatives, as well as to ensuring their inclusion.

Proactivity as referred to in company policies refers to the company's commitment to identifying and primarily eliminating any significant hazards involved in the work and to reducing the remaining health and safety risks as much as possible already before the work is started.

Opportunities for improving the working environment and industrial safety are provided, among others, by internal and external assessments, safety observations and self-assessments. All improvement opportunities are recorded and processed in the Kelpo system.

Observations can be entered directly in Kelpo system as well as by filling in paper observation cards.

The TVO Group's target is that employees have no accidents, injuries or environmental accidents. Suppliers and its suppliers as well as subcontractors shall commit to adhering to these principles and consider them in the planning of their activities.

The Supplier's and its subcontractors' activities are monitored both during and after the work. Work performance and quality of the work is assessed, and the assessment will affect future agreements. If the activities do not conform to the requirements, corrective actions must be agreed on before the next order is placed.

If there are repeatedly shortcoming/ safety violations in the operation of the Supplier or its subcontractors that degrade safety of the employees or the plant, the Client is entitled to audit the Suppliers or its subcontractor safety activities or the management of the Supplier or its subcontractor may be invited to a discussion on safety. The decision on these actions is made by the Client management in cooperation with the Safety and Security organization, depending on the nature of the violation.

The Supplier shall only use employees and subcontractors with the competence, skills and experience required by law, the current tasks and the Client.

1.5 Collaboration and meetings

Industrial safety aspects are discussed daily in annual outage meetings. In addition, there are weekly industrial safety meetings between the client and the industrial safety contact persons appointed by each supplier.

1.6 Employee qualifications and work requiring permits

All persons participating in an annual outage must have a valid access card. Everyone must carry their physical access card with them at all times, and it acts as a photo identification. Receiving an access card requires that the person undergoes a security clearance process and has a valid completion record of the induction training, which includes acquiring an occupational safety card, and a tax number. The induction training can be refreshed as an online training. Furthermore, people participating in annual outages must complete the annual outage training organised by the client as an online training. The training content emphasises safety, in particular. For newcomers a practical mock up training organized by TVO is advised.

The contractor shall ensure that the conventional risks related to maintenance and construction work are considered in the planning and implementation of the work. The contractor shall ensure that all of its own employees as well as subcontractor personnel follow the laws and regulations and have received induction training on the safety instructions and work risk assessments before arriving at the work site.

The contractor shall ensure that the persons participating in an annual outage have the appropriate permits and qualifications as well as practical experience in welding, electrical and hot work and other similar high-risk work. For example:

- Crane operators must be trained for the crane's access group in question.
- Employees must have permission from the employer for the use of personnel lifts or forklift trucks concerning all the equipment they use at the work site.
- The use of personal fall arresters requires that the person has completed training on fall arresters.
- When working in confined space and as a confined space worker, it is mandatory to have a confined space training.

2 WORK DURING ANNUAL OUTAGE THAT POSES A HAZARD AND HAZARDS CAUSED BY THE CONDITIONS AT THE WORKSITE

2.1 Typical hazards during an annual outage

During annual outages, the most significant industrial safety risks are as follows:

- Working at heights or near openings
- Lifting of personnel
- Lifting and hauling
- Working inside confined spaces
- Electrical safety

Furthermore, other demanding work requiring special care or a permit includes:

- Work involving radiation
- Hot work and other work that requires fire protection permits
- Work involving scaffolding
- Dusty work, incl. quartz dust
- Work involving assembly or dismantling of heavy prefabricated elements.
- Dismantlement of structures, structural parts or materials.
- Working in hot and humid conditions

2.2 Hazard identification and risk assessment

2.2.1 Risk assessments

A hazard identification and risk assessment must be completed for all work in accordance with the Finnish Occupational Safety and Health Act (738/2002). In risk assessments, particular attention must be paid to the special hazards mentioned in the previous section 2.1, and the other hazards and detrimental factors due to the work must also be identified. The hazards and detrimental factors must be eliminated appropriately. If they cannot be eliminated, their significance for the health and safety of others working at the worksite or affected by the work must be assessed.

