# Joint-stock company Latvenergo

# Riga TPP-1 ABRIDGED CIVIL PROTECTION PLAN

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### Introduction

JSC Latvenergo Riga TPP-1 Civil protection plan has been developed based on Sections 14 and 18 of the Civil Protection and Disaster Management Law, Section IV of the Cabinet Regulation No.658 "Regulations regarding Civil protection plan structure and information to be included" adopted on November 7, 2017, Section V of the Cabinet Regulation No.131 "Industrial Accident Risk Assessment Procedures and Risk Reduction Measures", as well as "Latvenergo Group Procedure for Emergency situations and Crisis Management".

JSC Latvenergo Riga TPP-1 Civil protection plan has been agreed on January 29, 2019 and approved on February 4, 2019 by the State Fire and Rescue Service in accordance to the requirements stated in the Clause 4, Section 14 of the Civil Protection and Disaster Management Law.

Due to the fact that the plan contains confidential information the reduced version of the Riga TPP-1 Civil protection plan has been developed in accordance to the Clause 59 of the Cabinet Regulation No.131 Industrial Accident Risk Assessment Procedures and Risk Reduction Measures adopted on March 1, 2016.

### Terms used in the plan

**Emergency situation** – special legal regime of the State institution, government, commercial company and individual merchant activity that admits restriction of and legal person rights and freedom or to imposes additional duties in case if disaster endangers the safety of public, environment or economic activity.

**Early warning** - targeted and immediate provision of information to persons and responsible authorities on a disaster or threats of a disaster and the required action.

**Hydrometeorological hazards** - are processes or phenomena of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, property damages, loss of livelihoods and services, social and economic disruptions, or even environmental damages.

**Dangerous goods** - goods, which due to the properties thereof may cause an explosion, fire, human or animal death, falling ill, poisoning, irradiation or burns, damages to the property or may cause harm to the environment during carriage or temporary storage process related thereto.

**Hazardous substance** – chemical substance or product which due to the physical, chemical or toxic properties or due to their physical condition may cause harm to the human life or health, animals and environment.

**Dangerousness** – property that is characteristic to substance, energy or situation that in specific conditions cause or may cause harm to human life or health, environment.

**Civil protection** – a set of organisational, engineering, economic, financial, social, educational and scientific measures implemented by the State and local government authorities and the society to ensure the safety of people, the environment and property, and also implement corresponding actions in case of a disaster or threats thereof.

**Natural disaster** – geophysical, hydrological, meteorological, climatological, biological and cosmic phenomena that may cause earthquake, ground collapse, flood, ice jam, rainstorm, hail, snow banks, storm, hurricane, frost or extreme heat, icing, dryness, forest and peat swamp fire, epidemics, epiphytotics, meteorite falling and geomagnetic storms.

**Deactivation** – elimination of *radioactive contamination* to reduce amount of radioactive substances on surfaces, human body, materials or other environmental objects.

**Evacuation** – human movement towards indicated safe direction or movement to safe place before disaster or during disaster from the territory or room where the conditions may cause hazard to human life and health.

**Personal protective equipment** – equipment worn by the employees to protect his safety and health against hazardous or harmfull work environment factor impact.

**Ionising radiation sources** – devices, radioactive substances, nuclear materials, radioactive waste or equipment that may created ionising radiation or may create radioactive substances from non-radioactive materials by radiating them with particles or high energy gamma ray, as well as ionising radiation generation technical equipment significant parts.

**Disaster** - an accident which has caused human casualties or endangers human life or health, caused damage or threat to people, the environment or property, and also inflicted or inflicts significant material and financial losses and exceeds the daily capacity of the responsible State and local government authorities to prevent the devastating conditions.

**Threats of a disaster** - a situation when risk assessment, forecasts, information or other circumstances reasonably indicate to the likelihood of a disaster.

**Chemical accident** – significant damage to the technological processes, tank, pipe or hazardous substance truck damages that has led to hazardous substance leak in such amount that may cause threat to human, animal health and life, as well as can cause devastation to the environment.

Maximum permissible amount of dangerous substance concentration — maximum amount of dangerous substance in soil, air, water, food, raw food that doesn't have an impact to the human health and doesn't cause adverse health effects.

**Undesirable event (incident)** - negative changes in the course of operation of an establishment, for example, damages of a technological or mechanical nature, unintentionally or intentionally incorrect operation, also other deviations from the technological process regimen, or external factors which have not caused industrial accident.

**Object of increased danger** – a building or an engineering structure used in an economic or any other way which is connected to the generation and accumulation of energy, electromagnetic radiation, processing, treatment, production, use, storage and transportation of flammable, explosive, dangerous chemical substances and mixtures, hazardous waste, plant quarantine organisms, biological and radioactive substances, nuclear materials and waste thereof.

**Spring flood** — water level stage that in particular climatic conditions repeats each year during one and the same season by having typical annual maximum water level, long lasting high water levels and bottomland flooding

**First aid** - assistance provided to victims (persons who have been taken ill) in a critical state of danger to life or health by persons with or without medical qualifications, within the scope of their knowledge and possibilities irrespective of their proficiency and equipment.

**Flood** – land that usually is not covered by water, the water flow obstructions may be caused by long lasting precipitation, snow melting, ice jam and water level is rising. Flood may happen also if the dam or other construction fails due to the water level rise and then large territories are flooded.

**Preventive measures** - a set of measures performed to prevent or reduce the threats of a disaster.

**Radiological emergency** – result of an event due to which the level of radioactivity has been detected within the state or outside its territory that significantly exceeds annually monitored background radiation level and radiation dose limits can be exceeded that may cause harm to the inhabitant health.

Radioactive substance - a substance containing one or more radionuclides – isotopes which produce ionizing radiation through the conversion of atoms with totalt or specific radioactivity exceeding the permissible values from which it is necessary to protect employees, residents and the environment.

**Response measures** - a set of the measures which are performed in order to reduce or eliminate devastating conditions and the consequences caused thereby, to prevent or reduce harm to people, the environment and property.

**Risk** – probability of disposal o fan undesirable event caused by human activity or natural process in a given are and over time period and a combination of possible amounts of the consequences of this event.

**Source of the risk** – technical object, social or natural phenomen which may lead to an accident under defined conditions.

**Risk factors** – risk affecting parameters dependent on technical devices, technological processes, operating processes and performance.

**Riska zona** – territory that may be affected by undesirable effects o fan accident.

Measures for the elimination of consequences - a set of measures which are performed in order to ensure at least the minimum basic needs of inhabitants related to the survival of people and to stop or reduce threat to human health, the environment and property.

**Explosion** – momentary (explosive) chemical transformation of the substance or mixture where the large amount of energy is released resulting in increased pressure (excess pressure and shock wave).

