

**TCVN 10299-7:2014**

1<sup>st</sup> Edition

**ADDRESSING THE POST-WAR CONSEQUENCES OF  
MINE/ERW-**

**PART 7: EXPLOSIVE ORDNANCE DISPOSAL (EOD)**

HANOI – 2014

Table of contents

|  | <b>Page</b> |
|--|-------------|
| Foreword.....  | 5           |
| 1 Scope.....   | 6           |
| 2 Normative references.....  | 6           |
| 3 Terms & definitions .....  | 6           |
| 4. General requirements .....  | 7           |
| 4.1. EOD methods .....   | 7           |
| 4.2. Application of EOD approaches upon different types of Mine/ERW.....       | 7           |
| 5. Requirements for EOD operations.....  | 7           |
| 6 Safety rules for EOD operation.....  | 10          |
| 6.1 General safety rules.....  | 10          |
| 6.2 Safety rules for EOD by disassembling.....                                 | 12          |
| 6.3 Safety regulations for explosive ordnance disposal by using hot steam..... | 14          |
| 6.4 Safety regulations for explosive ordnance disposal by incinerating.....    | 16          |
| 6.5 Safety regulations for explosive ordnance disposal by detonating.....      | 18          |
| 7 Responsibilities.....  | 23          |
| 7.1 National Mine Action Authority.....  | 23          |
| 7.2 EOD Organizations .....  | 23          |
| 7.3 Demining Organizations .....   | 23          |
| Appendix A.....  | 23          |

**Foreword**

TCVN 10299-1 :2014 was drafted by the Technical Standard Department of Engineering Command, requested by the Ministry of Defense, appraised by the Directorate for Standards, Metrology and Quality and published by the Ministry of Science and Technology.

TCVN 10299 :2014 – *Addressing the post-war consequences of Mine/ERW*, includes 10 parts:

- TCVN 10299-1:2014, *Part 1: General provisions*;
- TCVN 10299-2:2014, *Part 2: Assessment and Accreditation of demining organizations*;
- TCVN 10299-3:2014, *Part 3: Monitoring and Evaluation of demining organizations*;
- TCVN 10299-4:2014, *Part 4: Non-technical Survey and Technical Survey*;
- TCVN 10299-5:2014, *Part 5: Demining safety*;
- TCVN 10299-6:2014, *Part 6: Clearance of Mine/ERW*;
- TCVN 10299-7:2014, *Part 7: Explosive Ordnance Disposal (EOD)*;
- TCVN 10299-8:2014, *Part 8: Medical support for demining operations*;
- TCVN 10299-9:2014, *Part 9: Investigation of demining incidents*;
- TCVN 10299-10:2014, *Part 10: Management of information*;

# Addressing the post-war consequences of Mine/ERW - Part 7: Explosive Ordnance Disposal

## 1 Scope

This standard specifies (indicates) the methods, requirements, safety procedures for explosive ordnance disposal (EOD) and the responsibilities of the relevant organizations.

## 2 Normative references

The following normative references are vital for the application of this standard. For dated references, the cited edition shall be applied. For undated references, the latest edition of the normative documents referred to shall be applied, including amendments or supplements (if any).

TCVN 10299-1:2014 *Part 1 : General provisions*

## 3 Terms & definitions

This standard provides the terms and definitions specified (stated) in TCVN 10299-1:2014 under the following terms and definitions:

### 3.1

#### **Explosive ordnance disposal**

The application of techniques to dispose fully or partly mine/ERW to ensure safety.

### 3.2

#### **Disposal of mine/ERW by disassembling**

Explosive ordnance disposal by disassembling is the breaking down of parts of Mine/ERW to extract dangerous parts.

### 3.3

#### **Disposal of mine/ERW by water steaming to extract explosives from case**

Explosive ordnance disposal by deflating is the use of hot steam on Mine/ERW in order to extract shell and explosives.

### 3.4

#### **Disposal of mine/ERW by incinerating**

Destruction by using fire (heat) in order to incinerate Mine/ERW

### 3.5

#### **Disposal of mine/ERW by detonation**

Destruction by using explosives to detonate, and completely destroy Mine/ERW

### 3.6 EOD unit

Specialized entity who are authorized to conduct EOD tasks

## 4. General requirements

### 4.1. EOD methods

- Disposal of Mine/ERW by disassembling;
- Disposal of Mine/ERW by water steaming to extract explosive from case;
- Disposal of Mine/ERW by incinerating;
- Disposal of Mine/ERW by detonation;

### 4.2. Application of EOD approaches on different types of Mine/ERW

4.2.1. EOD by disassembling must be applied to/shall be applied to/is applicable to:

- Mine/ERW that have been defused
- Mine/ERW in/ with non-metal case filled with TNT, or Comp-B, C4

4.2.2. EOD by water steaming to extract separate explosive from cases is applied when:

- Mine/ERW have been defused;
- Mine/ERW filled with explosives can be melted at maximum of 100°C;

4.2.3. EOD by incinerating is applied when:

- Mine/ERW have been defused
- Mine/ERW is unable to be exploded, burned, or projected.

4.2.4 EOD by detonation is applied when:

- Mine/ERW cannot be disposed of by disassembling
- Mine/ERW that cannot be disposed of by water steaming
- Dangerous parts are disassembled from Mine/ERW
- Dangerous Mine/ERW are not allowed to be removed
- Special Mine/ERW that were assembled with detonators (including: smoke, lighting...)

## 5. Requirements for EOD operations

5.1 EOD methods shall be presented in a technical operational plan and an estimation for demining operations shall be approved by the competent authority.

5.2 EOD is conducted in accordance with procedures developed and approved by the competent authority. A List of procedures is provided in Appendix A.

5.3 In case of absence of the EOD procedure for any Mine/ERW, the demining organization shall develop and submit a proposal to the competent authority for their review and approval prior to the disposal.

## **TCVN 10299-7:2014**

**5.4** Before conducting an EOD, the demining organization must prepare an EOD plan following the template provided in Appendix B. This should be submitted to the competent authority for their approval.

**5.5** The EOD plan shall comply with the approved work plan. When applying a detonation or incineration method, it is required to notify all the teams working in the demining area. They must send a written notice to relevant agencies (including: local authority, military unit, ect).

**5.6** EOD plan includes:

### **5.6.1** Personnel deployment

**5.6.1.1** Establish an EOD board (specify the full name, ranking, and professional qualifications):

- Chairman, Vice-chairman of the EOD board must serve as the Director and Deputy Director of the demining organization;
- Board members must serve as the the Head (Deputy Head) of the technical and planning department, head of EOD team and security assistant.