The contractors shall either submit a risk assessment document to the client or prepare such a document in collaboration with the client. Risk assessments shall include the identification of personal and environmental hazards as well as an assessment of the size and severity of the risk. Furthermore, the risk assessment shall describe the actions for managing risks and establish how it is ensured that the risks are at an acceptable level.

Hazards must be eliminated, where possible, and if a hazard cannot be completely eliminated, it must be minimised to an acceptable level. The people performing a task must know the risks involved.

| Unclear matters should be clarified with the client, i.e. the TVO Group.

2.2.2 Hazard identification on site

In addition to task-specific risk assessments, the TVO Group utilises the “Hazard identification on site” booklet. The form in the booklet includes the most common hazard areas that need to be checked before starting the work in order to ensure the safe completion of the work. The form is printed out along with the work documents, but the form is also available in booklet form. Hazard identification on site alone is not enough to satisfy the risk assessment requirement according to the Occupational Safety Act.

Before starting the work at the work area, the working group must go through the hazard identification on site and verify that there are no hazards or that the hazards are under control such that they do not pose any risk of accident. If a hazardous risk is identified at the work area, corrective measures in order to eliminate or reduce the risk must be taken before starting the work. In case the work stage, working group or conditions at the work area change, the form “Hazard identification on site” must be filled in again.

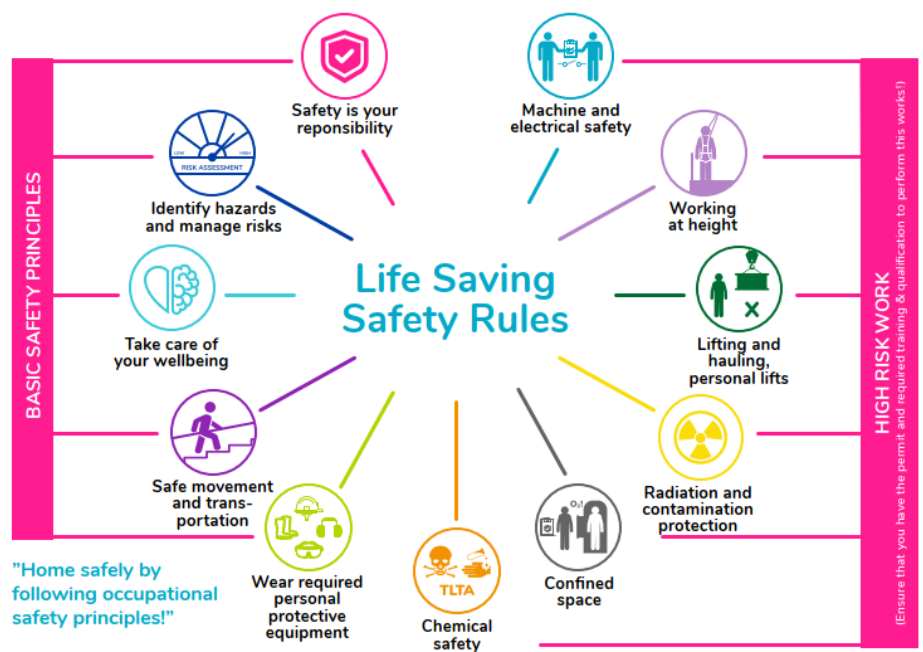
The supervisor shall supervise the performance of the hazard identification on site. The completed hazard identification forms shall be submitted to the supervisor. The supervisor or TVO’s contact person shall escalate the identified areas for improvement into the Kelpo observation system. Each item must be entered as a separate observation. During an annual outage, the supervisor shall return the completed and inspected forms to the industrial safety organisation.

3 ANNUAL OUTAGE PERFORMANCE REQUIREMENTS

This section specifies the performance requirements for annual outages and describes the work that involves special hazards to health and safety, which must be carried out according to the client’s procedures.