**Technogenic disasters** - disasters caused by a release of chemical, radioactive and biological substances, fires in buildings and structures, explosions, ruptures in dams and other hydrotechnic structures, damages to energy networks, accidents in utility networks, collapse of buildings and structures or vehicle accident.

**Alarm signal** – a signal transmitted in a specified area or authority warning of the disaster or its threat and the need for employees to switch on television or radion in order to obtain information for further action.

**Ionising radiation objects of national significance** - nuclear installations, radioactive waste disposal facilities, radioactive waste management facilities and such facilities in which activities with radioactive substances are performed, the total radioactivity of which exceeds the limits laid down by the Cabinet by more than one billion times, for which a special licence or permit is required.

**Fire protection equipment** – stationary fir fighting equipment, automatic water covers, automatic fire detection and alarm equipment, stationary automatic air overpressure and smoke discharge equipment, fire and other emergency notification and evacuation management equipment.

**Fire safety** – compliance with requirements specified by regulatory enactments regarding prevention of fire, successful fire fighting and mitigation of their consequences.

**Fire fighting** – organised activities carried out to fight the fire, to save natural persons and material values, and to protect the environment during the fire fighting.

**Fire extinguisher** – portable or mobile device with fire-extinguishing agent intended for extinguishing the fire source.

**Fire hydrant** – stationary device for extracting water from the external water pipeline for extinguishing purposes.

### Abbreviations used

**AES-** nuclear power plant (NCP)

**AK** – administrative building.

**CAP** – civil protection plan.

**CRD** – main repair workshop.

**DUS** – fuel station.

**GRP** – gas adjustment unit (GRM).

GT – gas turbine.

**HRSG** – heat recovery steam generator.

**IAL** – personal protective equipment (PPE).

**IDLH** – Immediately Dangerous to Life or Health - atmospheric concentration of dangerous substance, that with *30-minute* exposure duration can cause irreversible effects to the human health (life) if no protective measure have been taken, ppm or mg/m³, reffered to power plant employees, since 1998 also to residents.

**KR-** nuclear reactor

**KSS** –river bank pump station.

LAN – local area network.

**LAS** – *Latvian* standard altitude *system*.

**NMPD** – State emergency medical service.

**OVP** – operational management department.

**RVP** – regional environment department.

SB – explosive.

**SBP** – explosive item.

**SPKC** – *Centre* for *Disease Prevention* and *Control*.

**ST** – steam turbine.

**TEC-1** – Riga first thermal power plant TPP-1.

**Rīgas RVDI** – Riga regional State Labour Inspectorate.

**UDzGDV** – fire fighting and rescue work manager

**VDI** – State Labour Inspectorate.

**VUGD** – State Fire and Rescue Service.

### 1. Details of the Object of increased danger and location

Name of Object of increased danger: Joint Stock company Latvenergo power plant Riga TPP-1, Unified registration number No.40003032949. Legal address: Pulkveza

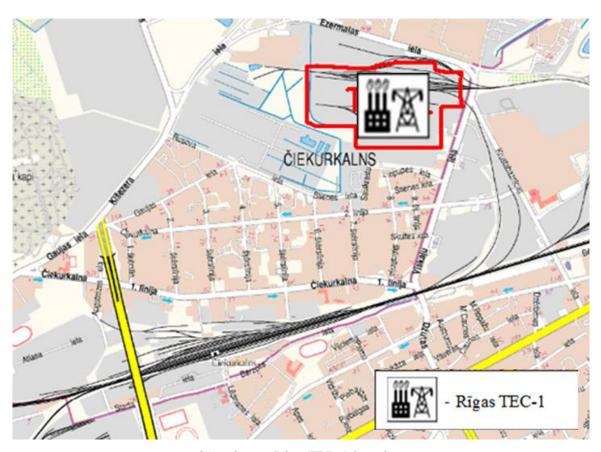
Brieza street 12, Riga, LV-1230, Latvia, Phone: (+371) 67728222, fax: (+371) 67728880, e-mail: info@latvenergo.lv

Riga TPP-2 location: Viskalu street 16, Riga, LV-1026, Latvia, phone: (+371) 67723359, fax: (+371) 67722322, e-mail: kanceleja@latvenergo.lv

# 2. Information about geographic location of Object of increased danger and object local meteorological, hydrological and climate description

### 2.1. Geographic location

Riga TPP-1 is located in North-East of Riga city Ciekurkalns territory (Viskalu street 16, Riga) 0,6 km away from Kisezers (see 2.1.picture).



2.1. picture Riga TPP-1 location

Geographic coordinates:  $56^{\circ}$  58' North latitude un  $24^{\circ}$  12' East longitude. Height marks above sea level in accordance to *Latvian* standard altitude *system* (LAS-2000,5) - 2,65 - 3,55 meters.

TPP-1 territory, calculating from the power plant perimeter, has following distances from:

Geometric center of Riga city (St Peter's Church)
 State Fire and Rescue Service Riga region 7th station
 State Fire and Rescue Service Riga region 6th station
 Briviba avenue
 Southern bank of Kisezers lake
 nearest residential houses
 nearest public houses
 16,5 km;
 1,0 km;
 1,2 km;
 0,6 km;
 0,32 km;
 0,35 km.

### 2.2. Ambient meteorological, hydrological and climate description

Winter (December-February): moderate cold, overcast sky. Daily air temperature: -1 to -7°C, at night: -3 to -9°C. Deep freeze is rare and also short term. Maximum air temperature -31°C. Each winter month there are 1 to 3 clear days, 1 to 10 days with snowfall and 2 to 3 days with thaw. Permanent snow blanket forms in the second half of December and stays until end of March. Maximum snow thickness (50 cm) usually is in February, soil permafrost layer: 20 to 50 cm, in individual years – up to 80 cm.

Spring (March – May): It is cool in the first half of the season, but warm and sunny in the second half. There are 2-6 clear days during the month, 1-8 foggy days, 10-18 days with rainfall and wet snow.

Summer (june-august): moderately warm, humid, usually rainy. Daily temperature +18 to +20 °C (maximum +36°C), at night +10°C to +13°C (minimum +5°C). Each summer month is characterised by 1 to 8 clear days, 6 to 12 rainy days of which 2 to 8 days with thunder.

Autumn (September-November): rather warm, mostly overcast and rainy weather. There are 1 to 3 clear days during the month, 13 to 21 days with rainfall in the form of spraying rain (in the second half of the season with wet snow). The first frost is at the end of October.

The prevailing winds blow West and South West, average speed 4,4 m/s.

TPP-1 is located in Daugava river catchment basin. The nearest water body is Kisezers lake that is located approximately 0.3 km to the North from the power plant. Kisezers lake area is 1730 ha. It is connected into one hydrographic system with Jugla lake, Baltezers lake, Daugava river and thus also with the Gulf od Riga. TPP-1 territory is linked to the southern edge of Kisezers lake by drainage channel with total length of 970 m, but designed discharge capacity  $7.0 \text{ m}^3/\text{s}$ .