**5.6.1.2** Establish the EOD team (specify the full name, ranking, and professional qualifications); members of EOD team shall meet the following requirements:

a) Each team leader shall have technical expertise of Mine/ERW, and have direct experience in the disposing Mine/ERW following the corresponding approaches at the highest safety level.

b) All technical staff shall have basic education on weapon expertise, undergo training on the EOD application of corresponding procedures, pass the test in order to be granted with certification.

c) Qualification of EOD staff is classified into 7 levels:

- Level 1; 2: EOD staff is capable of destroying in situ single items of Mine/ERW with which the individual has been trained.
- Level 3; 4: In addition to the skills of Level 1; 2 qualification, Level 3; 4 qualification enables the holder to determine when it is safe to move, transport and dispose of single or multiple items of mines/ ERW with which the individual has been trained in order to ensure safety.
- Level 5; 6: In addition to the skills of Level 1; 2; 3; 4 qualification, Level 5; 6 qualification enables the holder to conduct all the EOD procedures on with which each individual has been trained in order to ensure safety.
- Level 7: In addition to the skills of Level 1; 2; 3; 4; 5; 6 qualification: Level 7 qualification enables the holder to train staff of level 1; 2; 3; 4; 5; 6, and is capable of disposing hazardous Mine/ERW such as improvised fuse ordnance, liquid propellant ordnance, and phosphorus munitions

d) Medical team and drivers;

e) Security team

f) Logistics team

**5.6.1.3** Provide training for EOD team:

a) Theoretical training

- EOD plan, technologies, procedures, safety rules, signs and signals in EOD process;
- Functions and compositions of Mine/ERW and how it will be disposed;
- Methods to prevent fire and explosion in EOD operation;
- Safety methods in EOD operation;

b) Practical training

- Loading/Unloading and arranging Mine/ERW
- How to use tools and equipments for disposal
- Practice in fire prevention methods

**5.6.2** Disposal methods (details name, quantity and volume of Mine/ERW will be disposed according to the following methods)

- Disassembling
- Water steaming
- Incinerating
- Detonating

**5.6.3** EOD implementation

**5.6.3.1** Preparation:

**5.6.3.1.1** Draft a plan and submit it to the competent authority for approval

**5.6.3.1.2** Select disposal location:

- Choose location and ask for permission if it is managed by the local authority
- Prepare disposal site in accordance with disposal procedures
- Check disposal site
- Renovate and maintain disposal site

**5.6.3.1.3** Provide training for EOD team

a) Theoretical training:

- EOD plan, technology, procedures, safety rules, signs and signals in EOD process;
- Functions & compositions of Mine/ERW to be disposed;
- Methods to prevent fire and explosion during EOD processes
- Safety methods in EOD operation;

b) Practical training

- Loading/Unloading and arranging Mine/ERW
- How to use tools and equipments for disposal
- Practice on fire prevention methods

## **TCVN 10299-7:2014**

**5.6.3.1.4** Means of transportation to move Mine/ERW from warehouse to disposal site.

**5.6.3.1.5** Notify the local authority and surrounding organizations about the date and time of destruction in order to ensure safety without entering into disposal area.

**5.6.4** Implementation of EOD plan: Based on the approved EOD plan, demining organization orders the bringing of Mine/ERW and EOD materials out of warehouse, and organize the implementation in accordance to the approved plan, ensuring absolute safety.

**5.6.5** Reporting after destruction: Demining organizations shall summarize the results and report it to the competent authority as dictated in the regulations.

## **6 Safety rules for EOD operation**

### **6.1 General safety rules**

When conducting EOD activities, it is strictly required to apply safety rules during EOD processes and the following rules:

**6.1.1** Prior to EOD implementation, each EOD team leader shall inform each group of EOD plans and assign tasks for them as well as allocate security groups at the disposal site for coordination if necessary.

**6.1.2** Each EOD procedure shall be trained in theory and practice, the results shall be checked and evaluated so that only those who meet the requirements are assigned to conduct the EOD task.

**6.1.3** Unauthorized persons are not allowed to enter the disposal site.

**6.1.4** On a daily basis, before working, each EOD team leader shall repeat the safety rules and check the entire disposal site to ensure safety prior to implementation.

**6.1.5** EOD team leader must be frequently present at the worksite during the EOD procedure.

**6.1.6** Each working day shall not exceed 7 hours, no operation shall be conducted at noon and in the evening. During the hours of operation, each team member shall comply with procedures, safety rules and the original sequence of steps.

**6.1.7** Non-fixed rate, non-productivity based.

**6.1.8** Do not carry matches, lighters and other devices that cause sparks at the disposal site (excluding facilities used for disposal and managed by the team leader)

**6.1.9** No destruction is allowed in thunderstorms, rain, storms, fog, or temperature below 10°C or above 40°C.

**6.1.10** Mine/ERW that are disposed shall be entirely destroyed within the day. In special cases, (such as its further location from the warehouse, in cases of inclement weather, for example; storm, rain, etc.), Mine/ERW can be stored overnight in a temporary storage cellar, but there must be security at all times.

**6.1.11** No transportation of Mine/ERW shall be combined with human transportation.

**6.1.12** When Mine/ERW are transported to the destruction area, vehicles are required to adhere to the following regulations:

**6.1.12.1** For vehicles

- Vehicles must be qualified to operate safely within the testing period. They must be equipped with at least two fire extinguishers and other firefighting equipment;
- Vehicles shall have a mirror in order to observe the entire rear trunk;
- There must be an exhaust pipe that is located under the vehicle to ensure no sparking;
- The vehicles shall have a hood or canvas to protect Mine/ERW from rain or sunshine during transportation;
- It is required to put fuel into the tank before loading any Mine/ERW into the vehicle; the tank lid should be tightly closed;
- Sandbags should be placed near the cabin in order to protect the driver and the escort;
- The floor should be made of wood and firmly covered by a thick layer of sand (at least 10 cm);
- Do not use trucks, car carrier trailers, electric automobiles or buses to transport Mine/ERW;
- Transportation speed does not exceed 25 km/h on a paved road; and 10 km/h on an unpaved road and within the destruction area.

**6.1.12.2** For motor boats:

- The boat must be in good condition. Within testing period, it must be firm and must not leak.
- The boat shall have a canvas and a firm hooks for landing. Wooden bridges are required on the boat to step ashore and to ensure convenience for movement and transportation.
- Other goods are not allowed on the same boat carrying Mine/ERW.
- Fuel for operation is placed in a separate hold at the stern of the boat.
- The boat shall be equipped with firefighting equipment and waterproof sacks.

**6.1.12.3** For primitive vehicles

- Shall have rubber tires or pads, trunks firm shafts and partitions in front and rear of vehicles;
- The floor shall be covered with a thick layer of sand (at least 10 cm);

**6.1.12.4** For shoulder poles, bamboo frames or boxes storing Mine/ERW:

- Shoulder poles and bamboo frames shall be firm and durable. While using, the lowest height from the bottom of the bamboo frame to the ground should be about 0.3 m;
- Boxes shall be firm, have locks, quays, hinges, chocking bars, and pads.