3.1 Life saving safety rules

The rules are created for all, to ensure all go home safe and sound. Everybody is obliged to follow these rules.



Life Saving Safety Rules

BASIC SAFETY PRINCIPLES

- Safety is your responsibility**
 - Ensure that both yourself and others are working safely and have a safe work environment
 - Observe and intervene in all unsafe acts
- Identify hazards and manage risks**
 - Make a documented risk assessment and fill in the Hazard Identification on site-form before starting the work
 - Follow permit to work conditions and instructions, ensure you have required qualifications and training to perform the high-risk activities
- Take care of your wellbeing**
 - Give attention to the wellbeing of yourself and the people around you.
 - Treat others respectfully and fairly
- Safe movement and transportation**
 - Observe hazards around you and follow the designated walkways
 - Use the handrails always when available
- Wear required personal protective equipment**
 - Use the basic PPE and the equipment appointed for the work tasks.
 - Take also the other precautionary measures to ensure safe performance of the work

HIGH RISK WORK

- Machine and electrical safety**
 - Verify isolation and that the system is safe before starting to work
 - Use equipment that is fit to its intended purpose and follow the safety manuals.
 - Only professionals can perform electrical works
- Working at height**
 - Protect yourself, tools and work materials against a fall when working at heights.
 - Establish and obey barriers and exclusion zones. Remember the risk of loose blocks in tunnels.
- Lifting, hauling and personnel lifting**
 - Plan lifting operations. Use only suitable and inspected lifting equipment.
 - Restrict access to lifting area and never walk under a suspended load.
- Radiation and contamination**
 - Remember ASE (Time, Shielding, Distance)
 - Obey the shoe barriers and follow the instructions
- Confined Space**
 - Obtain permit and authorisation before entering a confined space
 - Ensure all safety measures have been taken before entry
- Chemical safety**
 - Identify the dangerous substances, know the chemical hazards and follow the MSDS (Material safety data sheet)

3.2 Safety violation procedures

At Olkiluoto, several instructions governing the actions apply to each person.

When activities are contrary to instructions, regulations or expectations are detected, they must be addressed and, if necessary, the activity must be stopped. Work performance that is particularly excellent should also be taken into account. Guiding procedures targeting individuals in the TVO Group are, for example,

- guidance, advice / reward
 - security breach report
 - note
 - Warning
 - termination of employment in accordance with the Employment Contracts Act (TVO Group employees)
- or
- temporary or final removal of access rights (employees of contractors)

3.3 Site inspections and supervision

All employers have the obligation to supervise that the work methods, machines, equipment, scaffolding and working conditions are safe and, if necessary, to intervene in dangerous activities and conditions.

The TVO Group performs the maintenance inspections according to Government Decree 205/2009 and carries out periodic supervision of safety at the site.

3.4 Harassment and inappropriate treatment

No one should face harassment or inappropriate treatment at work. Everyone of us deserves to feel safe at work and we all can contribute to the atmosphere at the workplace through our own actions.

TVO has a zero tolerance policy to harassment and inappropriate behaviour. If you experience harassment or inappropriate treatment, ask the person to stop it. Report all cases of harassment or inappropriate behaviour to your supervisor who will reach out to TVO's contact person.

All reported

suspicious of misconduct are investigated.

3.5 Work permits

The TVO Group uses a work permit practice that is managed with the work management system (TTJ). Through the system it is managed the drafting and checking of safety measures for planned works, the implementation and restoration of the process separations and the monitoring of the progress of the works through work permits.

3.6 Fall protection

During an annual outage, all shafts and openings where people or items may fall must be protected using covers or railings. Personal fall arresters must always be worn if falling cannot be prevented by technical means and working near an opening is required. Openings must be marked according to regulations, and it must be ensured that the markings remain in place. The party who uncovers an opening is responsible for providing the appropriate fall protection. Persons using personal fall arresters (personal fall protection) provided by the client must have completed the client-organised training or client-approved training on using the fall arresters. If a contractor's representative uses personal fall arresters provided by the contractor, their inspection record must be available and the person must have received guidance on their use, verifiable in writing for example by a valid fall protection training.