### 3. Description of Object of increased danger and its operation

### 3.1. Working hours

Working hours for administrative personnel and maintenance department are 8 hour working day, 40 hours working week. Operating (shift) personnel working hours: form 7:00am to 7:00pm and from 7:00pm to 7:00am.

### 3.2. Technological processes and equipment

TPP-1 operation is based on combined heat and power generation. Generated power from TPP-1 is transmitted to AS "Latvijas elektriskie tīkli", but generated heat is distributed by AS "Rīgas siltums", that provides central heating and hot water supply to Riga city. Rīgas pilsētā.

As main fuel is used natural gas, and as reserve fuel for heat only boilers is diesel.

For centralised heat supply the power pant has two gas turbines, one steam turbine and three heat only boilers. TPP-1 electrical capacity is 144 MW, but thermal capacity – 493 MW.

### 3.3. General description of technical systems and auxiliaries

### 3.3.1. Water supply

For TPP-1 water supply the follokwing is used ūdensapgādei tiek izmantots:

- Underground water from local artesian wells;
- The city's water pipeline.

The water from groundwater (artesian well) and city's water pipeline is used for generation and fire fighting purposes.

From the Riga city water pipeline (diameter 200 mm) at the corner of Viskali and Ezermala streets two parallel cast iron water pipes are branched off with diameter of 150 mm.

In the power plant territory there are an external fire fighting pipeline loop installed with 12 fire fighting hydrants, water pipeline 150 mm.

Internal fire fighting water systems in the buildings are equipped with internal fire fighting taps that are installed in the fire fighting cabinets on elevation 1,35 m above the floor level or maintenance platform level. Fire fighting hoses, barrels, fire extinguishers are located in the cabinets.

#### 3.3.2. Wastewater system

During TPP-1 operational process the following wastewater categories are formed:

- Wastewater drainage through respective systems:
- Wastewater cooling, if necessary;
- Wastewater treatment to specific level, if necessary;
- Wastewater drainage to the city wastewater system in accordance with technical regulations.

Rain water from the roofs of wastewater treatment plant, power plant, electrical equipment and administration buildings is drained to the rain water collector of Riga city on Ezermala street through closed type sewer.

#### 3.3.3. Power supply

In normal operating conditions the power plant self consumption of electricity is provided by generators. In cases if generators are not in operation power supply to the power plant is provided from 110 kV network auxiliary transformers TN5, TN6 that are connected to the block transformers.

#### 3.3.4. Heat supply and ventilation

TPP-1 buildings has heating, ventilation and air conditioning systems, that are controlled from power plant dispatcher room.

In the event of fire, the ventilation system units in the fire zone are automatically shutdown. Fire dampers are installed on ventilation system air ducts (air ducts connects several rooms).

Operational personnel can disconnect ventilation units from the control panel, if necessary.

### 3.4. Power plant security system

The power plant has security system. Based on mutual agreement the Power plant also is controlled by certified physical security.

### 3.5. Power plant internal risks, including dangerous equipment and the maximum of produced, used, managed or stored dangerous substances

Accidents are such industrial and transportation accidents which may result in people being exposed to forced risk or mass voluntary risks with severe consequences. Accidents involving one or more individuals usually is not associated with accident risk. Emergency risk means local source of danger, for example leakage of toxic substances or fire accident which are attributed to individual and social risks.

TPP-1 hazard assessment of potential (technological) accidents has been performed in the following three emergency situations:

- Natural gas leakage from the pipeline with subsequent ignition;
- Diesel leakage;
- In the event of fire.

#### 3.5.1. Dangerous equipment

The following dangerous equipment are in TPP-1:

- Pressure equipment and complexes
- Hazardous substance storage;
- Elevators and cranes (lifting equipment).

All abovementioned dangerous equipment are registered in the dangerous equipment register In accordance with the normative enactments.

Periodic technical supervision of dangerous equipment is carried out by certified inspection companies which periodically and in accordance to the concluded contracts performs inspection of dangerous equipment.

### 3.5.2. Dangerous substances and products

In generation process TPP-1 is mainly using natural gas and diesel for heat only boilers. Also other chemical substances and mixtures are used in technological equipments.

Hazards and safety measures to be considered for most dangerous chemical substances are specified in material safety data sheets available in TPP-1.

### 4. Risk assesment summary for objects of increased danger

### 4.1. Possible risk scenarious in power plant

By describing spread of hazardous impact of possible accident consequences, and information about consequence impact on human as well as impact on adjacent objects has been reviewed.

Taking into consideration hazard chemical substance properties and possible emergency scenarious in technological equipment the modelling of emergency consequences for following types of accidents have been considered:

- puddle fire in case of diesel leak and ignition;
- spread and explosion of gas air mixture;
- fire of natural gas jet.

In the risk assessment the technological equipment and processes are included related to hazardous chemicals used in production process – natural gas and diesel.

#### **Conslusions**

The overall conclusion of the risk assessment is that operation of TPP-1 from the public point of view is acceptable, because the defined power plant risk level outside the power plant territory does not exceed the risk level of 10<sup>-6</sup>.

In general the supervision of power plant processes and safety automation level is evaluated as sufficiently proportionate to the power plant operation importance and hazardousness.

The risk assessment also includes modelling of the direct impact of accidents, which chows that the exposure of the accident scenarios examined to the adjacent objects is determined at risk level below  $1\times10^{-8}$ , while the object mutual exposure is determined at a risk not greater than  $1\times10^{-7}$ .

### **4.2.** Power plant external threat and possible consequences

#### 4.2.1. Spill of hazardous chemical substances and products

Leakage of dangerous chemicals and products (hereinafter - dangerous substances) may occur:

- In cases of industrial accidents in national or local objects of increased danger where dangerous substances are manufactured, stored or recycled;
- In cases transportation accidents during transportation of dangerous goods by means of transport (road transport, railway transport, floating vehicles, aircrafts).

There are two C category objects of increased danger nearby TPP-1:

- fuel station AS "VIADA Baltija" (quantity of oil products up to 92,3t) is located on Džutes street 16, Riga, approximately 1 km away to the South from the power plant;

- fuel station AS "VIADA Baltija" (quantity of oil products up to 76,33t) is located on Ķīšezers street 31, Riga, approximately 0,4 km away to the North-West from the power plant.

Area where the individual risk is greater than  $1 \times 10^{-6}$ , around the fuel station constitutes an area of approximately 225 m<sup>2</sup>. Consequently the safety of TPP-1 employees will not be affected by possible accidents at fuel station.

