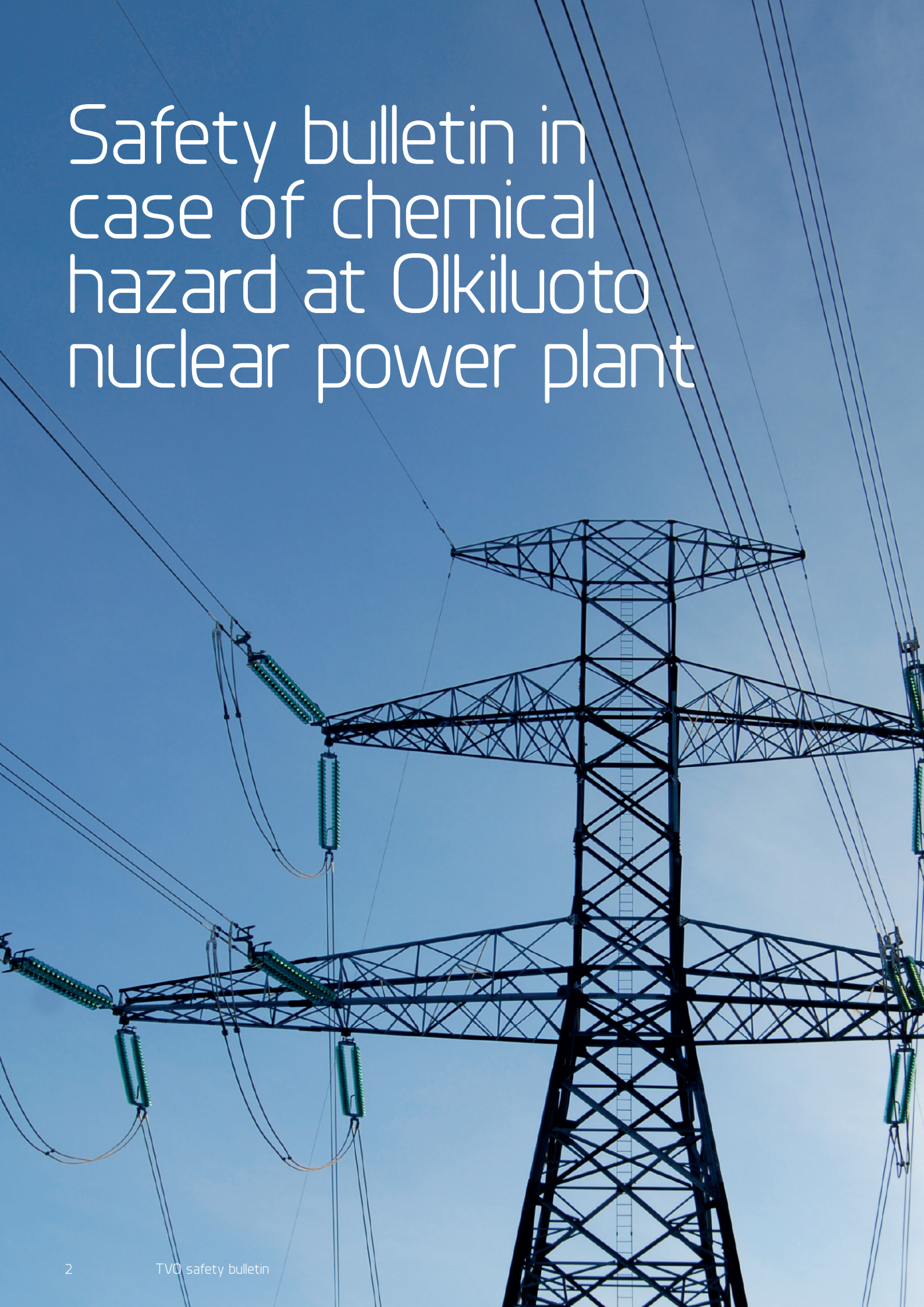