Working on roofs, it is mandatory to wear personal fall protection always, when there is no railing or the railing is under 100 cm.

Working on ladders involves a high accident risk; special attention must be paid to the safe use of ladders. Step ladders may be used as a work platform instead of scaffolding only for brief tasks or only if it would be unreasonable to require the use of scaffolding for some other reason. A leaning ladder must not be used as a work platform. A leaning ladder may

be used for brief one-off tasks, such as the attachment and removal of lifting accessories. However, even when using a leaning ladder for short one-off tasks, it is important to ensure that the ladder cannot slip or fall.

It is necessary to plan fall protection for working near pools. The protection must be implemented with guard rails and by using either personal fall arresters or inflatable life jackets according to the work plan.

3.7 Lifting, hauling and lifting of personnel

Special care must be taken and the applicable regulations must be observed during lifting and hauling. All lifting operations must be carefully planned and executed according to the General lifting procedure. If necessary, a special lift plan must be prepared for the lifting operation. Lifting operations must be performed according to procedure 110220 Lifting and hauling practices at Olkiluoto. The procedure covers in detail the instances, when a special lift plan is needed and the structure of the lift plan.

If a lifting operation cannot be performed according to the General lifting procedure or the lifting operation has not been specified in the maintenance guidelines or fuel handling manuals, a special lift plan must be prepared for the operation.

A special lift plan must be prepared when:

- The lifting operation poses an exceptionally great hazard or is otherwise demanding in nature, e.g. lifting or pulling at an angle or turning the object.
- Lifting people with a crane or forklift truck.
- The lifting operation is performed with two or more cranes.
- A load is transported with another lifting or transport machine while the load is still attached to the crane's load-handling devices.
- The crane operator does not have an adequate connection to the signaller.

The persons participating in a lifting operation must have completed appropriate lifting training.

Before starting a lifting operation, it must be verified that the inspections of the lifting equipment and lifting accessories are valid. The inspection markings must match the annually changing colour. The operability of the lifting accessories must be verified visually. Defective equipment must not be used.

The lifting area must be marked off, and it must be ensured that no persons enter the area under the load during the lifting operation. When marking off the area, all access routes to the work area must be considered.

Lifting of personnel may only be performed by a person who has received an appropriate written permit from the employer. Personal fall arresters must always be worn in the lifting cage.

Lifting and transfer operations are described in more detail in “General lifting procedure, 112596” and “Procedure for managing lifting operations, 113074”.

3.8 Working inside confined spaces and diving work

Work inside tanks, valve and pump housings, steam shafts, condensers, reheaters, reactor pools and other such locations is considered work inside confined spaces. Work inside confined spaces includes work involving narrow and confined spaces that a person can enter partially or fully where there are limited opportunities to leave the space and natural availability of sufficient air is not sure.

A permit is required for working inside confined spaces. Everyone who works in confined spaces must complete the TVO Group’s training on working in confined spaces. A confined space permit is part of the work planning carried out in the work management system. The confined space permit specifies in more detail the safety measures and protective equipment related to the task. Only a person with the appropriate access rights can print out a confined space permit from the work management system. In connection with taking out a confined space permit, the safety measures according to the permit shall be verified and air quality measurements shall be taken at the work site before starting the work.

A person working in a confined space must always have a trained standby person (hole watcher). The hole watcher ensures the safety of the persons working inside the confined space, acts as a link between the people inside and outside the confined space and calls for help, if necessary.

The procedures for working in confined spaces are described in more detail in procedure “Working inside confined spaces, 120652”.

Any diving work must be performed according to Government Decree 1088/2011 on the qualification and safety plan for a diver performing construction work.

3.9 Electrical safety and electrical installations, lighting

Electro-technical safety regulations follow the obligations pursuant to laws and decrees.

Electrical work may only be performed by electrical specialists.