#### 4.2.2. Transportation of dangerous goods

TPP-1 power plant, including employees may be threatened by the transportation of the dangerous goods, including transportation by rail. Considering the range of activities of hazardous companies in Riga, oil products, liquefied petroleum gas, ammonium nitrate fertilisers, and other hazardous goods are transported in various quantities through Riga. Approximately 550 m from TPP-1 territory is located national railway line Meitene – Jelgava – Rīga – Lugaži. Potentially significant accidents could be felt in the power plant, such as collapse of the railway tank. Currently there is no information available to the power plant about railway transportation on the abovementioned railway line and current risk situation, but if we have a look at dangerous goods as Chlorine the destination of which is Riga, according to the risk assessment of the transport of dangerous goods by rail in the territory of Latvia carried out in 2013. Then in case of chlorine spill from 800 liter tank, the concentrations may spread 550-700 m away from the place of accident and it can be dangerous for human life. This means that in the event of accident of this type on abovementioned railway line, the threat could also reach TPP-1.

It should be noted that toxic impact cannot pose a risk to other technological equipment Jāņem vērā, ka toksiska iedarbība nevar radīt apdraudējumu citām tehnoloģiskām iekārtām, izsaucot domino efekta avārijas.

Conversely by evaluating hazards of car accidents in TPP-1, it shall be considered that TPP-1 territory is enclosed with fence and it is separated from the road by a wide green area of approximately 80 to 260 m, therefore it can be concluded that car accidents without dangerous chemicals can not threaten the power plant operation and its employees.

#### 4.2.3. Radiation accidents

There is no information about the potential sources of radiation leakage around the power plant. The risk of cross-border radioactive contamination and its probability are described in the State Civil Protection Plan, so no additional research in this area has been performed. Radioactive contamination will not pose a direct threat to the technological equipment, therefore such threat could not lead to industrial accident in TPP-1.

In case of cross-border radioactive contamination the company will act in accordance with instructions of the State Rescue Services.

During transportation of radioactive materials contamination with radioactive substances in the part of the city territory may occur in the event of vehicle accident.

<sup>&</sup>lt;sup>1</sup> PSI "Risks un audits" SIA, Quantitative risk assessment for the transport of dangerous goods by rail in the territoty of Latvia, 2013.

Radioactive contamination area may then be form in any place of the road where the vehicle has crashed.

Radioactive cargoes in Riga and its surrounding are transported with specialised transport along certain routes.

#### 4.2.4. Biological terrorism

Carefully planned, technically assured and with possible access to biological weapons, terrorist activities pose a new threat. International terrorism is characterised by cration of global network and decentralisation of terrorist organisations that makes difficult for countries to completely prevent terrorist activities.

Biological substances are available from manufacturers. Only basic skills and tools are needed to construct a biological weapon by an individual or organisation.

Biological substances are viruses, bacteria or toxins that can pose serious threat to humans, animals and plants. Biological substances are very difficult to detect and often have incubation period of at least few days before signs of disease appear. A person infected with biological substance shall immediate medical care.

Potential means of bioterrorism can be:

- Found powder substance of unknown origin or powder substance of unknown origin found in suspicious mail;
- Unopened suspicious mail has been received or found.

In case of biological active substances the prevention and anti-epidemic measures are carried out by Centre *for* Disease Prevention *and* Control.

#### 4.2.5. Explosions and explosion threat

Anonymous messages regarding placement of explosive object in the office may be received by telephone or in the form of written statement. The motivation of the anonymous message may vary from abusive hooliganism to terrorist elements. Message addressees ususally are company managemen, security, police department or State Fire revenue service communication points. The most reliable messages are those which raise specific requirements (money, actions, etc.)

Action when receiving information about bombing or explosion threats is specified in JSC Latvenergo Physical safety regulations (Annex 5).

Three typical data is included in anonymous information:

- place mostly the object is located in places with large number of people;
- time information is usually received during working hours when there is highest concentration of people;
- type information is usually received via telephone.

When receiving anonymous information, efforts should be made to find out as much as possible about the speaker, the bomb (questions should be asked to delay time).

### 4.2.6. Unlawful intrusion related to vandalism, arson and other factors

To minimise the risk of unauthorised entry and to prevent an emergency or provoking situation, TPP-1 territory is enclosed with fence. Its perimeter and power plant territory is controlled by security systems. Based on mutual agreement the Power plant also is controlled by certified physical security.

### 4.2.7. Natural disasters and hazardous hydrometeorological phenomena

TPP-1 safety can be threatened by flood, strong wind, lightning discharge and other natural disasters.

#### Flood

Flooding can be caused by:

- very heavy rain;
- high level of wind surge;
- spring floods;
- collapse of Daugava cascade hydro power plant dams.

Flooding in Riga can be caused by long lasting strong North, North-West wind with speed exceeding 20 m/s by chasing the water from Gulf of the Sea in Daugava and endangering lower areas of Riga.

Usually the water level at the estuary of river Daugava rises twice a year to the mark of 1,44 - 1,55 m above sea level. As a result of wind surge the rising water levels in the river estuary are observed during the autumn and winter seasons (in October, November, December and January). The highest water level rise was registered in November of 1969 when the height mark above sea level reached 2,14 m.

TPP-1 water level height mark is approximately from 2,65 to 3,55 m above sea level (LAS-2000,5), thus the spring flood has no threat to TPP-1.

In the event of full collapse of Riga HPP dam in Riga city approximately area of 41,9 km<sup>2</sup> with 90,3 thousand inhabitants may be flooded, maximum flooded area may be 52,5 km<sup>2</sup>, if water level reaches 18 m (standard). Water level height mark in Riga may reach 4-6 m above mean sea level. If water level in reservoir reaches 12 m (minimum), then in the event of Riga HPP dam collapse in the territory of Riga city no flooding is expected.

Potential dam collapse maybe caused by:

- high flooding in Daugava;
- sudden decrease of construction safety.
- Unpredictable natural phenomena (falling meteorites, major earthquake, etc.);
- diversions.

The accidents dealt with are purely hypothetical. Riga HPP dam and dams were designed and constructed with a certain margin of safety and may ensure the water discharge capacity of 13100 m<sup>3</sup>/s, without creating a threat to safety of Riga sity.

Conclusion: flooding may affect the power plant in the event of Riga HPP accident, if water level will reach the height mark 18,00 m (standard). However the probability that TPP-1 employees and property may suffer as a result of flooding is very small.

### Strong wind

Severe storm – wind speed 25 - 33 m/s. Such wind speed can cause tree break, overhead power line and communication damages, power supply and communication disturbances, damages to the buildings and other damages.

Hurricane – wind speed exceeds 33 m/s. Wind gusts with tornado intensity can cause great damage, move heavy objects, pull out trees with roots.