**6.1.13** Loading of Mine/ERW in the disposal site shall be carried out in accordance to the following regulations:

- The arrangement and transportation of Mine/ERW shall be gentle. Do not throw or clash them into the Mine/ERW. The EOD staff shall be fully equipped with PPE;
- Only one layer of boxes shall be loaded onto primitive vehicles.
- Human is not required to carry Mine/ERW from dangerous route to blast hole;
- Two persons are required to place Mine/ERW in blast hole; the first one will give Mine/ERW to the second person below for arranging. At the same time, do not arrange Mine/ERW in more than one blast hole. You must finish one hole and then move onto the other. (Finish one hole first and then move to the other).

**6.1.14** Upon completion, it is required to:

- a) Check the entire disposal area and the surroundings to see if there are Mine/ERW left;

## **TCVN 10299-7:2014**

- b) Collect all pieces of fragments materials and scraps that belonged to the mine/ERW, after destruction;
- c) Destroy completely all explodable Mine/ERW or its parts that were unexploded within disposal site and the surroundings;
- d) The following types of Mine/ERW must be destroyed in site if it is unexploded. It is forbidden to move mines/EWR to other locations:
  - Mine/ERW assembled with detonators;
  - Bomblets, M79 ammunition, dual-purpose cluster munitions;
  - Detonators from different Mine/ERW
  - Mine/ERW with unstable structure;
  - Dangerous parts of Mine/ERW which can explode if they are clashing or moving;
- e) Clear and fill up blast holes to the initial condition.
- f) Check entire disposal area and the surroundings; only conduct the hand-over remaining of disposal site when safety requirements are guaranteed.

### **6.2 Safety rules for EOD by disassembling:**

#### **6.2.1 Prior to disassembling**

**6.2.1.1** The entire EOD team shall be fully trained with contents provided in 5.6.1.3.

**6.2.1.2** Those who are disassembling the Mine/ERW must follow safety rules carry on disassembling shall follow safety rules. Furthermore, when using equipment, machines and vehicles, it is required to check their safety condition and technical status before working. EOD operation can commence/ continue only when safety condition and operational status are ensured.

**6.2.1.3** At the workplace, the technological process must be placed at a convenient location for the EOD members to read and implement.

**6.2.1.4** Before working, on a daily basis, each EOD team leader shall:

- Repeat safety rules;
- Assign work for each member;
- - Check out entire disassembling area, equipment, machinery and vehicles. They must be safe and in good condition;

**6.2.1.5** The mobile and transportation road shall be flat, with accessible turns. The work place, temporary storage for Mine/ERW waiting for being disassembled, temporary storage for explosive, temporary storage location for dangerous Mine/ERW shall have roof. The mobile and transportation road should be easily maneuverable. The workplace, including the temporary storage of Mine/ERW awaiting removal, as well as the temporary storage location which holds the dangerous Mine/ERW, should have a roof.

**6.2.1.6** Adequate preparation of firefighting equipment:

#### **6.2.2 During disassembling**

**6.2.2.1** Volume of mines/ ERWs at temporary storage location awaiting removal shall be finished within the day

**6.2.2.2** The EOD team leader is responsible for directly operating the disassembling activities. There must be a leader and a security staff member who are assigned to each team. Person-in-charge and security staff is also assigned in each team.

**6.2.2.3** There shall be no No more or less automatic manipulation in the disassembling process. In case there is a lack of understanding or an incident of damaged machinery and equipment, and damaged transportation vehicles ..., it is required to stop disassembling and report it to the leader for a prompt resolution. Do not arbitrarily fix or solve the incident.

**6.2.2.4** Mines/ ERW shall be carefully inspected prior to disassembling. Do not disassemble types of Mine/ERW whose compositions are not understandable or leaking oil.

**6.2.2.5** No staff member shall work in an unauthorized position or an assignment that is not theirs.

**6.2.2.6** Each staff shall wear full PPE in accordance with regulations and they shall be responsible for safety of their assignment.

**6.2.2.7** Mine/ERW must be transported to disassembling operation location and shall be put in a wooden box which is firm, not rotten, or broken. Transportation by carrying by hand shall be carrying a firm rod yoke and bamboo basket. Do not carry a box on the shoulders, do not toss and throw, roll, or push the box that will cause for dropping Mine/ERW. The Mine/ERW that is transported in an internal chain shall be put in a wooden box, the original box or the transportation box. It must be firm and must not be rotten or broken. Transportation through carrying by hand must have a carrying rod, and a bamboo basket. Do not carry the boxes on the shoulders, do not toss, push, roll, or push the box, which will cause in the dropping of the Mine/ERW.

**6.2.2.8** A table that will be used for Mine/ERW disassembling operation shall be made of wood. This should be encompassed by wooden ledges with height of at least 5 cm to ensure that the Mine/ERW will not roll to the ground.

**6.2.2.9** Explosives extracted from Mine/ERW shall be put in wooden boxes or packages and carefully checked, before being transported to the storage location.

**6.2.2.10** Transportation vehicles that carry explosives shall comply with safety regulations, explosives shall be loaded gently and carefully onto vehicle. At the end of every working day, carts or automobiles must be used to transport explosives to the specified warehouse.

**6.2.2.11** After being disassembled, check carefully inside the Mine/ERW, to see/determine if there are still remaining explosives, if so, the explosives must be taken out/ destroyed. If there is still explosive left, get all it out.

### **6.2.3 After disassembling operation**

**6.2.3.1** Before completion of daily work, completing daily work, it is required to:

- Clean and clear the disassembling location;
- Check and clean equipment, and tools. They must be neatly arranged in a specified location. A weekly, monthly maintenance evaluation must be executed for every machine, equipment, tool and facility;

## **TCVN 10299-7:2014**

- Dropped explosives shall all be collected in a box and transported to the specified warehouse. The explosive which is mixed with impurities and can not be completely destroyed will be destroyed by incinerating;

**6.2.3.2** Everyday before leaving, a leader must check the entire disassembling area; staff is allowed to leave only when safety is determined, with which all responsibilities for safety will be given to security guard.

### **6.3 Safety regulations for explosive ordnance disposal by using hot steam**

#### **6.3.1 Prior disposing operation**

**6.3.1.1** The entire disposing team shall be adequately trained with the contents as provided in 5.6.1.3

**6.3.1.2** Before working, it is required to check the safety status, technical condition of equipment, machines and transportation vehicles. Determine and ensure safe and good operation condition of the equipment and facilities before using. Before using, determine that the condition of the equipment and facilities are in safe and good condition to operate.

**6.3.1.3** At workplace, technological process shall be placed at convenient position for disposing staff to read and implement. At the workplace, the technological process should be placed at a convenient position in order for the disposing staff to read and implement.

**6.3.1.4** Every day before working, the leader shall:

- Repeat the safety regulations;
- Assign staff to their work positions.
- Check entire disposal area to ensure that the equipment and the transportation vehicles are in safe and good condition;

**6.3.1.5** The path should be easily maneuverable with accessible roads. Positions in disposing place shall have roof. This excludes the storage facility of Mine/ERW with shells and scraps.