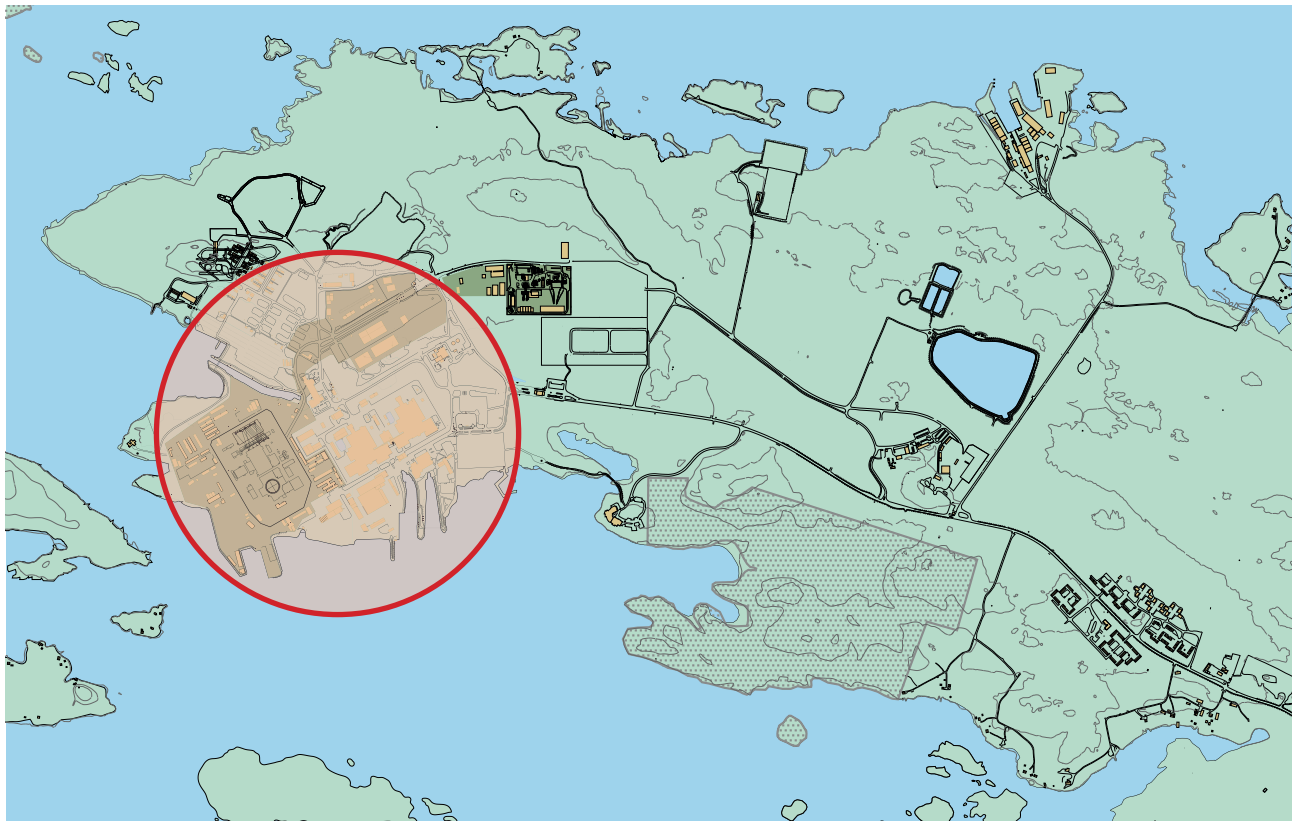