The electrical equipment used must be approved, operable and compliant with the safety requirements. Electrical equipment must undergo appropriate commissioning inspections and periodic inspections. The safety of electrical equipment and tools shall be inspected at the TVO Group's logistics terminal before they are taken to the power plant area. Contractors are responsible for submitting their own equipment to be inspected.

The cables and wires used must be appropriate for the purpose and in good condition. Running cables and wires during work must be carried out such that the cables and wires do not pose a tripping hazard and are not subjected to mechanical damage. If necessary, cable conduits or hooks must be used or the cables must be taped to the floor with a tape that has been approved to use in the plant.

All electrical connections must be made by an electrical contractor with the appropriate qualifications. Electrical spaces are locked and require a key, which is subject to a permit. Live equipment must be equipped with warning signs.

The absence of voltage must be verified by measurements. Special attention must be paid to electrical isolations, which must be verified by measurements.

Before any dismantlement, it must be verified that the installations at the site are de-energised.

The lighting of the work site must be planned. If general lighting is not sufficient, site lighting should be added to the work site and, if necessary, personal lighting should be used.

3.10 Tools

When working with scaffolding, a scaffolding card attached to the scaffolding must be used, and all scaffolding must be approved before use. All scaffolding in use must be inspected on a weekly basis. If the scaffolding is not operable or has not undergone a valid inspection, the scaffolding card must be turned to the STOP position. A ladder must not be used as scaffolding.

The work equipment and machinery must be appropriate and comply with industrial safety requirements. If necessary, they must be equipped with appropriate auxiliary equipment in order not to damage the handled supplies, construction components or the surroundings.

3.11 Personal protective equipment

The procedure “Using personal protective equipment in the Olkiluoto area, 133816” specifies the protective equipment to be used in individual areas. The procedure includes as an appendix a map with access routes that can be used without protective equipment. The basic equipment in the non-controlled area and outdoor areas (outside access routes) includes a hard hat, safety shoes, eye protection and a reflective hi-vis jacket or vest. Chin straps must be worn with hard hats that have a chin strap.

It is necessary to use the specified personal protective equipment (PPE). Failure to wear the PPE must be intervened in, determining the reasons for non-compliance and attempting to rectify the situation. Continuous or repeated failure to wear the PPE is a safety violation that will be investigated case-specifically. In case the nature of the work requires an exemption from the requirement to wear basic protective equipment, the exemption is made based on a risk assessment.

The PPE to be worn in the radiation controlled area is specified under “Working inside the radiation controlled area”.

In addition to the basic equipment required in the area, it is necessary to wear the appropriate protective equipment specified in the risk assessment for the work and the work procedure.

3.12 Fire protection

Each contractor is required to pay special attention to fire safety, act in their area of responsibility such that there is no risk of a fire, and follow the protection instructions issued by the authorities and the TVO Group, e.g. by reviewing the procedure “Olkiluoto rescue plan, 109650”.

Contractors shall follow the client’s hot work plan “Hot work plan, 102294”. A written hot work permit must be obtained for hot work from the TVO Group’s plant fire brigade before starting the work. Persons car-

rying out hot work or roof hot work and hot work guards must have completed hot work training and hold a valid hot work card that demonstrates this.

The client shall take care of fire protection during the work, the procurement of portable extinguishers, fire safety and general fire watch activities at the work site.

OL3 unit related fire fighting scheme is restricted material. In addition, fire fighting schemes from plant supplier NESP-G/2009/en/1154 ja 442565259.

There are maps posted on the walls at the plant that present the evacuation routes as well as the locations of fire alarm buttons and extinguishers. Each contractor shall take care of task-specific fire watch activities as well as the fire watch activities after the completion of the work as per the hot work permit.

In the areas being used, the exit routes must be maintained according to the Rescue Act.

Fire doors must be kept closed. Fire doors must not be wedged in the open position. A permit is required for opening compartmenting fire doors, hatches and other structures. If necessary, the TVO Group's plant fire brigade can issue a permit for opening a fire compartmenting structure.