**6.3.1.6** Adequate preparation of fire equipment.

#### **6.3.2 Safety regulations during disposal operation**

**6.3.2.1** Each leader is the commander; they are the only ones who will personally conduct a disposal operation. The commander personally conducts disposal operation; staff shall be assigned in each group and security staff of that group.

**6.3.2.2** No automatic manipulation shall be implemented in disposal process. In case there is a misunderstanding or an incident of damaged machinery or equipment or of transportation vehicles ... it is required to discontinue disposal and stop disposing and report to the leader for prompt resolution. Do not arbitrarily fix, or resolve the incident.

**6.3.2.3** Mine/ERW shall be carefully inspected prior to disposal (This means that special attention must be made to ensure the safety of explosives in order to prevent TNT oil leaking). If the safety of mine/ERW is compromised, it must be taken to an isolated location for a detonation method.

**6.3.2.4** No staff member shall work in an unauthorized position or an assignment that is not theirs. Operators are required to work in a serious manner, and any misconduct such as joking, and misusing equipment, is not allowed.

**6.3.2.5** Each staff member shall wear full protective equipment in accordance with regulations and they must be responsible for safety of his assignment.

**6.3.2.6** Mine/ERW that are transported in an internal chain shall be put in a wooden box, the original box or the transportation box. It must be firm and must not be rotten or broken. Transportation through carrying by hand must have a carrying rod, and a bamboo basket. Do not carry the boxes on the shoulders, do not toss, push, roll, or push the box, which will cause in the dropping of mine/ERW.

**6.3.2.7** The materials and tools used to work directly with the explosives and the shells of mine/ERW should not be made out of black metal.

**6.3.2.8** Only open the steam valve when mine/ERW are loaded correctly into the autoclave. The technical indicators of the boiler, temperature, and pressure shall be examined in accordance with the issued boiler manual.

**6.3.2.9** A cord from 7 m to 10 m shall be used to check the boiler during deflation process. This is done by dragging the discharge valve until the pressure gauge indicates 0, in order to stop providing heat, after that, the valve must be checked.

**6.3.2.10** Check the autoclave of mine/ERW. The steam valve must be closed during the deflation process. Then, wait for 15 minutes to open the autoclave to check the steam valve.

**6.3.2.11** Observe the explosive discharge value on the autoclave, when there is fair water and no explosive is seen, check the boiler and autoclave, as mentioned above. The shell of the Mine/ERW must be completely cooled before removal from the autoclave.

**6.3.2.12** When shells of Mine/ERW are taken out of the autoclave, it should be carefully checked. If there is still explosive left inside, it must be put in the next round to deflate all of explosive. If there remains any explosives left inside of the the autoclave, it must be put into the next round of destruction to deflate all of the explosives.

**6.3.2.13** It is allowed to load full of mine/ERW in autoclave each time but only with mine/ERW of the same explosive. It is allowed to have a full load of Mine/ERW in the autoclave at a time, however; this is permissible only when the Mine/ERW is a part of the same explosive.

**6.3.2.14** Mine/ERW that are awaiting disposal in the temporary storage location must be calculated to finish within the day.

**6.3.2.15** The transportation vehicles carrying explosives shall comply with the safety regulations. Explosives shall be loaded gently and carefully into the vehicle. Be careful not to toss or drop the explosive. At the end of every working day, use carts or automobiles to transport explosives to the specified warehouse.

### **6.3.3 Safety regulations after disposal operation**

**6.3.3.1** Before completing daily work, it is required to:

- Clean and clear the disposal area;
- Weekly and monthly maintenance must be implemented for all machines, equipment, tools, and facilities; They must be checked, cleaned and neatly arranged in a specified location.
- Dropped explosives shall be collected in a box and transported to the specified warehouse.

## **TCVN 10299-7:2014**

**6.3.3.2** Everyday before leaving, the leader must check the entire disposing area. The staff is allowed to leave when it is safe and all responsibilities are handed over to the security guard.

### **6.4 Safety regulations for explosive ordnance disposal by incinerating**

#### **6.4.1 Safety regulations prior to incinerating**

**6.4.1.1** No more than 2 strips of Mine/ERW are allowed to be incinerated every time. Each strip of Mine/ERW is incinerated in accordance with regulations of explosion power conversion not exceeding 20 kg of TNT.

**6.4.1.2** The whole incinerating team shall be adequately trained with contents as given in 5.6.1.3

**6.4.1.3** Those who implement the incinerating operation shall comply to strict safety regulations when working directly with Mine/ERW as well as other consumable materials.

**6.4.1.4** Before each working shift, safety status, technical condition of equipment, machines and transportation vehicles shall be checked to determine and ensure safe and good operating condition. Before each working shift, the safety status and technical condition of the equipment, machinery and transportation vehicles must be checked in order to determine and ensure adequate/safe operating condition.

**6.4.1.5** Every day before starting, the leader shall:

- Repeat the safety regulations and assign staff in charge of each work in incinerating mine/ERW; Repeat the safety regulations and assign staff to their incinerating mine/ERW work positions.
- Check the equipment, tools, and transportation vehicles to ensure that they are in safe and good operating condition.
- Check the health and psychological status of each team member; if anyone does not meet sufficient condition to work safely, another replacement will be found.
- For the workers who are on guard duty, the safety of the guns must be checked. The safety guard must be located at the correct place and they must fulfill the task assigned to the designated area.
- The leader must check that all disposing staff understands the signs and signals during the mine/ERW incinerating operation process. Each member shall be asked to sign a safety record in order to ensure compliance with the technological process.

**6.4.1.6** The route from the Mine/ERW incinerating strip to the commanding bunker must be accessible. Each hiding shelter must be cleaned and flattened with maneuverable pathways. (ie, another word for easy ins and outs)

**6.4.1.7** When igniting the incinerator firing path, a red flag must be marked on the pathway so that one can run back to his shelter.

**6.4.1.8** All combustible materials surrounding the Mine/ERW incinerating strip must be cleaned up.

**6.4.1.9** All fire equipment used for igniting shall follow the requirements below:

- Detonating cord at quality Level 1, Level 2.
- Slow burning fuse shall ensure the rate in accordance with standard Level 1 (firing rate of 1 cm/s).

#### **6.4.2 Safety regulations during incinerating operations**

**6.4.2.1** The leader of the incinerating team is the commander who personally conducts the mine/ERW incinerating line. Each staff member is assigned a specific part of the line and a security staff member will be assigned in each according part.

**6.4.2.2** There shall be no automatic manipulation in the disassembling process. In case there is a lack of understanding or an incident of damaged machinery and equipment, or damaged transportation vehicles ..., it is required to stop disassembling and report it to the leader for a prompt resolution. Do not arbitrarily fix or solve the incident.

