

Internal security | Publications of the Ministry of the Interior 2020:7

# Instructions for external emergency plan exercises

Publications of the Ministry of the Interior 2020:7
Instructions for external emergency plan exercises Anna-Mari Kosunen, Mika Kurvinen, Seppo Lehto, Mirja Palmén, Hannu Timonen, Mika Tirroniemi

Ministry of the Interior

ISBN: 978-952-324-617-1

Layout: Government Administration Department, Publications

Helsinki 2020

### **Description sheet**

Published by	Ministry of the Interior		25 March 2020		
Authors	Anna-Mari Kosunen, Mika Kurvinen, Seppo Lehto, Mirja Palmén, Hannu Timonen, Mika Tirroniemi				
Title of publication	Instructions for external	Instructions for external emergency plan exercises			
Series and publication number	Publications of the Ministry of the Interior 2020:7				
Register number	SM031:00/2018, SMDno 2018-2173	Subject	Internal security		
ISBN PDF	978-952-324-617-1	ISSN (PDF)	2490-077X		
Website address (URN)	http://urn.fi/URN:ISBN:97	78-952-324-617-1			
Pages	20	Language	English		
Keywords	external emergency plar emergency plans	n, external emergency plar	n exercise, major accidents,		

#### Abstract

Under section 48 of the Rescue Act (379/2011) and the decree of the Ministry of the Interior on external emergency plans, rescue departments must organise exercises at least once every three years at high-risk sites such as production plants, railway yards and ports that handle and stockpile dangerous chemicals as well as at nuclear power plants and facilities for extractive waste. Finland has about 200 sites that are required to draw up an external emergency plan and to practise for emergencies regularly.

These instructions streamline and clarify the planning, implementation, evaluation and reporting of exercises on external emergency plans for sites under section 48 of the Rescue Act. The instructions use the term external emergency plan exercise.

Rescue departments are responsible for drawing up external emergency plans and for organising external emergency plan exercises and they are carried out in cooperation with the operator. The Regional State Administrative Agencies are responsible for supervising that these requirements are met. Finland is obliged to report on such plans and exercises to the European Commission under the Seveso III Directive and the Mining Waste Directive.

To complete the exercise, the external emergency plan exercise process includes several stages. The process includes several stages, namely planning, preparation and implementation of the exercise as well as development measures. These instructions serve to harmonise rescue departments' exercise activities related to the external emergency plans and to clarify the requirements for the exercises.

Publisher	Ministry of the Interior
Distributed by/	Online version: julkaisut.valtioneuvosto.fi
publication sales	Publication sales: vnjulkaisumyynti.fi

### Kuvailulehti

Julkaisija	Sisäministeriö	25.3.2020				
Tekijät	Anna-Mari Kosunen, Mika Kurvinen, Seppo Lehto, Mirja Palmén, Hannu Timonen, Mika Tirroniemi					
Julkaisun nimi	Ulkoisten pelastussuunnitelmien harjoitusohje					
Julkaisusarjan nimi	Sisäministeriön julkaisuja					
ja numero	2020:7					
Diaari/hankenumero	SM031:00/2018,	Teema	Sisäinen turvallisuus			
Diaan/nankenumero	SMDno 2018-2173	теетта	Sisailleil turvallisuus			
ISBN PDF	978-952-324-617-1	ISSN PDF	2490-077X			
URN-osoite	http://urn.fi/URN:ISBN:978-952-324-617-1					
Sivumäärä	20	Kieli	englanti			
Asiasanat	ulkoinen pelastussuunnitelma, ulkoisen pelastussuunnitelman harjoitus, UPS-harjoitus, suuronnettomuudet, pelastussuunnitelmat					

#### Tiivistelmä

Pelastuslain (379/2011) 48 § ja ulkoisia pelastussuunnitelmia koskevan sisäministeriön asetuksen mukaan pelastuslaitoksen tulee harjoitella vähintään kolmen vuoden välein suuronnettomuusvaarallisissa kohteissa, kuten vaarallisia kemikaaleja käsittelevät ja varastoivat tuotantolaitokset, ratapihat ja satamat sekä ydinvoimalaitokset ja kaivannaisjätealueet. Suomessa on noin 200 kohdetta, joissa on velvoite laatia ulkoinen pelastussuunnitelma ja harjoitella säännöllisesti.