Tornado – wind speed can exceed 25 m/s within small area. In the event of tornado formation within small area major damages can be caused, heavy objects are moved, trees pulled out with roots, communication and overhead power line breaks.

TPP-1 is designed and built to esnure that wind intensification cases does not have impact on equipment safety.

### Lightning discharge

Technological equipment safety may be threatened by lightning discharge. To avoid such hazards in the power plant territory lightning protection systems are installed. Earthing lightning protection system device testing and electrical insulation resistance measurements are carried out annually by preparing technical report for each measurement set.

Hypotetically, TPP-1 safety can be threatened also by earthquakes, but this kind of threat is unlikely because the Republic of Latvia is geographically located in region where there is no major seismic activity.

### 5. Information about territory of the object of increased danger that may have impact of accident, including information about number of people and nearby located objects that may have impact of an accident in the object of increased danger

If the leakage of natural gas from the above-ground pipeline which connects the gas adjustment unit with heat only boilers develops as steam cloud explosion then the spread of excess pressure is possible. In the event of gas cloud fire the threat is expected throughout the gas cloud spreading area.

If the leakage of natural gas from underground pipeline develops as gas cloud explosion in the event of full rupture, then the possible spread of excess exposure. In the event of gas cloud fire, the risk of gas cloud spread is expected throughout the area.

The following objects located in the overpressure zone caused by gas cloud explosion:

- SIA "Baltic Biogran" wooden pellet factory Ezermalas street 1A, Riga;
- SIA "Konkas auto" metal working Ezermalas street 1A, Riga;
- SIA "Eksim Trans" concrete factory Ezermalas street 1C, Riga;
- State Police college Ezermalas street 10, Riga;
- National Defence Academy Ezermalas street 8, Riga;
- Ministry of the Interior Provision State Agency accomodation Ezermalas street 8A;
- SIA "MDT Baltic" design and architecture company Ezermalas street 6;
- SIA "Jacar" car service Viskaļu street 22, Riga;
- SIA "AN dizains" carpenter and metal working Viskaļu street 22, Riga;
- SIA "Winstaco" carpenter and metal working Viskaļu street 22, Riga;
- SIA "Car Point" car service Viskaļu street 20, Riga;

- SIA "Ritols" 3factory Viskaļu street 16, Riga;
- Three storey 13 apartment building Viskaļu street 18, Riga.

# 6. Information about civil protection organisation in the object of increased danger and information about responsible employees and their responsibilities

6.1. Person, who makes decision to start implementation of civil protection plan, activity coordination, accident hazard and risk reduction measure management on Site in case of accident or immediate threat and who is responsible to take actions to eliminate the emergency consequences

Decision to start implementation of civil protection plan in Power plant shall be made by the responsible for Civil protection—TPP technical director.

Activity coordination, accident hazard and risk reduction measure management on Site in case of accident or immediate threat shall be carried out by Riga TPP-1 director.

Riga TPP-1 director is responsible for actions to eliminate the emergency consequences.

### 6.2. Person, who is responsible for daily communication with State Fire and Rescue Service and other institutions and cooperation with aforementioned institutions in case of accident or immediate threat

Riga TPP-1 director is responsible for daily communication with State Fire and Rescue Service and other institutions, phone: (+371) 67723351, e-mail: kanceleja@latvenergo.lv

In case of accident or immediate threat Riga TPP-1 dispatcher is responsible for *cooperation* with State Fire and Rescue Service and other institutions, phone: (+371) 67723353; (+371) 27343263.

### 6.3. Information about employee responsibilities related to civil protection and accident prevention and elimination of consequences in Power plant

Organisation of civil protection is determined by "AS "Latvenergo" procedure for civil protection management".

Employee responsible for organisation of civil protection is Safety director in AS Latvenergo appointed by Order issued by AS "Latvenergo" General director.

Responsible employee duties for civil protection organisation in AS Latvenergo:

- to co-ordinate, control and improve AS "Latvenergo" Civil protection system;
- to organise development and update of internal regulatory enactments necessary for system life cycle;
- in co-operation with other departaments, as well as Operational services, State institutions, Municipalities and National Armed Forces shall ensure implementation of Civil protection activities in AS "Latvenergo" power plants;
- in co-operation with other departaments shall organise not less than once a year staff trainings related to Civil protection issues in AS "Latvenergo" power plants, which has Civil protection plans;

- to organise and provide in co-operation with other departaments the development, reassesment, if necessary, update and not less than once per three years to test preparedness measures of Civil protection plans in objects of increased danger.

Employee responsible for organisation of civil protection is Safety director in Riga TPP-1 of AS Latvenergo appointed by Order issued by AS "Latvenergo" General director.

Responsible employee duties for civil protection organisation in AS Latvenergo power plant Riga TPP-1:

- to manage preventive, response, elimination of consequence measures in power plant, resource management preparedness;
- to arrange staff training related to civil protection issues;
- to arrange and manage incident and elimination of consequence measures, and to organise department work in accordance to the respective department action plans and according to the situation;
- to manage incident command structure response;
- to arrange development of activity plan in case of danger.

Responsible for making the decision for implementation of early warning and informing about incident, emergency and crisis situations or in case of threat is TPP Technical director in Riga TPP-1 of AS Latvenergo appointed by Order issued by AS "Latvenergo" General director.

Duties of responsible employee who makes the decision for implementation of early warning and informing about incident, emergency and crisis situations or in case of threat in objects of increased danger:

- if there is a threat to employee's life or health the decision on evacuation and informing the employees who are in the power plant shall be made immediately;
- if there is a threat to people's life or health who are present in hazard area outside the power plant, or there is a threat to people, environment or property, the decision on informing the people who are in the hazard area shall be made immediately, as well as informing the State and Minicipality institutions.

For implementation of Civil protection activities in incident, emergency and crisis situations in Riga TPP-1 of AS Latvenergo are appointed by Order issued by AS "Latvenergo" General director the following responsible persons (Annex 9):

- TPP-1 Director;
- TPP-1 maintenance department manager;
- TPP-1 operational personnel department manager;
- TPP-1 maintenance department civil engineer.

Duties of responsible persons who implement incident, emergency and crisis situation activities:

- To manage activities of response and elimination of consequences in the power plant, to manage necessary resource preparedness;
- To carry out civil protection training on site for the employees and employees involved in civil protection activities;
- to carry out activities related to incident investigation and eliminate emergency consequences on Site according to their competences and to organise department

works in compliance with respective department action plans and taking into consideration the situation;

- to ensure emergency alert system operability;
- to develop power plant activity plan for incident cases;
- in case of incident to notify Transmission system operator (AS "Augstsprieguma tīkls"), support department, operations department, State institutions and local Government.

