



# **REPUBLIC OF BULGARIA**

## **MINISTRY OF ECONOMY**

**NATIONAL PROGRAM ON THE IMPLEMENTATION OF MEASURES  
ON THE CONVENTION OF THE PROHIBITION OF THE USE,  
STOCKPILING, PRODUCTION AND TRANSFER OF A P M's AND ON  
THEIR DESTRUCTION**

**ANTI-PERSONNEL FRAGMENTATION MINES'  
DESTRUCTION**

*SOFIA – GENEVA*

*MAY, 2003*

# **I N T R O D U C T I O N**

**Several acts of the Bulgarian authorities are the legal basis of the National program on the destruction of the stockpiled anti-personnel fragmentation mines:**

- Law on the Ratification of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, adopted by the National Assembly on 29.07.1998 (State Gazette No.93/11.08.1998);

# **I N T R O D U C T I O N**

- Decree No.271/17.12.1998 of the Council of Ministers of the Republic of Bulgaria on measures of trade policy regarding the import and export (State Gazette No. 152/22.12.1998);
- Decision No.569/10.08.1999 of the Council of Ministers of the Republic of Bulgaria on the creation of a Governmental Working Group for co-ordination of the implementation measures by Bulgaria in conformity with the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction.

# **I N T R O D U C T I O N**

- Decision of the Council of Ministers of the Republic of Bulgaria, protocol No.14, p.14, 16.9.99 on the adoption of a National program for the implementation measures by Bulgaria in conformity with the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction.

In accordance with Article 7.1 "Each State Party shall report to the Secretary-General ... on:

- f) The status of programs for the destruction of anti-personnel mines in accordance with Articles 4 and 5, including details of the methods which will be used in destruction, the location of all destruction sites and the applicable safety and environmental standards to be observed."

# SPECIFICATION AND QUANTITIES OF DESTROYED APMs\*

TYPES	QUANTITIES
<b>PM-79</b>	<b>331 931</b>
<b>PSM-1</b>	<b>294 245</b>
<b>PMN</b>	<b>61 361</b>
<b>OZM-3</b>	<b>60 398</b>
<b>CHR-2</b>	<b>61 497</b>
<b>MON-50</b>	<b>34 840</b>
<b>PFM-1S</b>	<b>12 792</b>

\* All Bulgarian APM's were destroyed in two companies – **DUNARIT SpJsCo**, city of Rouse and **TEREM** – branch factory, City of Kostenetz.

# PFM – 1S specifications

- Weight – 80 g;
- Dimensions (Mine) – 119 x 64 x 20 mm packed in clips of 16, four to a KSF-1S container (total of 64 Mines per container);
- Dimensions of the cluster – 480 x 140 mm;
- Explosive type – VS-6D Liquid;
- Net Explosive Content – 40 g.

# Phases of the Completed Work

1. Evaluation of the actual condition of the PFM's
2. Transportation of the PFM's from the Armed Forces' storages.
3. Selection of a method of destruction suitable for PFM's
4. Ecological monitoring of the process of destruction of PFM's
5. Destruction of PFM's

# Evaluation of the actual condition of the PFM's

- The PFM's were kept in covered storage facilities and were in good condition.
- The PFM's were produced in mid-1980s.
- There are no cases of leakages of explosive liquid from the plastic container.



# Selection of a method of destruction suitable for PFMs

- Through dismantling and subsequent separation of the different materials.
- Burning in special furnaces.
- Through detonation.

# Dismantling and subsequent separation of the different materials

- The containers cannot be dismantled
- The materials which could possibly be extracted are of no real value.
- The process of dismantling is dangerous and economically ineffective.

# Burning in special furnaces

- Due to the nature of the explosive liquid and the polymers from which the container is made a large amount of harmful substances would be released.
- The harmful substances released are described in detail in several publications available on the GICHD website.

# Destruction through Detonation

- The objective is the detonation process to be conducted under conditions close to the ideal.
- The detonation process should be conducted in the presence of the highest pressure possible.
- In order the necessary parameters to be reached, it is advisable that the containers be put in drillings
- The quantity of the containers is limited and it is economically inefficient to be used as an industrial explosive.
- The necessary conditions were accomplished by placing the containers in trenches covered with explosive.

# Process of Destruction of PFM

- Trenches 0.5 m deep were dug
- 10 containers were placed in each trench and were covered by a layer of explosive.
- Time necessary for the destruction of all the available quantity of 12 792 pieces of PFMs – one week.
- The destruction was conducted on the firing ground in “Dunarit”.

# LOCATION OF DESTRUCTION SITES, PRESENTATION OF CAPABILITIES/FACILITIES

**”DUNARIT” Company** - Joint-stock Company established in 1903 as a plant for powder and explosives for the needs of the Bulgarian armed forces. Shareholder – 100 % State owned

The present activities of “Dunarit” are in the field of production of a range of ammunitions, technology equipment, equipment for the food-processing industry; metal-working machines, anti-fire, agricultural, medical and household equipment; industrial explosives.

**The company implemented ISO 9001 quality assurance system, awarded in 1999.** The ISO 9001(v..2000) and AQAP audit procedures are being carried out.

# LOCATION OF DESTRUCTION SITES, PRESENTATION OF CAPABILITIES/FACILITIES

## **”DUNARIT” Company:**

- is basically equipped with suitable process lines/infrastructure which allows destruction/utilization works not only for APM’s but other ammunitions to be stored and processed;
- has built up additional facilities for storage/discharge and protection during the process of APM’s destruction/utilization;
- has developed its own “know – how” for APM’s destruction /utilization works and the wasted explosives/materials processing;
- has considerable experience and traditions in handling a variety of ammunitions, explosives and their processing;
- has reached capacity to process 1200-4000 APM’s per work shift.

**The authors would like to express their gratitude to the high-ranking officials, organizers and sponsors and colleagues – experts for this excellent opportunity**

**Bozhidar Penchev**

**State expert**

**Ministry of Economy**

**Sector analysis directorate**

**1046 Sofia, 8 Slavianska str**

**+359 2 940 75 74 phone**

**+359 2 987 21 90 fax**

**[b.penchev@mi.government.bg](mailto:b.penchev@mi.government.bg)**

**Angel Topalov**

**Head of departement**

**“Innovation & marketing”**

**“Dunarit” SpJsc**

**7000 Rousse, POB 12**

**+359 82 844 139 phone**

**+359 82 446 826**

**[a\\_topalov@dunarit.rousse.bg](mailto:a_topalov@dunarit.rousse.bg)**