A permit is required for taking additional combustible material to the plant units. Additional combustible material includes, for example, wooden material, additional packaging materials and clear plastic. A permit is required for transporting additional combustible material. If necessary, the TVO Group's plant fire brigade can issue a permit.

A permit is required for maintenance work in EX rooms. If necessary, the TVO Group's plant fire brigade can issue a permit. EX rooms and the permit requirements are specified in procedure "Explosion protection manual, 121049".

Smoking is only allowed at separately indicated locations.

3.13 Chemicals

All chemicals to be used in an annual outage must be approved by the client before they are used at the work site. Primarily, the TVO Group's chemicals and supplies are used. All chemicals must be marked according to the TLTA classification (safety-classified materials). Workers must always be informed of the hazards relating to chemicals, and the use of the protective equipment according to the material safety data sheet must be supervised. Exposure to chemicals must be minimised by technological

means as well as by using protective equipment. The use and storage of chemicals is instructed in the procedure “Storage of materials that pose a hazard to human health and the environment, 145820”. The procedure also provides instructions on handling combustible fluids and gases.

Exposure to chemicals must be minimized by technical and administrative means, as well as by using the necessary protective equipment. Occupational safety risks caused by chemicals must be described in the work risk assessment.

Only the necessary amount of chemicals shall be stored at the work areas. Chemicals shall be handled and stored in a manner where, even in an accident, they cannot enter the soil, groundwater, surface water or sewer system. Containers of liquid chemicals must be placed in safety bunds.

Work planning must strive to use appropriate work arrangements in order to minimise the number of workers at nearby work areas who will be exposed to solvents. If necessary, special partitioning and ventilation arrangements shall be employed.

3.14 Carcinogenic substances and methods

For the purposes of monitoring, prevention of diseases, and research, an employer-specific list and a national register (ASA Register) are maintained of persons who are exposed to carcinogenic substances and methods in their occupation. The register is based on the legislation (452/2020), and it has been maintained by the Finnish Institute of Occupational Health since 1979.

Supervisors are responsible for monitoring the substances used by their subordinates, the quantities of these substances, and the working conditions. First and foremost, chemicals that are the least harmful should be used. The chemicals must have a safety-classified materials approval (TLTA). When using harmful chemicals, exposure to the chemicals must always be minimised, and practices for protection against the risks posed by the chemicals must be determined on the basis of the work task’s risk assessment and the material safety data sheet of the chemical in question.

As regards subcontractor companies operating in areas managed by the TVO Group, each company by itself is responsible for maintaining the

information and reporting the necessary data to authorities as specified above.

3.15 Dusty work and work hygiene measurements

Work stages that generate high volumes of dust include breaking up concrete, grinding concrete and levelling compound, buffing floor coatings and cleaning. Such work stages require preparing a dust management plan that specifies the following:

- work stages where quartz dust can be generated
- actions for preventing the spreading of quartz dust
- dust removal methods used in machines and equipment
- need for compartmentation and its implementation
- removal of dust gathered on surfaces and the equipment used for the removal

It must be effectively ensured that dust does not spread outside the work area, e.g. with PPE and workwear. Sufficient and appropriate cleaning must be ensured.

A permit is required for work that generates dust or steam or other similar work. If necessary, the TVO Group's plant fire brigade can issue a permit.

If a risk assessment or hazard identification on site finds an exposure risk, the employer must plan the work such that the employees are not exposed to substances that pose a health hazard. The planning of the work must specify the technical measures, the necessary protective equipment and any required breaks, and the client's representative must be contacted if necessary. Employees must be provided with instructions on safe working methods.

It is particularly important to plan these measures in tasks that may generate quartz dust. For example, H class vacuums must be used for dust extraction if the work generates quartz dust. Employees must wear disposable FFP3 respirators or half-mask respirators with a class P3 filter. The employer must ensure that the Government Decree on the Prevention of Work-Related Cancer Risks is followed.