Tämä ohje yhdenmukaistaa ja selventää pelastuslain 48 § mukaisten kohteiden ulkoisia pelastussuunnitelmia koskevien harjoitusten suunnittelua, toteuttamista, arviointia ja raportointia. Ohjeessa käytetään harjoituksesta termiä UPS-harjoitus.

Ulkoisen pelastussuunnitelman laatiminen ja UPS-harjoitusten järjestäminen ovat pelastuslaitoksien vastuulla ja ne toteutetaan yhteistoiminnassa toiminnanharjoittajan kanssa. Aluehallintovirastojen tehtävänä on valvoa velvoitteiden toteutumista. Suomella on velvollisuus raportoida suunnitelmista ja harjoitustoiminnasta EU komissiolle sekä Seveso III -että kaivannaisjätedirektiivien perusteella.

UPS-harjoitusprosessi sisältää useita eri vaiheita harjoituksen läpiviemiseksi. Harjoitusprosessi muodostuu harjoituksen suunnittelusta, valmistelusta, toteutuksesta ja kehittämistoimenpiteistä. Ohjeen tavoitteena on yhdenmukaistaa pelastuslaitoksien ulkoisia pelastussuunnitelmia koskevaa harjoitustoimintaa sekä selventää harjoitusten vaatimuksia.

Kustantaja	Sisäministeriö
Julkaisun	Sähköinen versio: julkaisut.valtioneuvosto.fi
jakaja/myynti	Julkaisumyynti: vnjulkaisumyynti.fi

### Presentationsblad

Utgivare	Inrikesministeriet	25.3.2020			
Författare	Anna-Mari Kosunen, Mika Kurvinen, Seppo Lehto, Mirja Palmén, Hannu Timonen, Mika Tirroniemi				
Publikationens titel	Anvisning om övningar enligt externa räddningsplaner				
Publikationsseriens	Inrikesministeriets publikationer				
namn och nummer	2020:7				
Diarie-/	SM031:00/2018,	Tema	Inre säkerhet		
projektnummer	SMDno 2018-2173	iema	inre sakernet		
ISBN PDF	978-952-324-617-1	ISSN PDF	2490-077X		
URN-adress	http://urn.fi/URN:ISBN:978-952-324-617-1				
Sidantal	20	Språk	engelska		
Nyckelord	extern räddningsplan, övning enligt extern räddningsplan, storolyckor, räddningsplaner				

#### Referat

Enligt 48 § i räddningslagen (379/2011) och inrikesministeriets förordning om externa räddningsplaner ska räddningsverket med minst tre års mellanrum öva i objekt med risk för storolycka. Sådana objekt är t.ex. produktionsanläggningar för hantering och upplagring av farliga kemikalier, bangårdar, hamnområden, kärnkraftverk och deponier för utvinningsavfall. I Finland finns det ca 200 objekt som är skyldiga att göra upp en extern räddningsplan och öva regelbundet.

Genom anvisningen förenhetligas och förtydligas planeringen, genomförandet, utvärderingen och rapporteringen av övningar som gäller externa räddningsplaner i objekt enligt 48 § i räddningslagen. I anvisningen kallas övningen på finska UPS-harjoitus (övning enligt extern räddningsplan).

Räddningsverken ansvarar för uppgörandet av externa räddningsplaner och ordnandet av övningar enligt extern räddningsplan, detta i samarbete med verksamhetsidkaren. Regionförvaltningsverken har till uppgift att övervaka att skyldigheterna fullgörs. Finland har enligt Seveso III-direktivet och direktivet om hantering av avfall från utvinningsindustrin en skyldighet att rapportera om planerna och övningsverksamheten till Europeiska kommissionen.

För att genomföra övningarna enligt externa räddningsplaner finns det flera skeden i processen. Övningsprocessen består av planering, beredning och genomförande av övningen samt av utvecklingsåtgärder. Syftet med anvisningen är att förenhetliga övningsverksamheten enligt räddningsverkens externa räddningsplaner och att förtydliga kraven på övningar.

