



Report of the State Comptroller of Israel | March 2022

Israel Defense Force

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# **Preparedness for Damage to Hazardous Materials Facilities during Combat Events**





## Preparedness for Damage to Hazardous Materials Facilities during Combat Events

### Background

Throughout the State of Israel, there are thousands of facilities where hazardous materials (HAZMAT) are stored. Some of them are located near dense population centers. These facilities are under security threats dealt with by the state. A HAZMAT incident may be a leak, fire, spill, or release of hazardous materials that were not designed to be carried out in the normal processing or production process. A HAZMAT incident may occur, among other things, due to combat, constituting a hazard to human life and the population's health in its surroundings. In addition, such events might destroy buildings, vital national infrastructure, and cause environmental harm, including air pollution to residential areas, agriculture, and water. A HAZMAT incident might undermine the functional continuity of the economy, for example, in the evacuation of the population, disruption to the operation of vital infrastructures, and blocking of main transportation routes. The risk of severe economic damage due to a HAZMAT incident should be added to all of these.



## Key figures

<b>Approx. 3.2</b>	<b>3,700</b>	<b>hundreds</b>	<b>Approx. USD 4.5 billion</b>
million inhabitants in Israel (maximum assessment) live in areas <sup>1</sup> in which there is a risk of harm to health for unprotected people in open areas during a HAZMAT incident <sup>2</sup>	number of HAZMAT holders of which the Home Front Command (HFC) is in charge of reducing the impacts of a HAZMAT incident in their facilities during combat	hits of missiles and rockets expected during combat on civilian home front in Israel according to an analysis performed by the HFC in July 2016 regarding the IDF's reference scenario for the home front	is a financial damage assessment of the HAZMAT incident in the port of Beirut, Lebanon in August 2020 according to online publications
<b>25%</b>	<b>6</b>	<b>30 – 40</b>	<b>12%</b>
rate of HAZMAT holders who have not reported of their possession to the HFC in 2019 (921 out of 3,686 holders) according to HFC reports, in 2020 this rate was – 2%	out of nine fire stations with HAZMAT units are not in compliance with the training objective determined by the National Fire and Rescue Authority	minutes is the response time of the National Fire and Rescue Authority's HAZMAT unit in a HAZMAT incident	rate of firefighters in the National Fire and Rescue Authority with HAZMAT monitoring capability (200 out of 1,681 firefighters)

## Audit actions



From November 2019 to October 2020, the State Comptroller's office conducted an audit on preparedness for damage to HAZMAT facilities during combat events. Actions to complete the audit were performed until December 2020. The audit was conducted in the Home Front Command (HFC), the National Emergency Authority, the Israel Fire and

- 1 In proximity to population threatening facilities (protected) and in proximity to facilities with potential risk to the population (that do not require protection).
- 2 This assessment encompasses all inhabitants within all risk areas, including inhabitants counted several times due to overlap of risk areas of various facilities.



Rescue Services, the Israel Police, the Ministry of Environmental Protection, the National Cyber Directorate, and the National Security Council. Supplementary examinations were performed in the planning and intelligence departments in the IDF.

This report was submitted to the prime minister and the State Control Committee of the Knesset on May 30, 2021. Confidentiality was imposed on the report until the subcommittee of the State Control Committee of the Knesset convened.

Under the authority given to the State Comptroller under Section 17(c) of the State Comptroller Law 1958 [Consolidated Version] and taking into account the government's arguments, and after consulting with the bodies in charge of the protection of national security information and coordination with the Chairman of the Knesset, and since the stated subcommittee failed to convene, it was decided to publish this report while imposing confidentiality on sections of it. These sections shall not be submitted to the Knesset, nor shall they be published. The findings of the audit report and its recommendations are valid as of the above date of its presentation.

## Key findings



**Update of the IDF reference on home front threat** – the current threat reference to the home front is valid from 2016, according to which tens of thousands of missiles and rockets<sup>3</sup> or other weapons are expected to be fired on the Israeli home front from countries and hostile elements, as part of a multi-front war. The IDF planning department has not yet finished forming the reference threat to the home front, and the National Emergency Authority has not yet finished updating the aggregate reference threat to the civilian arena, among other things, since the IDF has not yet approved the reference threat to the home front.



**Preparation of an aggregate risk survey** – the Ministry of Environmental Protection has not yet completed the second stage of the aggregate risk survey for Haifa Bay, dealing, among other things, with the war scenario.



**Unmanned aerial vehicle (UAV) threat** – specific gaps were found.










**Preparedness for cyber threats** – except for a reference scenario prepared once a year by the National Cyber Directorate for critical national infrastructures (as stated to the State Comptroller's office), the National Cyber Directorate and Ministry of

3 Ground to ground missiles, ground to ground rockets, and mortar shells.



Environmental Protection have not prepared a reference scenario for the cyber threat about facilities holding HAZMATs that are not critical national infrastructure bodies.