TVO has drawn up guidelines for occupational hygiene measurements and performs measurements at workplaces also as self-monitoring. If necessary, suppliers and subcontractors must identify work shifts that require measurements to be taken and, if necessary, arrange measurements to monitor the health of employees.

3.16 Working in hot and humid conditions

Working in hot and humid conditions requires that the persons are in adequate health for the task in question.

Thermal conditions affect the strain experienced by the worker, and working in hot conditions stresses the body and reduces performance. Work in a hot environment refers to conditions where the air temperature at the work site exceeds 28°C.

Thermal conditions refer to the air temperature, humidity, flow rate and heat radiation at the work site. These physical parameters contribute to the worker's strain during the work. Furthermore, the strain is affected by the employee's personal characteristics, their adaptation to hot or cold environments, the intensity of the work and breaks. Clothing also has a significant effect on thermal strain.

Heart rate rises while working in hot conditions, as the body attempts to reduce the excessive heat load through perspiration. Furthermore, blood flow increases near the skin in hotter environments and during heavier work in order to cool the body. Heavy perspiration affects the body's fluid and electrolyte balance. If the lost fluid is not replaced by drinking, the body becomes dehydrated. Dehydration strains the blood circulation, elevates body temperature and increases the risk of sudden heat-related illness.

Heavy perspiration in hot conditions irritates the skin and exposes the person to various skin lesions and skin conditions. Heat can impair balance, thereby increasing the risk of falling.

Work in a hot environment can subject the worker to heat-related illnesses, such as fainting and exhaustion. The first signs of a possible excessive exposure to heat include fatigue, headache and nausea.

Usually, short-term exposure to heat poses no harm to healthy individuals. However, some illnesses, such as respiratory and circulatory system conditions, heart failure and severe kidney disease, as well as the related medication, may prevent working in a hot environment.

When the temperature, considering the humidity factor, is 28°C or higher, breaks must be taken accordingly. If this value is 28–33°C, the worker is allowed to work without interruption for a maximum of 50 minutes, after which

they must take a break of at least 10 minutes. If this value exceeds 33°C, the worker is allowed to work without interruption for a maximum of 45 minutes, after which they must take a break of at least 15 minutes.

3.17 Mechanical and HPAC installations

The safety regulations for mechanical and HPAC installations follow the obligations pursuant to laws and decrees.

Special attention must be paid to the following, for example:

- pipe and channel installations
- suspensions

3.18 Other considerations

A permit is required for work involving radiation, and detailed instructions for such work are provided in a radiation work permit or radiation work procedure. Radiation work permits are described in more detail in procedure “Use of radiation work permit and procedure, 105107”.

A permit is required for hot work, and detailed instructions for such work are provided in a hot work permit. The permit procedures for work related to fire safety are described in more detail in procedure “Hot work plan, 102294”.

Scaffolding work may only be carried out by qualified personnel. Personal fall arresters must always be worn during scaffolding work.

The work site standard shall be followed at the work areas. Annual outage training includes training on the work site standard. Work areas must be kept tidy, and foreign material exclusion from the process must be ensured by covering any open connections and using FME straps for tools and supplies, if necessary.

Dismantlement of structures must be planned to be performed safely. A qualified supervisor is required for demanding work stages. If necessary, the area must be isolated from its surroundings and it must be ensured that the work does not pose a hazard to other persons working in the area. The transfers and storage of goods and structural parts must be arranged such that their handling is safe.

A plan is required for the safe handling, lifting and installation of formwork. At a minimum, the plan must present the safety measures concerning the handling, storage, lifting and supporting of the formwork, its stability during work and the prevention of a falling hazard. The strength, supports and other characteristics of formwork being transferred must be such that the formwork does not cause a hazard during the transport, unloading, storage, lifting or installation.

4 ANNUAL OUTAGE SAFETY REQUIREMENTS

4.1 Limitations of the annual outage area

The nuclear facility site has been bordered off with a double fence, and access inside the fences takes place through an access-controlled personnel gate. A permit is also required for the transport of goods.