L		
	Förläggare	Inrikesministeriet
	Distribution/	Elektronisk version: julkaisut.valtioneuvosto.fi
	beställningar	Beställningar: vnjulkaisumyynti.fi

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# 1 External emergency plan exercise process and its goals

The goals set for an external emergency plan exercise should be kept in mind throughout the exercise process. When each participant is familiar with the main features of the exercise process and its goals, the exercise is motivating and rewarding. A clear and logically processing exercise process makes planning and implementing an external emergency plan exercise quicker and easier.

### 1.1 Exercise process

An external emergency plan exercise is a process of 9 to 15 months in duration. It is divided into the planning and preparation stage before the exercise, the actual exercise, and the evaluation and development stage after the exercise. The times suggested in this document are indicative and give an idea of the time frame for completing an exercise. Figure 1 shows the stages of the exercise process. For a detailed description, see below in this document.

PLANNING AND PREPATATION STAGE			IMPLEMENTATION STAGE		EVALUATION AND DEVELOPMENT STAGE		
- 1 month	0 months	1 to 6 month	6 months		7 months 9 months		9 to 15 months
Advance preparations	Kick-off meeting	Preparation stage	External emergen exercise	cy plan	Exercise evaluation stage		Development measures
			Command post	Operational	Feedback	Reporting	

Figure 1. The external emergency plan exercise process.

## 1.2 Exercise goals

The goals of an external emergency plan exercise are to improve the authorities' and operators' capabilities for collaboration as well as the site's safety competence and arrangements.

The exercise should cover the following themes:

- initial response actions
- cooperation
- incident command
- communications
- effectiveness of internal and external rescue plans.

In addition to the general goals, each participating organisation determines its specific objectives.

On sites located within the same area ('domino sites'), selecting several exercise forms is recommended, making it easier to include exercises that benefit each operator in the overall plan.

# 2 Planning and preparation stage of an exercise

The planning and preparation stage of an external rescue plan exercise lays the foundation for the entire exercise process. This stage also plays an important role in the learning and development process related to the exercise.

### 2.1 Advance preparations

The purpose of advance preparations is to pave the way for a successful kick-off meeting and the actual preparations for the exercise. An exercise leader appointed by the rescue department contacts the operator to make arrangements for launching the preparations. The following advance preparations are part of the exercise process:

- The operator is informed of their duty to organise an external emergency plan exercise, and a date is picked for the kick-off meeting.
- The form and scope of the exercise, a scenario based on the safety report
- as well as the organisations to be invited to the kick-off meeting are determined roughly with the operator.
- An advance notification of the kick-off meeting is given to the partners as
- well as the supervisory authorities well ahead of its date.
- The parties familiarise themselves with the report on a previous external emergency plan exercise and major accident risks (e.g. external emergency plan, internal rescue plan), completed emergency response tasks and safety incidents.
- An invitation and an agenda are prepared for the kick-off meeting, and they are sent to the organisations as agreed (Appendix 1).

When determining the organisations participating in the planning and the actual exercise, the site's location, operations and risks as well as the accident scenario of the exercise and the exercise form are always taken into consideration. Figure 2 contains examples of organisations participating in the exercise.

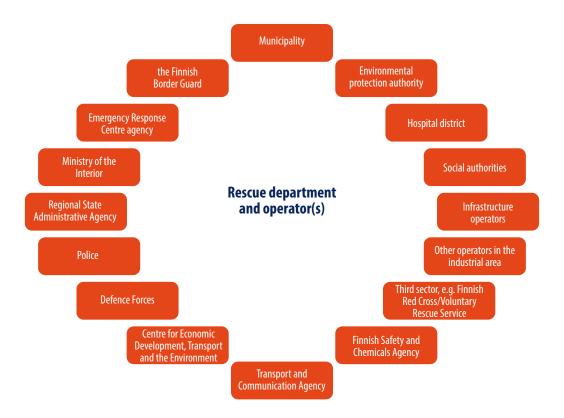


Figure 2. Examples of organisations participating in an exercise.

### 2.2 Kick-off meeting

At the kick-off meeting, collaborative preparations for the exercise are launched together with a preparation group representing the different organisations. The meeting is chaired by a representative of the rescue department. The kick-off meeting should cover the following items:

- introduction to the exercise process (Appendix 2)
- assessing the implementation of the development measures determined following the previous external emergency plan exercise
- planning the exercise scenario and forms
- exercise goals

- work plan for the exercise process (including timeline, visits to the site, estimated resources)
- identifying persons responsible for the exercise
- deciding on the date/s of the exercise
- using the following format when naming the exercise is recommended: 'External emergency plan exercise - site - year', for example 'External emergency plan exercise Vuosaari Harbour 2019'
- determining the needs for training prior to the exercise
- tasks to be completed before the following meeting.