**6.4.2.3** Mine/ERW shall be carefully inspected to ensure safety during incinerating. If the incorrect type of Mine/ERW is identity, it shall be reported to the leader for resolution.

**6.4.2.4** Each staff shall work in his authorized position. No staff member shall work in an unauthorized position or an assignment that is not theirs. Operators are required to work in a serious manner, and any misconduct such as joking, misusing equipment, is not allowed.

**6.4.2.5** Mine/ERW transported from the awaiting shelter to the incinerating strip shall be stored in a box. They must be held on a carrying rod with a bamboo basket. Everytime the load is more than 50kg and the path is suitable for transportation, a cart may be used. It is advisable to push it gradually to prevent dropping the Mine/ERW. Do not exceed 100kg each time a load is carried.

**6.4.2.6.** Mine/ERW must be loaded gently by hand on the incinerating strip. Mine/ERW shall be loaded in layers. Each strip must be loaded in succession, one by one.

**6.4.2.7** Before igniting the incinerating strip, the commander of the disposal site shall make sure that all transportation vehicles, equipment, and people return back to the hiding shelter safely. Only the commander and the staff in charge of igniting shall stay to prepare for incinerating.

**6.4.2.8** The commander shall keep the key of the box containing match or lighter, the key shall not be given to anyone.

**6.4.2.9** The order of "fire" can only be made by the commander after receiving full safe signals from security points.

**6.4.2.10** Each staff member will ignite only one incinerating strip per round. He is required to return back to the shelter right after igniting. Two people will be located at the point of the firing position, which consists of one commander and one ignitor. When two strips are incinerated at the same time, the commander shall observe the first ignitor. After 30 seconds, the commander must direct everyone from the disposal area back to the shelter, including the people who did not ignite the strips.

**6.4.2.11** The volume of the Mine/ERW incinerated in 1 strip must not exceed 20kg of TNT or the equivalent. No more than 2 strips must be incinerated each time. The remaining Mine/ERW awaiting for the next incineration shall be stored in a temporary storage shelter. Do not incinerate different types of Mine/ERW in one strip.

**6.4.2.12** Before incinerating mine/ERW, everyone must return to the hiding shelter and they must not stand or sit on the ground. The commander will check to determine it is safe before calling, "fire."

**6.4.2.13** Two nails from 2cm to 5cm are allowed to be driven on a piece of small wood in order to maintain/keep the detonating cord.

## **TCVN 10299-7:2014**

**6.4.2.14** Fuse of length less than 1.5 m shall not be used. A fuse less than the length of 1.5m shall not be used.

**6.4.2.15** After firing, if the strip does not immediately burn or smoke, the commander shall wait for 15 minutes and inspect the situation before making an order to reignite.

**6.4.2.16** After the strip has been completely incinerated without smoke, the commander shall wait for 15 minutes to check if the mine/ERW has been completely burned or not. If there still remains mines/ERW, they shall be kept in the right place for ignition. Carrying and moving the mine/ERW to another place is strictly forbidden.

**6.4.2.17** The safety order for the next incineration is released only when the destruction area is safe.

### **6.4.3 Safety regulations after incinerating operations**

**6.4.3.1** After each incineration, the commander shall personally check the incinerating strip and the disposal site, in order to dispose in situ the unburnt remnants of the Mine/ERW. The commander will then determine the safety of the area for the second round.

**6.4.3.2** The second incineration shall be conducted at a position no less than 10m from the previous incinerating strip.

**6.4.3.3** Before leaving, after each working day, the leader shall personally check the disposal site. When safety is determined, the incineration strips must be filled in. Then, the security guard is allowed to leave the point. Then, it is important to clean up the area, facility, equipment, tools and supplies. The events of the day must be reported to the unit/commander.

**6.4.3.4** In case of incinerating in consecutive days, it shall be required to guard the disposal site, store Mine/ERW in a temporary storage location. Do not allow people without authorization to enter the area.

**6.4.3.5** Check the disposal site, the record shall be made when safety is determined. Hand over to the local authority (if the area is managed by the local authority) then come back to the unit.

## **6.5 Safety regulations for explosive ordnance disposal by detonating**

### **6.5.1 General requirements**

- No more than 5 holes are detonated each time, The distance from one hole to another shall be longer than 10 m. Total amount of explosive inside mine/ERW loaded in one hole does not exceed the 20 kg TNT equivalent.
- Distance from detonating hole to Mine/ERW storage basement awaiting detonation shall be more than 1000 m.
- Distance from detonating hole to hiding shelter, commanding shelter is more than 200 m.
- Distance from detonating hole to storage shelter of firing equipment is from 500 m to 600 m.
- Distance from detonating hole to storage shelter of explosive is between 500 m to 600 m.
- Distance from detonating hole to security location is between 1500 m to 2000 m.

### **6.5.2 Safety regulations prior detonating operations**

**6.5.2.1** The whole detonating team shall be adequately trained with contents as given in 5.6.1.3.

**6.5.2.2** Those who continue the detonating operation shall strictly comply to the safety regulations when working directly with combustible materials.

**6.5.2.3** Detonating site shall be equipped with sufficient facilities, fire equipment, ambulances, medical support, and the necessary emergency medicine.

**6.5.2.4** Everyday before working, the commander shall:

- Repeat safety regulations; assign the staff in charge of each task during detonating operations, fire prevention, fire fighting, emergency and security;
- Evaluate equipment, tools, and transportation vehicles to ensure safe and good operation condition;
- Check the health and psychological status of each team member; if anyone does not meet sufficient condition to work safely, another replacement will be found.
- If firearms and ammunition are used as signals in detonation, it is required to check the safety. Remind security staff to be right at the correct position and to complete his assignment in the designated area;
- Repeat provisions of agreed signs and signals in detonating process;
- Evaluate the technical condition of the equipment, tools, and transportation vehicles and determine safety before using;
- Every staff member shall be asked to sign in and record on the safety record that ensures the compliance with technological process and safety regulations.

**6.5.2.5** The road for transportation from the hiding shelter to the disposal site and the demolition hole shall be maneuverable. It should be flat, there should be no bumpy potholes. If there are, a repair shall be required.

**6.5.2.6** In the cases where there is firing by normal detonation, on the way back to the hiding shelter, a red flag must be marked to ensure that the ignitor returns to his shelter in the right direction.

**6.5.2.7** Combustible materials around demolition holes shall be cleaned up.

**6.5.2.8** Before using firing equipment:

- If firing by electric detonating method: check power supply, firing machine, ohm metre, electrical wire, and electric detonator;
- If firing by normal detonating method: check detonating cord, slow burning fuse, tinder and normal detonator;

**6.5.2.9** Explosives used for detonating shall be packed into amount of explosive charge. Detonator, demolition cord, slow burning fuse, detonating cord shall be at quality of Level 1, Level 2.

### **6.5.3 Safety regulations during detonating operations**

**6.5.3.1** The leader of the incinerating team is the commander who personally conducts the Mine/ERW incinerating line. Each staff member is assigned a specific part of the line and a security staff member will be assigned in each according part.