A permit is required for using computers and other IT equipment at the nuclear facility site. Similarly, the use of storage devices and wireless connections is limited in the restricted plant area.

4.2 Working inside the radiation controlled area

“Radiation controlled area” (RCA) refers to the area in nuclear facilities where radiation control is enforced. The RCA has special requirements in terms of protective equipment. The basic protective equipment in the RCA comprises a hard hat, plant overalls, eye protection and safety shoes. Each person must bring their own eye protection to the RCA. Furthermore, any additional protective equipment required by the work task must be used. Chin straps must be worn with hard hats that have a chin strap.

A person moving and working in the radiation controlled area must have a personal TL dosimeter and an electronic dosimeter (E-dosi) for on-line measurements. Both the TL dosimeter and E-dosi must be kept in their appointed locations.

Work in the radiation controlled area must follow the ALARA principle and the safety principle of “Time, Shield, Distance”. All radiation protection guidelines must be followed (radiation work permit, radiation work instructions, other instructions).

Two-stage personnel monitoring is performed whenever leaving the radiation controlled area. The PRE monitor is accessed wearing the basic RCA equipment. The monitor measures any contamination from the protective

equipment and bare skin. In case the monitor signals an alarm, the contaminated piece of equipment is replaced or the contaminated part of body is washed. Radiation Protection must be contacted in case anything is unclear. The EXIT monitor is accessed wearing underwear. This monitor also measures internal contamination. Radiation Protection must always be contacted if the monitor signals an alarm. Contact details for Radiation Protection are available at the monitors.

All of the items and tools taken out of the radiation controlled area must also be measured for contamination before bringing them outside the area. Handheld items can be measured by using the self-service measuring cabinets at the main shoe boundaries. Measurements at the goods transport doors may only be carried out by Radiation Protection. Radiation Protection must be contacted in case anything is unclear.

4.3 Security

The client is responsible for the general security at the site.

In addition to general security, the security personnel carry out alcohol breath tests, narcotics tests, testing for explosive materials and X-ray examinations of bags at the plant gates.

Taking any photographs in the Olkiluoto area without a permit is prohibited. A TVO contact person may apply for a photography permit from tuki-resurssoinnintuki@tvo.fi.

5 PROCEDURE IN CASE OF AN ACCIDENT

The client will arrange sufficient first aid capability for annual outages. The first-response unit of the TVO Group's fire brigade is on call 24/7. The TVO Group's occupational health station services are only available for emergencies. Each contractor shall take care of its occupational health care services with its agreed occupational health care service provider.

Good work planning, hazard identification and risk assessment are used in order to eliminate potential accidents. However, should an accident occur, ensure the following:

- Report the accident by calling the emergency number 112.
- Arrange the necessary first aid.
- Guide the TVO Group's fire brigade to the location.
- Prevent additional damage from occurring.
- Notify the client of the event.

An emergency preparedness plan has been prepared for emergencies and accident conditions. Should such an event occur, the one-minute continuous audible general alarm is signaled and public announcements are made.

At the sound of the audible alarm, immediately move to the nearest muster point. The muster point nearest to the plant units is the employee cafeteria in connection with the central office building. The general alarm is tested on the first Monday of each month at noon.

5.1 Access restrictions

Depending on the plant status and the works to be performed and due to separations, there may be access restrictions, for example inside the containment building. These will be announced separately. All defined access restrictions must be obeyed. In addition, if the area is limited due to the dangers of individual work, restrictions are to be respected.

5.2 Reporting procedures in case of an accident

After arranging first aid, accidents must be immediately reported to the involved person's supervisor and the client's representative. Furthermore, an insurance report must be made for the accident. Accidents are anonymously recorded in the client's observation system and investigated according to the client's instructions. Near misses must also be recorded in the observation system.

6 APPENDICES

Any industrial safety plans and additional instructions added for construction work will supplement this documentation, and the resulting combination is the safety documentation complex for annual outages.