### 7. Information about employee training for emergency preparedness, civil protection and first aid

Employee responsible for civil protection in AS "Latvenergo" TPP-1 shall plan and organise employee training in civil protection management. Theoretical training must be provided in accordance to the Cabinet Regulations No.716 "Minimum Requirements for the Content of the Mandatory Course in Civil Protection and the Content of Training of Employees in Civil Protection", and employee shall gain:

- knowledge about object civil protection plan;
- knowledge about possible disasters in the state and its consequences;
- knowledge about state early alert system;
- knowledge about agencies that provides disaster management;
- knowledge about civil protection system;
- first aid skills in critical emergency cases, as well as to call emergency assitance.

Company's employees shall have First aid training in accordance to the Cabinet Regulations No. 713 "Regulations on procedure how the first aid training shall be provided and minimum requirements for first aid kit' adopted on August 3, 2010. The training is arranged in accordance to the established time schedule and provided by certified company.

The company is provided with medical materials necessary for the first aid.

Power plant dispatcher shall call emergency medical assistance by dialing telephone number 113 or 112 in accordance to the TPP-1 dispatcher's notification procedure about accidents, technological failures and events in the power plant.

# 8. Description bout measures that reduce employee risks in their workplaces and other persons that are in the territory of increased danger

### 8.1. Employee warning about threat, notification about actions in case of emergency and disaster, and protection measures to be taken as well as further notification

The power plant dispatcher shall immediately switch on early warning device (alarm siren) when receiving the notification about the threat to TPP-1, that TPP-1 personnel, contractors and visitors can start evacuation from the power plant to safe assembly point.

Employee notification regarding action in the event of an emergency or disaster and protective measures to be taken, shall be done by power plant dispatcher or power plant director

at the personnel assembly point. Further communication with group managers shall be done via radio communication.

- If there is a threat of gas steam cloud explosion from natural gas supply pipeline, TPP-1 dispatcher shall immediately notify adjacent objects about the event:
  - SIA "Baltic Biogran" Ezermalas street 1A, Riga;
  - SIA "Konkas auto" Ezermalas street 1A, Riga;
  - SIA "Eksim Trans" Ezermalas street 1C, Riga;
  - State Police college Ezermalas street 10, Riga;
  - National Defence Academy Ezermalas street 8, Riga;
  - Ministry of the Interior Provision State Agency accommodation Ezermalas street 8A, Riga;
  - SIA "MDT Baltic" Ezermalas street 6, Riga;
  - SIA "Jacar" Viskaļu street 22, Riga;
  - SIA "AN dizains" Viskaļu street 22, Riga;
  - SIA "Winstaco" Viskaļu street 22, Riga;
  - SIA "Car Point" Viskaļu street 20, Riga;
  - SIA "Ritols" Viskaļu street 16, Riga;
  - Three storey apartment building Viskaļu street 18, Riga.

### 8.2. Short desription about employee necessary actions to be taken after notification received

Power plant employees, that are not involved in accident elimination activities, after alarm signal is on or verbal warning received from responsible person shall immediately without panicking leave the power plant building by using the nearest evacuation exits and routes where evacuation is possible or following the responsible person's instructions and shall go to assembly point. Employees, that are involved in fire or accident elimination activities, shall act in accordance to the technological instructions and action plan in case of fire.

### 8.3. Safety measures for employees and other persons that are in the power plant territory

Safety measures for risk reduction of the employees and other persons that are in the power plant shall be considered. The persons shall be instructed about procedure for maintenance, work safety, fire safety and activities to be taken in case of emergency, warning and information sign location inside the power plant and within the territory, prohibition to be in areas where unauthorised persons shall not access, signs about possible evacuation routes in case of emergency, use of respective personal protective equipment.

Employees and other persons performing works, doing inspection and supervision:

- In electrical facilities shall follow the requirements of Latvian Electrotechnical Committee standard LEK 025 "Safety requirements for performing works in electrical facilities";
- In heating facilities shall follow the requirements of Latvian Electrotechnical Committee standard LEK 036, Safety requirements for performing works in heating and gas facilities".

### 9. Emerging threat and external notification event system description by specifying

### 9.1. Emergency and emerging threat registration procedure

Power plant dispatcher in chronological order shall register emergency, emergency threat and its development in TPP-1 operational log book.

### 9.2. Procedure on how the responsible person notifies the State Fire and Rescue Service, respective authority and other institutions about emergency or emerging threat

After receiving an information about emergency or emerging threat the power plant dispatcher shall act in accordance to the incident command structure response, immediately notifies State Fire and Rescue Service by dialing single emergency number 112, by providing the address or location of an emergency or emerging threat and the name, surname of the person calling, as well as shall provide additional requested information about the fire.

### 9.3. Information that shall be included in the initial warning and procedure on how the further information as well as detailed information, as soon as available, is provided

The early warning shall be performed by activation of external alarm-siren (after the power plant dispatcher's command). Sākotnējo brīdinājumu veic iedarbinot ārējo trauksmes signalizāciju-sirēnu (pēc stacijas dispečera komandas). After this personnel shall gather in assembly pints. Further information, as far as possible, shall be provided by power plant dispatcher.

### 9.4. Procedure on how the power plant personnel, sub-contractors, sub-lessees, visitors and also residents are notified

Avārijas vai ārkārtas situācijas gadījumos objekta personālu, darbuzņēmējus un apmeklētājus, kā arī AS "Latvenergo" struktūrvienību un nomnieku darbiniekus, kuras atrodas stacijas ēkās vai teritorijā, tiek brīdinātas iedarbinot ārējo trauksmes signalizāciju- sirēnu. Apkārtnes iedzīvotāji tiek brīdināti iedarbinot ārējo trauksmes signalizāciju — elektrisko trauksmes sirēnu.

In case o fan accident or emergency situation the power plant personnel, contractors and visitors as well as JSC Latvenergo department and lessee employees that are present in the power plant or its territory are notified by switching on external emergency alert systems – siren. Residents living nearby the power plant are notified by using external warning system - civil defense siren.

### 10. Information about activities that

10.1. ensures the restrictions and elimination of an emerging threat, that the threat doesn't turn into emergency situation, but in case of emergency – ensures the restriction,

### control and elimination within the power plant territory of increased danger, as well as to reduce the impact and damage of emerging threat or emergency

To ensure safe generation process, to prevent industrial accidents, but in the event of emergency to restrict, reduce the consequences and successfully to eliminate the following shall be considered:

- Equipment and process maintenance instructions, safety procedures, fire safety and other relevant instructions shall be developed;
- The instructions shall include provisions for employee actions to be taken to exclude the possibility o fan accident;
- The instructions shall include requirements governing the enforcement of labour protection, fire safety and civil protection standards;
- Safety inductions and trainings are arranged regularly to the TPP-1 employees (labour protectio, fire safety, civil protection);
- Action plans in the event of other accidents shall be developed.