Safety bulletin
in case of
chemical hazard

Safety bulletin in case of chemical hazard at Olkiluoto nuclear power plant





— The risk zone where chemicals are stored and used is limited to the power plant site.

TVO is committed to a high standard of safety culture. In all its operations, TVO takes into account the nuclear safety of its nuclear power plants and all safety issues pertaining to its other operations.

Since 3 September 2012, the Olkiluoto nuclear power plant has been a safety report plant due to the chemicals stored and used onsite. A safety report in compliance with the Finnish Decree on the Industrial Handling and Storage of Dangerous Chemicals (59/1999) has been filed with the Finnish Safety and Chemicals Agency (Tukes). The safety report and the related lists of chemicals can be viewed at the main gate of the Olkiluoto nuclear power plant.

As the party in charge of the safety report, Teollisuuden Voima Oyj (TVO) has drafted this bulletin regarding areas adjacent to the Olkiluoto nuclear power plant. This bulletin includes information on operations of the nuclear power plant, potential risks caused by the operations and measures to be taken in case of a dangerous situation to avoid and minimize damage.

A separate bulletin and separate instructions in case of an accident involving radiation have also been drafted. These can be viewed on the websites of the municipalities of Eurajoki and Luvia, the town of Rauma, TVO and the Satakunta Rescue Services, and at the beginning of the telephone directory for the Satakunta region.

Olkiluoto nuclear power plant

Olkiluoto nuclear power plant consists of plant units OL1 and OL2. These plant units are boiling water reactor (BWR) type light water reactors, and the net electrical output of both units is around 880 MW. The combined annual electricity production volume of the plant units is around 14 TWh.

A new plant unit, OL3, is currently under construction. It is a pressurized water reactor (PWR). The electrical output of OL3 will be around 1,600 MW and it will produce around 13TWh of electricity per year. In addition to the actual energy production units, the power plant includes an interim fuel storage facility for spent nuclear fuel, interim fuel storage facilities and processing facilities for low level and intermediate level waste, a final repository for the nuclear power plant's waste, a raw water treatment plant, a demineralization plant and a domestic waste water treatment plant. There is a boiler plant that serves as a backup heat plant. Furthermore, Posiva Oy's ONKALO research facility and Fingrid Oyj's gas turbine power plant are located outside the power plant site on Olkiluoto Island.

TVO's operating system is certified and TVO has a quality management system based on ISO 9001. The environmental management system complies with ISO 14001, EMAS and Energy Efficiency System EES. Furthermore, TVO has an occupational health and safety management system that complies with OHSAS 18001.

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Hazardous chemicals used at Olkiluoto and their potential risks

Tukes has granted TVO the permits needed to store and use hazardous chemicals on the Olkiluoto plant site. A plant storing and using hazardous chemicals is obligated to draw up a safety report based on the quantities of chemicals used and their properties. Olkiluoto nuclear power plant is obligated to draw up a safety report because its storage and use of hazardous chemicals is extensive.

The most important chemicals used at Olkiluoto nuclear power plant in terms of hazardous properties and the quantity stored and used are aqueous hydrazine solution, diesel oil, petrol and hydrogen. For more information on the properties of these chemicals, please see the table below.

Based on the identification of risks and risk assessment, the risks with the most severe consequences are

potential major leaks of diesel and fuel oil from the backup power system or a fire in these systems, flammable gas leaks and ignition of flammable gases, damage caused to a hydrazine container, and a fire at a site where chemicals are being used or stored.

Based on the identification of risks and risk assessment, the chemicals stored and used at the Olkiluoto power plant do not pose any risk of major incident. Potential risks influencing people and property are limited to the power plant site.

Preparations have been taken to limit any environmental damage to the immediate vicinity of the power plant. A fire may generate plenty of smoke and the soot generated during a fire may contaminate the environment. A severe accident could lead to oil or fire fighting water containing oil or chemicals draining into a body of water.

CHEMICALS HAZARDOUS TO HEALTH OR THE ENVIRONMENT

Chemical's name	Hazardous properties	Impact on health and the environment	Risk identification and precautions
Hydrazine	T - toxic C - corrosive N - dangerous for the environment	The 15% hydrazine solution that is used in the power plant's steam-water circulation system to prevent corrosion is carcinogenic and toxic to aquatic organisms.	Hydrazine splashing or leaking when being injected into the process or a hydrazine container (1 m ³) being damaged during transport. The chemical is handled in compliance with appropriate safety regulations. Any leaks will be processed in a controlled manner on site. The plant fire brigade is ready to prevent accidents and has the necessary equipment at their disposal.
Diesel fuel	X _n - harmful N - dangerous for the environment	Liquid fuel that is carcinogenic and toxic to aquatic organisms.	Danger of leaks and ignition. There are instructions on the transfer from a transport vehicle to a tank and the transfer is always controlled. There is a leak basin under each tank. The plant fire brigade is ready to prevent accidents and has the necessary equipment at their disposal.