**6.5.3.2** No automatic manipulation shall be implemented in disposal process. In case there is a misunderstanding or an incident of damaged machinery or equipment, or of transportation vehicles ... it is

## **TCVN 10299-7:2014**

required to discontinue disposal and stop disposing and report to the leader for prompt resolution. Do not arbitrarily fix, or resolve the incident.

**6.5.3.3** Mine/ERW shall be carefully inspected to ensure safety during incinerating. If the incorrect type of Mine/ERW is identity, it shall be reported to the leader for resolution.

**6.5.3.4** Each staff shall work in his authorized position. No staff member shall work in an unauthorized position or an assignment that is not theirs. Operators are required to work in a serious manner, and any misconduct such as joking, misusing equipment, is not allowed. ,

**6.5.3.5** Mine/ERW that are transported in an internal chain shall be put in a wooden box, the original box or the transportation box. It must be firm and must not be rotten or broken. Transportation through carrying by hand must have a carrying rod, and a bamboo basket. Do not carry the boxes on the shoulders, do not toss, push, roll, or push the box, which will cause in the dropping of mine/ERW.

**6.5.3.6** Mine/ERW must be loaded gently by hand on the incinerating strip. Mine/ERW shall be loaded in layers. Each strip must be loaded in succession, one by one.

**6.5.3.7** Only the commander and staff in charge of igniting stay to prepare for detonating. Before setting off the explosive charge in the demolition hole, the commander of the disposal site shall bring transportation vehicles and remaining people back to the hiding shelter. Only the commander and staff in charge igniting will stay behind to prepare for the detonation.

**6.5.3.8** The commander shall keep key to the box containing the match or lighter. The key should not be given to anyone.

**6.5.3.9** If normal primer is used for firing, assembling the detonating cord to the primer shall be conducted outside dangerous route (from 100 m to 150 m away from demolition hole) and at a safe place. The length of slow burning fuse is from 1.5 m to 2 m. If the normal primer is used for firing, the detonating cord will be assembled outside dangerous route (from 100m to 150 m away from the demolition hole) and at a safe place. The length of slow burning fuse is from 1.5 m to 2 m.

**6.5.3.10** When explosive charge is set to detonate, it shall be required to comply with following order:

a) For electric detonation

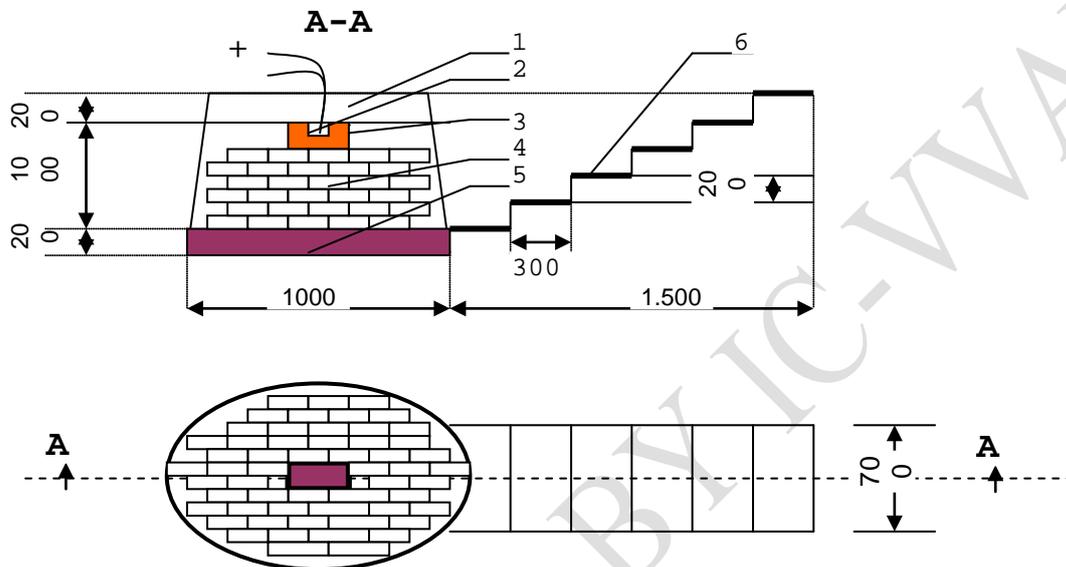
- Lay the backbone wire from commanding shelter to area of demolition hole;
- Lay the trunk wire from demolition holes to join with the backbone wire;
- Set explosive charge in demolition hole as shown in Figure 1, the detonator mounting hole shall be upward;
- Check the circuit and measure the resistance of the detonators: The detonators shall be checked at the same time, the resistance difference among detonators on the same wire shall not be greater than  $0,02 \Omega$
- Assemble electric detonator into the explosive charge;
- Electric detonator is linked with explosive charge by sticky tape or barbed wire;
- The commander checks if the setting of explosive charge and the assembling of fuse is correct, which is then required for filling up the demolition hole;
- After setting the explosive charge, the commander will evacuate everyone and the vehicles to the hiding shelter. The ignitor is then connected to the electric wire to the detonator of the trunk wire.

The connecting electric wire may be conducted in a series of connections or in parallel to the electric fuse.

- The entire circuit is checked only when everyone is inside the hiding shelter.

b) For normal detonation:

- Set explosive charge in demolition hole as shown in Figure 1, the detonator mounting hole shall be upward;



**IMPORTANT INSTRUCTIONS:** 1. Thick soil layer from 15 cm to 20 cm; 2. Detonator, fuse; 3. Explosive charge ; 4. Mine/ERW and loaded in the hole; 5. Thick sand layer from 25 cm to 20 cm; 6. Stairs for up and down the hole.

**Figure 1 - The demolition hole and loading of mine/ERW in the hole**

- Join the firing equipment with explosive charge (firing equipment includes: standard fuse, slow burning fuse, detonating cord);
- Detonator is linked with explosive charge by sticky tape or barbed wire;
- The commander checks if the setting of the explosive charge and assembling of fuse is correct, which is then required for filling up demolition hole.

**6.5.3.11** The order of “fire” can only be made by the commander after receiving full safe signals from security points.

**6.5.3.12** Each staff member will ignite only one incinerating strip per round. He is required to return back to the shelter right after igniting. Two people will be located at the point of the firing position, which consists of one commander and one ignitor. When two strips are incarcerated at the same time, the commander shall observe the first ignitor. After 30 seconds, the commander must direct everyone from the disposal area back to the shelter, including the people who did not ignite the strips.

**6.5.3.13** In cases where there is firing by an electric detonating method and it is not exploded, firing shall be repeated for an additional 1-2 times. If it is still not exploded, the backbone wire shall be disconnected from the power supply. The power supply must be stored in a locked box. The commanders/authorized

## **TCVN 10299-7:2014**

personell shall keep the key. They must wait for 30 minutes. Then the commanders shall get out of the shelter to check the disposal site to identify the cause. After that, the commander shall appoint the appropriate staff to resolve the problem. When the problem is resolved, the detonation is conducted in the above order.