Monitoring of technological equipment and processes is carried out regularly. Information about equipment failures/damages shall be recorded in the electronic failure/damage follow-up system. Accordingly steps are taken to eliminate identified failures/damages.

The plan to reduce the risk of industrial accidents 1 for a period of three years shall be developed in TPP-1. At the end of each year documents about equipment technical condition are evaluated and repair schedules prepared.

### 10.2. Related to human and environmental protection in the objects of increased danger in case of emergency

Personal protective equipment (gas masks, footwear, rubber gloves) is used to protect people associated with prevention of emergency consequences.

Information provided in product safety data sheets about product dangerousness and activities to be taken during emergency is considered prior taking actions with hazardous substances and mixtures.

The employees as well as sub-contractors being in the power plant territory shall follow the general fire safety and labor safety requirements, as well as particular requirements for works in specific workplaces. Prior to start the works the employees as well as sub-contractors are informed about particular requirements for works in specific workplaces.

### 10.3. To prevent the spread of emergency consequences outside the object of increased danger

TPP-1 general goal is to prevent or reduce the possibility of emergency or damage due to emergency where due to the properties of an equipment, chemical substances and mixtures used in the power plant can cause damage to environment and human health. Sheltering walls installed at diesel and chemical substance tanks serves as preventive measure for spread of emergency consequences. Diesel sheltering wall is inspected once per 2 years by preparing respective protocol.

To prevent spread of emergency consequences outside the power plan territory the localisation of consequences shall be carried out in emergency zone.

### 10.4. To ensure inhabitant notification and further timely information communication to inhabitants endangered territory where necessary

Right after emergency happened or development of emerging threat the neighbouring companies, inhabitants will be notified via Riga TPP-1 warning system - civil defense siren as well as after evaluation of the situation seriousness, mass notification will be carried out by emergency services (State Fire and Rescues service, Municipal police).

Early alert system is installed on the TPP-1 Unit roof which can be switched on manually from Main control room.

## 10.5. To provide evaluation of polluted environment, sanitary measures and environment recovery in order to mitigate emergency consequence impact on humans and environment

In order to prevent or reduce the risk of damage caused by chemicals and mixtures to the environment, human health and property JSC "Latvenergo" has developed procedure K310 "Procedure for activities with chemical substances and mixtures". In case of any environmental pollution the source of pollution, its amount and significance (hazard) of impact to the environment shall be identified in accordance with the procedure. In the event of pollution the primary caused of pollution is eliminated and further spread of pollution localised.

In the event of emergency the polluted area investigation, rehabilitation and environment restoration shall be carried out in accordance to the Cabinet regulation No.281 adopted on April 14, 2007 "Regulations Regarding Preventative and Rehabilitation Measures and the Procedures for Evaluation of Environmental Damage and Calculation of Costs of Preventative, Emergency and Rehabilitation Measures" requirements. Chemicals or mixtures and contaminated soil, water and absorbents spilled during adverse event and emergency shall be handed over to the certified waste management service and with whom the contract for waste management has been signed.

After rehabilitation measures are taken the responsible person shall inform State Environmental Service in writing regarding measures taken by adding confirmation that measures have been taken in accordance to the decision of State Environmental Servic, including testing reports performed by certified laboratory.

### 11. Detailed description of major measures to be taken in case of emergency

### 11.1. Evacuation procedures

Power plant dispatcher shall organise personnel and contractor evacuation from power plant buildings by indicating, depending on the ievent and place of emergency, the excape routes to be used, as well as taking into account weather conditions in the assembly point. Security officers shall be involved, if required.

Depending on the situation in the power plant, the power plant dispatcher is entitled to determine another assembly point for personnel. There is no transport evacuation available in TPP-1.

#### During evacuation:

- without panic, employees must go to the nearest escape exit through which the evacuation is possible;
- employees must help to evacuate injured persons;
- instructions given by security officers must be followed;
- fire fighting equipment (fire fighting extinguishers, fire-fighting appliances) located in the building shall be used to ensure safe evacuation (burning, collapsed constructions, etc);
- in the event of smoke the person shal get down and crawl along the walls as much as close to the floor;
- in case if there is important information about injured or trapped persons, gas leakage etc, State Fire and Revenue Service personnel must be notified;
- do not stay close to hazardous area if not required.

If possible, TPP-1 employees shall evacuate from building on fire xto the safe place most valuable and important material values and documentation in accordance to the approved evacuation plans.

### 11.2. First aid and emergency care measures for injured persons

The company doesn't have its own medical staff so the company employees are trained in providing first aid in accordance to the 15-hour first aid training program.

The company has first aid kits and necessary medical materials.

Power plant dispatcher shall call emergency medical assistance by dialing 113 or 112 in accordance to the TPP power plant dispatcher notification procedure about events in the thermal power plant.

### 11.3. Maintenance of public order and property security in the object of increased danger

The power plant is equipped with security systems. Based on mutual agreement the Power plant also is controlled by certified physical security.

In case if needed the power plant security may involve 2 security reaction teams from their company.

### 11.4. Providing an alternative energy source

Riga TPP-1 is equipped with power generator. Power generator with diesel engine is foreseen for Riga TPP-1 power supply to main consumer self-consumption, in the event of power outage in sub-station No.6 110 kV busbars and 10 kV auxiliary power supply feeder F-536.

### 11.5. Operation or safe shut down measures of the power plant of increased danger

Power plant control system is intended for Riga TPP-1 Unit operation and safe stop of the Unit.

The task of this system is to control the power plant start up, stop, normal operation and operation during disturbances. The power plant control system task is to ensure monitoring and control of technological equipment.

In addition the operator can send commands Switch on/ Switch off to engines, open/close to valves, create permanent setting values, etc.

In case, if required to stop the equipment immediately, there are emergency buttons on the equipment and in the control room, by pressing the button the equipment is shut down in emergency mode.

### 11.6. Actions to be taken after accident that are needed to prevent, mitigate or significantly reduce accident impact on the people or environment

Successful elimination and reduction of emergency consequences to the people and environment basically is dependent on correct and fast action of power plant personnel on duty:

- to evacuate people from emergency ares;
- to call required service (State Fire and Rescue service, GASO emergency service);
- organisation and provision of first aid to injured;
- to notify adjacent companies and inhabitants about the threat by telephone and activating the siren;
- to stop emergency leakage as much as possible;
- localisation of emergency area;
- to involve other power plant personnel for elimination of an emergency , by using means available in the power plant.

Power plant management shall organise necessary technical (special transport, equipment for substance collection, etc.) materials and labour resources for elimination of an emergency.