-  **Update of toxins permits** – in 2018–2020, the Ministry of Environmental Protection renewed 21 toxin permits (in 2015 it renewed another permit) out of hundreds of applications from holders of HAZMAT to update their toxins permit, from the aspect of quantities or materials. This, without the HFC reviewing applications that include additional quantity or change in the type of HAZMAT at the facility that require the check of protection requirements in the facility, thus without complying with the information procedure.
-  **The establishment of a National HAZMAT System** – the Ministry of Environmental Protection's has been working to establish the national HAZMAT system for about 14 years, since the publishing of the Shafir Report in 2007, which was adopted by the Ministry of Environmental Protection. Moreover, at the audit end, even though a pilot for the system had begun in 2019–2020, the system had not yet been completed, and no schedule for its establishment was determined.
-  **Fitness of HFC battalions** – the HFC does not have complete data on the battalions' fitness in a rescue in a HAZMAT incident outline, according to all fitness components of this outline required to determine the scope of training and exercises of the forces to maintain their operational fitness.
-  **Preparedness of National Fire and Rescue Authority forces for handling HAZMAT incidents** – six out of nine firefighting stations with HAZMAT units do not comply with the training objective determined for firefighters to handle HAZMAT incidents, and only 200 out of 1,681 firefighters have HAZMAT monitoring capability. In addition, the initial response time of regular firefighting teams set by the National Fire and Rescue Authority as an objective in HAZMAT incidents as well (up to 15 minutes) is longer than that commonly accepted abroad (seven minutes) and contingent upon the establishment of additional firefighting stations.
-  **Preparedness of police forces for dealing with HAZMAT incidents** – there is concern that the police, which have an essential role in rescuing injured from HAZMAT incident zones, will not be available for rescue operations at the required schedule according to HFC commands.
-  **Regulating emergency teams** – regulating the obligation of HAZMAT holders to maintain emergency teams is based on the toxins permit rather than mandatory regulations. Furthermore, toxins permits given to plants holding HAZMATs stipulate that the emergency team include at least two people, irrespective of the size of the plant, its classification, and the degree of risk to the population and the environment.
-  **Participation of local authorities in National Fire and Rescue Authority training** – in 2017–2018, no local authority has participated in the training provided by the



National Fire and Rescue Authority. In 2019 only three authorities participated in the training.



**Comparison of data in the Ministry of Environmental Protection and the Home Front Command regarding HAZMAT holders** – the State Comptroller's office performed a computerized comparison between the data in the Ministry of Environmental Protection database and the HFC regarding 278 HAZMAT holders, classified by the Ministry of Environmental Protection as Level A – the highest level of risk to humans and environment. The examination noted negligible differences between the data found in the Ministry of Environmental Protection databases and the Home Front Command regarding 39 HAZMAT<sup>4</sup> holders, that do not affect the need for protection of the facilities.

## Key recommendations

- 💡 It is recommended that HFC examine from time to time the data on the threat of UAVs and its implications regarding HAZMAT plants in various areas of Israel, especially those defined by HFC as holding population-threatening HAZMATs and those defined as a potential risk to the population. This is to determine the suitable protection for them and thus reduce the risk of HAZMAT incidents due to direct hits by armament launched from UAVs.
- 💡 It is recommended that the National Cyber Directorate prepare a national level reference scenario. Accordingly, the Ministry of Environmental Protection should prepare a reference scenario regarding HAZMAT plants cyberattacks, thus optimizing their preparedness. If needed, they may seek assistance from the National Emergency Authority and the IDF in preparing the reference scenario.
- 💡 It is recommended that the National Emergency Authority and the Ministry of Environmental Protection complete a consolidated guideline to improve the coordination and cooperation in dealing with HAZMAT incidents. As part of forming the consolidated national guideline, it is recommended to consider reducing regulation and consolidating authority.
- 💡 The Ministry of Environmental Protection should submit by the regional HAZMAT superintendents to HFC all applications to change HAZMAT type or additional amounts of HAZMATs held by them. Thus ensuring compliance with the work procedures between

<sup>4</sup> The data on the remaining facilities are the same.



the Ministry of Environmental Protection and HFC, not to issue any toxin permits without the HFC review.



It is recommended that the National Fire and Rescue Authority, in cooperation with the Ministry of Public Security, examine its overall preparedness, including response time to HAZMAT incidents, and closing of operational gaps in detecting, identifying, and monitoring, and thus responding to HAZMAT incidents with emphasis on incidents during combat.

### Areas of responsibility of the main bodies dealing with HAZMAT incidents



#### Plant response team

In charge of handling HAZMAT incidents until the arrival of National Fire and Rescue Authority, Home Front Command, and Israel Police forces; providing relevant information to the emergency services and assisting them upon arrival at the site.



#### The Israel Police

The Israel Police is in charge among other things of setting up unified tactical headquarters, controlling traffic for arrival and evacuation and assisting in the rescue and evacuation of injured.



#### The Ministry of Environmental Protection

The national professional guide on HAZMAT affairs to all state authorities and plants in possession of HAZMAT facilities in routine and emergencies; holds the authority for regulation, licensing supervision and enforcement regarding toxins permits for holders of HAZMAT.



#### Home Front Command

Guiding on protection of HAZMAT facilities, tracking of civilian bodies in possession of HAZMAT, performs supervision and control over them. This is in addition to its roles on the home front under the law in routine and emergencies.



#### National Fire and Rescue Authority

Holds the authority and responsibility for immediate response to HAZMAT incidents and serves as an auxiliary organization or rescue body pursuant to the provisions of the law.

Source: State Comptroller of Israel.





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## Summary

Preparedness for damage to HAZMAT facilities during combat requires coordination, cooperation, and preparation from many different bodies. This audit found deficiencies in the bodies' preparedness for emergencies and dealing with HAZMAT incidents in real-time. The State Comptroller's office sees the importance of rectifying the deficiencies while implementing the recommendations noted in this report to reduce as much as possible the risks posed by HAZMAT incidents caused by acts of war and the damage caused by such events. All bodies involved should rectify the deficiencies, each under its responsibility. And the Ministry of Environmental Protection the national professional as a guide on HAZMAT affairs, should monitor the needed rectifications noted in the report.