### 2.3 Exercise preparation stage

In the preparation stage, three to five planning meetings as well as the required number of other meetings related to the preparations are usually organised. These meetings may, for example, be training sessions preceding the exercise or concern preparations for simulating an accident situation. A memorandum is produced on each preparation meeting and distributed to the exercise working group, the Regional State Administrative Agency and the supervisory authorities responsible for the site. The meeting memorandum should itemise the participants, completed and new tasks, other decisions made at the meeting, and the date of the following meeting. A template for meeting memorandums is attached to this document (Appendix 3).

After the kick-off meeting, the preparation stage tasks include:

- requesting a preliminary assessment of the exercise scenario and form from the Regional State Administrative Agency
- setting the goals of the exercise
- planning and preparing the exercise scenario
- arranging the training sessions and site visits associated with the exercise
- preparing an exercise plan; a plan template is attached (Appendix 4)
- preparing a cost estimate (recommendation)
- identifying the risks and hazards of the exercise (recommendation)
- practical arrangements of the external emergency plan exercise (Appendix 5).

# 3 Implementation stage

The preparations lead up to an external emergency plan exercise. The exercise produces information about different operators' practices, builds up cooperation, helps to identify important development areas, and highlights shortcomings in safety plans, practices and equipment. The aspects that must be practised in the external emergency plan exercise include initial response actions, cooperation, incident command and communications. For details of these aspects, see Table 1.

Table 1. Objectives and contents of an external emergency plan exercise

<b>Objective</b>	Content			
Initial response actions	Initial response actions of the operator's personnel on the scene Launch of command team's work			
Cooperation	Launching rescue activities together with the operator Inter-authority cooperation See Figure 2.			
Command	Command team work Command of rescue activities (incl. Command Centre, Situation Centre) Operator's situation management (e.g. process, logistics, personnel)			
Communications	Public emergency announcements Operator's internal communications Internal communications of the rescue sector (incl. reporting in compliance with the valid instructions issued by the Ministry of the Interior/Regional State Administrative Agency) External information activities and communication (incl. controlling misinformation)			

External rescue plan exercises can be organised and carried out in several different ways, accounting for the site's specific features, risks and operation. If a rescue department organises several external rescue plan exercises in the same calendar year, these exercises may share some parts, including seminars as well as training and practice events.

External rescue plan exercises can be implemented in different ways, including multiform exercises, tabletop exercises, operational field exercises and development seminars. In a multi-form exercise, events of different types and forms can be combined into a single external emergency plan exercise. The exercise plan should indicate which parts constitute the external emergency plan exercise. If an exercise focuses on one or several areas instead of constituting an operational field exercise, the areas that receive less attention should be addressed in the site's following external emergency plan exercise. See Table 2 for a more detailed introduction to various exercise forms.

Table 2. Forms of external emergency plan exercises

EXERCISE FORMS	CONTENT	EXAMPLES/APPLICATIONS	
OPERATIONAL FIELD EXERCISE	A comprehensive exercise that comprises all areas.     General command     Multi-authority activities     Command Centre's and Situation Centre's roles     At minimum a company-level exercise     Operator's initial response actions, for example issuing an internal emergency alert and taking cover, rescue, process control     Local government activities	personnel and industrial estates. In the area of the exercise focusing on command, virtual units	
DEVELOPMENT SEMINAR DAY(S)	Rescue departments, operators, other authorities and safety organisations come together to consider actions for developing the site's safety and its future challenges, changes and threats.	Development seminar themes may include: Risks/threats relevant to the production area Safety and fire extinguishing systems Requirements of the external emergency plan exercise, internal rescue plan and Seveso Directive Extreme weather events caused by climate change (extensive wildfires caused by drought, storms and floods, periods of very low temperatures) Long-standing disruptions, including power cuts and telecommunications outages Cyber threats Oil and chemical vessel disasters.	
MANAGEMENT EXERCISE (Tabletop exercise)	In a tabletop exercise, the participants practise for an emergency in simulated conditions, using virtual resources and following a script prepared in advance. This type of exercise can help to ascertain the effectiveness of an external and internal rescue plan.	Highly suitable for practising for long-standing situations and all types of sites but particularly warehouses and extractive waste facilities.	
MULTI-FORM EXERCISE  Includes several different areas linked to the exercise scenario.  A multi-form exercise must cover at least three areas.	Actions indicated by the site-specific rescue plan as separate exercises, for example giving the alarm, fire extinguishing systems, initial response actions.	An example of a multi-form exercise: The scenario is an engine room fire on a large cargo ship in a port area.  The exercise consists of:  1. A training day on extinguishing a fire on a ship  2. Several different operational exercises in the port area  3. Site visits.  4. Initial response actions in case of an acciden as set out in port operators' internal rescue plans, internal information flows, fire extinguishing systems and taking cover	
	Site visits which cover the site's risks, operation and safety systems.		
	Several different operational exercises.		
	Training events relevant to the site's risks.		
	Exercises specific to the different stations of the rescue department personnel.		