**6.5.3.14** In case of firing by normal detonating method and it is not exploded; the commander shall need to wait for 30 minutes. He can then get out of the shelter to check disposal site in order to identify the cause. After that, the commander shall appoint staff to resolve the problem. When the problem is resolved, detonation is conducted by setting another explosive charge next to the previous one for detonating. It is strictly forbidden to dig the initial explosive.

**6.5.3.15** 30 minutes after firing, the commander shall check detonation results. If it is not completely exploded, and there are remaining Mine/ERW, they shall be kept right in place. Do not move the Mine/ERW, but mark this with a red flag. After this point; the explosive charge is used to detonate in situ.

**6.5.3.16** Those involved in detonating operations shall comply with the commander's order and guidance. Those who do not abide by their duties or safety regulations must resolutely evacuate the demolition site. Møi

**6.5.3.17** Before making order for the next detonation, the disposal site shall be checked to ensure safety. When safety is determined, prepare for the next detonating operation. Before the next detonation is ordered, the disposal site shall be evaluated to ensure safety. When safety is determined, then preparations for the next detonation operation will be conducted,

**6.5.3.18** If it is not completely exploded in one time, an amount of explosive 1,5 times more than the previous amount will be used for detonating. If the Mine/ERW is not completely exploded in one time, an amount of 1.5 will be added to the previous amount to be used for detonating.

### **6.5.4 Safety regulation after detonating operations**

**6.5.4.1** Each time after detonating, check and clean up the demolition hole. When it is safe, and there are no longer any Mine/ERW which are subject to explode, and fire causing danger to humans, vehicles and animals, the 2nd round of detonating operations will be allowed to be conducted.

**6.5.4.2** Before leaving, after each working day, the leader shall personally check the disposal site. When safety is determined, the incineration strips must be filled in. Then, the security guard is allowed to leave the point. Then, it is important to clean up the area, facility, equipment, tools and supplies. The events of the day must be reported to the unit/commander.

**6.5.4.3** In case of detonating in many days, it shall be required to guard disposal area, store mine/ERW in temporary storage location. Do not allow people without duties enter demolition site. In case of detonating in consecutive days,

**6.5.4.4** When period of detonation is finished, the commander inspects the disposal area. He must ensure that there is safety before leaving and handing responsibility over to the local authority. He must develop a safety record with the certified signature of the involved parties.

## **7 Responsibilities**

### **7.1 National Mine Action Authority**

- Develop and maintain training programs and provide license for EOD organizations
- Develop and apply EOD standard.
- Develop and maintain technical expertise and qualification of EOD team leaders and members.
- Develop and apply norms to ensure efficiency and safety.
- Develop a system of templates and documents related to EOD operations.

### **7.2 EOD Organizations**

- Develop EOD work plan as assigned by the competent authority.
- Implement EOD activities in accordance with current process to ensure efficiency and safety.
- Manage and provide trainings for EOD operators to ensure that they are competent and qualified to meet the requirements of EOD operations.
- Conduct, research and develop EOD procedure for Mine/ERW whose disposal procedure has not been formulated, and then submit to competent authority for approval.

### **7.3 Demining Organizations**

- Comply with regulations specified in this standard.
- Maintain and hand over mine/ERW to EOD organizations.

## **Appendix A**

(Normative)

### **EOD Procedures**

| <b>No</b> | <b>Procedure</b>  | <b>Developed by</b>   | <b>Approved by</b>     | <b>No, dated<br/>dd/mm/yy</b> |
|-----------|---|-----------------------|------------------------|-------------------------------|
| <b>I</b>  | <b>Standard Operation Procedures for weapon disposal by disassembling method:</b> |                       |                        |                               |
| 1         | SOP on disassembling of rocket projectile M-14 OΦ                                 | Military Weapons Dept | Technical General Dept | No. 6495/CQK dated 12/01/2009 |
| 2         | SOP on disassembling of rocket projectile TOW                                     | MWD                   | TGD                    | No. 6364/CQK dated 26/12/2007 |
| 3         | SOP on disassembling of artillery field gun projectile 76,..90mm                  | Military Weapons Dept | Technical General Dept | No. 6364/CQK dated 26/12/2007 |

**TCVN 10299-7:2014**

| No         | Procedure   | Developed by               | Approved by            | No, dated dd/mm/yy              |
|------------|---|----------------------------|------------------------|---------------------------------|
| 4          | SOP on disassembling of mortar projectile 60, 81mm (US)                                     | Military Weapons Dept.     | Technical General Dept | No. 6371/CQK dated 26/12/2007   |
| 5          | SOP on disassembling of Artillery Howitzer projectile 105mm                                 | Military Weapons Dept.     | Technical General Dept | No. 6364/CQK dated 26/12/2007   |
| 6          | SOP on disassembling of DKZ bullet 82mm, Level 5  | Military Weapons Dept.     | Technical General Dept | No. 899/TCKT dated 12/3/2007    |
| 7          | SOP on separating of explosive by hot water steam equipment                                 | Engineering Command        | Technical General Dept | No. 1985/TCKT dated 31/5/2010   |
| 8          | SOP on separating of explosive by hot water steam equipment XLBD                            | Engineering Command        | Technical General Dept | No.1986 Dated 31/10/2010        |
| 9          | SOP on cutting bombs by G-Lance Abrasive Cutting Equipment 160m                             | Engineering Command        | Technical General Dept | No.2385 Dated 11/72008          |
| 10         | SOP on cutting bombs by MEBA 335-500, MEBA 650-700  | Engineering Command        | Technical General Dept | No.2384 Dated 11/72008          |
| 11         | SOP for disassembling of fixed artillery ammunition level 5                                 | Military Technical Academy | Engineering Commander  | No.897/TCKT Dated 12/3/2007     |
| 12         | SOP on disassembling of artillery projectile warhead level 5                                | Military Technical Academy | Technical General Dept | No. 895/TCKT dated 12/3/2007    |
| <b>II</b>  | <b>SOP for weapon disposal by hot steam</b>   |                            |                        |                                 |
| 1          | SOP for Steaming Explosive Charge of Sea Mine AMĐ- 2 with the use of Mobile Steaming Device | Engineering Command        | Technical General Dept | 45/KT ngày 16/11/2004           |
| 2          | SOP on disposal of engineering weapons (part II)  | Engineering Command        | Technical General Dept | No. 300/QT-BTL dated 23/02/2009 |
| 3          | SOP on discharging TNT explosive, Comp-B and triton by water steaming method                | Military Technical Academy | Technical General Dept | No. 896/TCKT dated 12/3/2007    |
| <b>III</b> | <b>SOP for weapon disposal by incinerating</b>  |                            |                        |                                 |
| 1          | SOP on detonator disposal by incinerating   | Military Weapons Dept.     | Technical General Dept | No. 6372/CQK dated 26/12/2007   |
| 2          | SOP for incinerating of Smokeless Propellant  | Military Weapons Dept.     | Technical General Dept | No. 6499/CQK dated 12/01/2009   |