FLAMMABLE AND EXPLOSIVE CHEMICALS

Chemical's name	Hazardous properties	Impact on health and the environment	Risk identification and precautions
Hydrogen	F+ - extremely flammable	Gas that is extremely flammable and lighter than air.	A hydrogen leak could cause an explosion and a hydrogen fire. Exhaust gas systems for removing hydrogen have been installed in plant unit OL3. The area will be isolated and the plant fire brigade's instructions will be followed in case of danger.
Petrol	F+ - extremely flammable T - toxic N - dangerous for the environment	Highly volatile liquid fuel that may form an explosive mixture with air. Carcinogenic and toxic to aquatic organisms.	Danger of a leak and ignition. A proper oil removal and sewerage system. The plant fire brigade is ready to prevent accidents and has the necessary equipment at their disposal. The area will be isolated in case of ignition.

Precautions in case of danger or accident

TVO and its personnel are committed to a high standard of safety culture. To ensure safety, TVO takes into account in all its operations the nuclear safety of its nuclear power plants, safety of its production and operations, occupational safety, the environment, data security, the security of its facilities, as well as rescue operations and emergency preparedness.

TVO pays special attention to safety competence of its own personnel and the personnel of contractors operating at the power plant site. Employees must complete introductory training and occupational safety card training in order to obtain an access card to the power plant site. All people working on site must have the competencies required for their tasks. The personnel are offered regular safety training.

The operations and safety of the Olkiluoto nuclear power plant are monitored with inspections by, for example, the nuclear safety and chemical safety authority. Regular fire safety, chemical safety and occupational health and safety audits, and the audits required by the certified operating system, are arranged at the power plant.

There are internal rescue plans for the Olkiluoto area. These include instructions on what to do in case of various types of accidents and dangerous situations. A fire brigade and a rescue unit are present in the plant area. They will handle the initial rescue measures in case of an accident. Arriving at the scene, the Satakunta Rescue Services will take over management of the accident as well as extinguishing and rescue activities.

If the accident poses a danger outside the plant site, the Rescue Services will isolate the dangerous area and provide the residents with the necessary instructions. The Rescue Services have drafted an external rescue plan for the area.

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This bulletin is also available on
the TVO website at www.tvo.fi.



WHAT TO DO IN CASE OF A MAJOR ACCIDENT

The **general alarm signal** is a 60-second rising (7 seconds) and falling (7 seconds) siren signal or a warning issued by an authority.

The **'all clear' signal** is a steady one-minute siren signal indicating that the threat or danger is over.

The **test signal** is a seven-second steady siren signal.



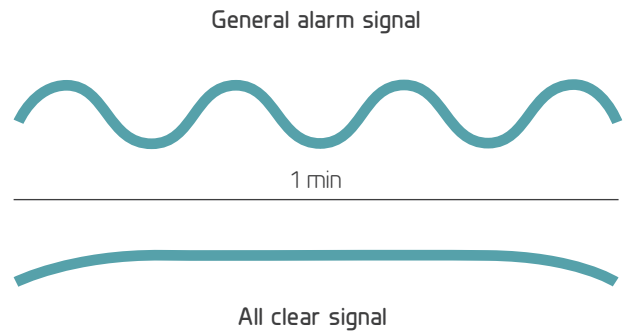
What to do when you hear the general alarm signal

1. Go indoors and stay there.
2. Close all doors, windows, ventilator slots and turn off air conditioning systems.
3. Turn on the radio and calmly wait for further instructions. Avoid using the telephone, so as not to overload the lines. Do not leave the area without a specific order from the authorities so as not to put yourself in unnecessary danger.

FOLLOW ALL THE INSTRUCTIONS AND ORDERS GIVEN BY THE RESCUE SERVICES IN CASE OF AN ACCIDENT.

The authorities will tell you when the danger has passed. These instructions are also available at the beginning of the local telephone directory. For further information, please visit the website of the Rescue Services at www.pelastustoimi.fi.

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Follow the instructions mentioned before in case of a danger caused by gas, and also follow these instructions:

- If you are indoors when you smell gas, press a wet cloth against your mouth and breathe through it.
- Stay on the upper floors until the danger is over.
- Listen to the radio.



If you are outdoors and cannot get indoors:

- Move side wind from under the gas cloud.
- Try to get as high up as possible, such as on top of a hill.
- Press a wet cloth, a bunch of grass, or some peat or moss against your mouth and breathe through it.



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