After an external emergency plan exercise, a short debriefing is organised with key operators, in which each participant can bring up the most important development areas identified during the exercise.

# 4 Evaluation and development stage

The evaluation and development stage is launched after the exercise by collecting written feedback from the participants and observers. The compatibility and usability of the internal and external rescue plan are assessed based on the feedback, and key development areas are identified. An exercise report is drawn up on the basis of the conclusions made in the evaluation stage and submitted to the Regional State Administrative Agency.

The evaluation of the exercise process is part of the rescue department's self-evaluation and stakeholders' peer evaluation, the purpose of which is to improve the work of the rescue department as the implementer of the exercise process.

### 4.1 Feedback event

The purpose of collecting feedback is to assess how well the goals set out in the exercise plan were attained and the exercise process implemented.

National and local perspectives should be taken into account when formulating the feedback questions, and more detail related to specific exercises may be added to the questions. To examine the national perspective, any development areas related to communications, incident command and equipment should be covered, among other things. The questions concerning the local level may focus on preparations for the exercise, initial response actions on site, rescue activities and their command, cooperation, communications, equipment, emergency medical services, information activities and the operation of the command team.

Feedback collection may be based on an electronic survey platform, and either openended or multiple choice questions may be used. Feedback provided at the debriefing and collected after the exercise is summarised and discussed at the feedback event. The feedback event should be attended by representatives of the participating organisations and the relevant authorities. The event is organised at the latest one month after the exercise. Development measures, the time frame for their implementation and the parties responsible for the measures are decided at the event.

### 4.2 Reporting

The rescue department and the operator must jointly prepare a report on the exercise (Appendix 4) within three months. The report should contain at least the following:

- A short description of the planning process of the major accident exercise
- and the parties involved in it
- The dates on which the exercise was planned and implemented
- A description of the contents of the exercise, its participants and its implementation
- Key observations on the exercise and the implementation of any development measures
- Needs to update the internal and external rescue plan
- Training events organised.

The exercise report should be prepared in compliance with the Act on the Openness of Government Activities (621/1999) and the EU General Data Protection Regulation.

The rescue department must save the exercise reports of Seveso installations required to produce safety reports to the KEMU register maintained by the Finnish Safety and Chemicals Agency. The rescue department also forwards the exercise report to the participants and the Regional State Administrative Agency for their information. The Regional State Administrative Agency's evaluation criteria are attached (Appendix 7).

## 4.3 Development stage

The development stage of the exercise is launched after the feedback event once the development areas have been identified and a plan for the required measures has been drawn up. The development stage consists of implementing and monitoring the development measures. For example, the monitoring can take place at a follow-up meeting organised six to nine months after the exercise, at which the implementation of the selected development measures is evaluated. If the development measures have not been completed, the reason for this is established, and further measures are decided on.

# **Appendices**

Appendix 1	Invitation and agenda of the kick-off meeting
Appendix 2	Presentation for a kick-off meeting
Appendix 3	Meeting memorandum
Appendix 4	Exercise plan and report template
Appendix 5	<u>Check list</u>
Appendix 6	Feedback survey on an external emergency plan exercise
Appendix 7	Evaluation of an external emergency plan exercise



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