# 12. Description about actions for reduction or restriction and situation control of emerging threat or unwanted accident consequence scope or level of heaviness by specifying equipment to be protected or rescued that may be affected by emergency, as well as emergency exits, assembly points, and escape routes and procedures for stopping technological processes, equipment or objects

Initial task for reduction of unwanted accident consequence scope or level of heaviness is care of power plant employee and other person health and life by evacuation of all people from the power plant. For evacuation in all buildings are foreseen evacuation routes, in power plant territory there are 2 assembly points. Emergency exits are marked with evacuation signs.

To prevent the threat to other persons after accident occurred (fire, diesel or chemical substance spill) the restriction of people and vehicle movement in thethreatened territory will be arranged by involvement of State and municipal police personnel. The restriction will be arranged to prevent unauthorised access to enter the power plant in emergency condition.

The correct and safe stop of technological processes shall be carried out by operational personnel- of the power plant. Depending on the situation the power plant equipment may be stopped in normal or emergency mode.

Emergency risk factors and risk assessment is carried out by JSC "Latvenergo" risk assessors, or experts in risk assessment may be involved. JSC "Latvenergo" risk assessors are specially trained company employees with specific requirements for education level and work experience, that are defined by JSC "Latvenergo" "Environment risk assessment methodology".

For the purpose of reducing the accident risks, the following planned measures shall be carried out:

- equipment maintenance in operating condition and their upgrade;
- strict monitoring of implementation of safety instructions and job descriptions;
- employee training and certification;
- registration of accitedents, pollution incidents and analysis of causes;
- regular inspections and sheeduled repairs of the equipment;
- maintenance and security of the territory.

When the emerging threat or emergency case has been identified TPP-1 employees shall immediately notify the power plant dispatcher and their direct manager. To the best of their abilities, they shall prevent the spread of emergency without jeopardizing their safety.

TPP-1 operational personnel actions are to call responsible services, to arrange employee, Constructor employee and visitor evacuation, to collect the information about the number of people employed, to carry out activities for safe mitigation of emergency and emergency consequences.

All power plant equipment shall be protected from emergency, first of all the main to be protected, that generates the power and the heat and are located near potential hazards.

### 13. Description of resources

### 13.1. Resources available in the object of increased danger

#### 13.1.1. Early warning system, communication assurance

Early alert system is installed on the Power plant Unit roof. Early alert system activation button is located in the Main control room. System is activated by power plant dispatcher.

By detecting a fire or emergency, any TPP-1 employee is responsible to notify the power plant dispatcher about fire or emergency.

### 13.1.2. Fire protection and fire fighting systems and equipment 13.1.2.1. Fire detection and alarm systems

Power plant buildings, rooms and comminications are equipped with address and analogue fire detection and alarm equipment that ensures fire detection at its initial stage, transmission of alarm signals about fire and its location, alert commands to notification systems, elevator operation units, for deactivation of relevant ventilation systems and activation of fire fighting systems.

### 13.1.2.2. Stationary fire fighting systems

Technological equipment has following stationary fire fighting systems:

- gas turbine stationary gas (CO<sub>2</sub>) fire fighting systems 2 pcs;
- oil tank under steam turbine stationary sprinkler water fire fighting system;
- diesel reservoir stationary drencher foam fire fighting system.

#### 13.1.2. Fire extinguishers and inventory

In TPP-1 buildings there are fire extinguishers and inventory available in accordance to the Fire safety regulation requirements, amount of fire extinguishers is chosen depending on the room fire protection level, area and required fire fighting capability. In addition to the fire extinguishers there is also necessary fire fighting inventory.

Maintenance of extinguishers on contractual basis is carried out by certified company.

#### 13.1.3. Personal protective equipment and procedure for use

TPP-1 employees at their disposal have appropriate personal protective equipment depending on their specific work tasks.

### 13.1.4. List of materials for the First aid and their location in the power plant

In case of accident at work with TPP-1 employee(-s) first aid care shall be provided by power plant employees or contractor employees.

After the emergency medical service has been called an emergency care to RHPP employee(-s) is provided by emergency medical service personnel.

Injured person evacuation from accident area to hospital is carried out by State emergency medical service with their transport. Identification of deceased and evacuation of remains from the accident area shall be performed and organised by State Police.

### 13.1.5. Machinery, vehicles, tools, special wear or material reserve

Resources available TPP-1 for elimination of emergency consequences are insufficient. If necessary machinery can be requested from other JSC "Latvenergo" departments.

## 13.1.6. Emergency spread control equipment, emergency leak collection equipment and tanks, defensive walls, emergency pollution detection equipment and other equipment for people safety and environment protection

Technological equipment where dangerous chemical substances and products are used are equipped with substance collection tanks for emergency cases.

Materials necessary to prevent environmental pollution are stored in the power plant.

### 13.2. Resources to be supplied by other merchants in accordance to the cooperation and mutual assistance agreement as well as the time within which the respective resources can be received

In the event of lack of internal resources it is intended to use companies, which has existing contracual obligations for performance of maintenance works, human resources and machinery.

For collection and disposal of hazardous substances it is foreseen to involve other companies, with whom the contracts are signed and are valid.

# 14. Information about the response time for State Fire and Rescue Service and other emergency services from the time of call to the arrival to the place of incident

In accordance to the Clauses 6 and 7 of the Cabinet Regulations No.297 "Procedures by which the State Fire and Rescue Service Performs and Manages the Fire-fighting and Rescue Operations" Adopted on 17 May 2016, where it is stated that the subunit of the State Fire and Rescue Service after departure from the nearest fire station shall arrive to the Riga TPP-1 territory within 8 minutes. The time of arrival may be longer if the arrival has been delayed by *force majeure* circumstances, a natural or man-made disaster has occurred, several notifications of several events within the region for which the fire station or post is responsible have been received or on the way to the place of the event traffic complications have occurred or received notification of an event is not related to a fire and the human life or health is not at risk.

In accordance to the Clause 122 of the Cabinet Regulations No.555 "Procedures for the Organisation of and Payment for Health Care Services" Adopted on 28 August 2018, where it is stated that the Teams of the State Emergency Medical Service in Riga TPP-1 territory after receipt of emergency call in 75 % of cases emergency medical assistance is provided within 12 minutes from the time of receipt of the call.

# 15. Procedure regarding assistance to be provided to the State Fire and Rescue Service and activities to be performed outside the power plant territory for elimination of emergency dangerousness or consequences

Power plant dispatcher shall meet the subunit of the State Fire and Rescue Service at the entrance to the power plant territory as well as Power plant dispatcher shall stop the necessary equipment, disconnect the power source, and distribute the dielectric personal protective equipment (mobile earthing and dielectric gloves) to the subunits of the State Fire and Rescue Service.

Power plant dispatcher shall introduce the Rescue service manager with available operational information in place of incident and labour protection activities, instructs about fire fighting and rescue activities in the electrical facilities, and issues written permit for fire fighting and rescue activities.