| No        | Procedure  | Developed by               | Approved by            | No, dated dd/mm/yy            |
|-----------|--|----------------------------|------------------------|-------------------------------|
| 3         | SOP for incinerating TNT explosive level 5   | Military Weapons Dept.     | Technical General Dept | No. 6363/CQK dated 26/12/2007 |
| 4         | SOP for incinerating of Propellant of AP Artillery Ammunition  | Military Weapons Dept.     | Technical General Dept | No. 419/ĐD dated 28/2/2000    |
| 5         | SOP on high explosive level 5 disposal by incinerating   | Military Weapons Dept.     | Technical General Dept | No. 6373/CQK dated 26/12/2007 |
| 6         | SOP on artillery projectile warhead 105 & 155mm disposal by incinerating                               | Military Weapons Dept.     | Technical General Dept | No. 425/ĐD dated 28/2/2000    |
| 7         | SOP on fuse wire by incinerating   | Military Weapons Dept.     | Technical General Dept | No. 6496/CQK dated 12/01/2009 |
| 8         | SOP for incinerating of Powder and Flake Explosive   | Military Weapons Dept.     | Military Weapons Dept. | No. 4485/ĐD dated 17/12/2002  |
| 9         | SOP on disposal of engineering weapon (part III)   | Engineering Command        | Technical General Dept | 300/QT-BTL ngày 23/02/2009    |
| 10        | SOP on disposal of bullet level 5 by incinerator   | Military Technical Academy | Technical General Dept | No. 4445 dated 12/3/2007      |
| 11        | SOP on disposal of detonator level 5 by incinerating   | Military Technical Academy | Technical General Dept | No. 898/TCKT dated 12/3/2007  |
| 12        | SOP on disassembling and disposal of artillery projectile, warhead and lighting mortar by incinerating | Military Weapons Dept.     | Military Weapons Dept. | No. 6498/CQK dated 12/01/2009 |
| <b>IV</b> | <b>SOP for weapon disposal by detonating</b>   |                            |                        |                               |
| 1         | SOP on disposal of artillery projectile 20mm-HQ and anticraft CX 23mm                                  | Military Weapons Dept.     | Technical General Dept | No. 6367/CQK dated 26/12/2007 |
| 2         | SOP on disposal of high explosive M79, anti personnel, shape charge penetration                        | Military Weapons Dept.     | Technical General Dept | No. 6494/CQK dated 12/01/2009 |
| 3         | SOP on disposal of grenade   | Military Weapons Dept.     | Technical General Dept | No. 6501/CQK dated 12/01/2009 |
| 4         | SOP on disposal of Expired Fixed Artillery Ammunition Level 5  | Military Technical Academy | Technical General Dept | No. 891/TCKT dated 12/3/2007  |
| 5         | SOP on disposal of shape charge penetration warhead level 5  | Military Technical Academy | Technical General Dept | No. 889/TCKT dated 12/3/2007  |
| 6         | SOP on disposal of smoke warhead   | Military Technical         | Technical              | No. 890/TCKT                  |

**TCVN 10299-7:2014**

| No       | Procedure  | Developed by               | Approved by            | No, dated<br>dd/mm/yy          |
|----------|--|----------------------------|------------------------|--------------------------------|
|          | level 5  | Academy                    | General Dept           | dated 12/3/2007                |
| 7        | SOP on disposal b of warhead 105m                  | Military Technical Academy | Technical General Dept | No. 894/TCKT dated 12/3/2007   |
| 8        | SOP on disposal of anti personnel and ST explosion | Technical General Dept     | Technical General Dept | No. 6502/CQK dated 12/01/2009  |
| 9        | SOP on disposal of lighting warheadwith detonator  | Technical General Dept     | Technical General Dept | No. 6368/CQK dated 26/12/2007  |
| 10       | SOP on disposal of jet engine level 5              | Military Technical Academy | Technical General Dept | No. 892/TCKT dated 12/3/2007   |
| <b>V</b> | <b>SOP on disposal of other types of weapons</b>   |                            |                        |                                |
| 1        | SOP on disposal of A-89 (9M-37M) missile           | Military Technical Academy | Technical General Dept | No. 883/TCKT dated 12/3/2007   |
| 2        | SOP on disposal of A-87 (9M-3131M) missile         | Military Technical Academy | Technical General Dept | No. 898/TCKT dated 12/3/2007   |
| 3        | SOP on disposal of 3M-24Э missile                  | Military Technical Academy | Technical General Dept | No. 884/TCKT dated 12/3/2007   |
| 4        | SOP on disposal of missile level 5 II – 15Y        | Military Technical Academy | Technical General Dept | No. 4448/TCKT dated 21/12/2005 |
| 5        | SOP on disposal of missile level 5 П-28 & П -28M   | Military Technical Academy | Technical General Dept | No. 4447/TCKT dated 21/12/2005 |
| 6        | SOP on disposal of torpedo CЭT - 53M               | Military Technical Academy | Technical General Dept | No. 885/TCKT dated 12/3/2007   |
| 7        | SOP on disposal of torperdo CЭT - 40 YЭ            | Military Technical Academy | Technical General Dept | No. 887/TCKT dated 12/3/2007   |
| 8        | SOP on disposal of torperdo 53 - BA                | Military Technical Academy | Technical General Dept | No. 886/TCKT dated 12/3/2007   |
| 9        | SOP on disposal of bomb PГБ - 12                   | Military Technical Academy | Technical General Dept | No. 888/TCKT dated 12/3/2007   |
| 10       | SOP on disposal of bomb level 5 OΦAB - 250 – 270   | Military Technical Academy | Technical General Dept | No. 4450/TCKT dated 21/12/2005 |
| 11       | SOP on disposal of bomb level 5 3AB - 250 – 200    | Military Technical Academy | Technical General Dept | No. 4449/TCKT dated 21/12/2005 |
| 12       | SOP on disposal of smoke propellant level 5        | Military Technical Academy | Technical General Dept | No. 893/TCKT dated 12/3/2007   |



| Item       | Contents of work                | Unit | Quantity | Department in charge | Person in charge | Location | Transportation VehicleS | Execution Time |     |
|------------|---------------------------------|------|----------|----------------------|------------------|----------|-------------------------|----------------|-----|
|            |                                 |      |          |                      |                  |          |                         | Start          | End |
| 2          | Location                        |      |          |                      |                  |          |                         |                |     |
| 3          | Team Leader                     |      |          |                      |                  |          |                         |                |     |
| 4          | Transportation vehicle          |      |          |                      |                  |          |                         |                |     |
| 5          | Notify the local authority.     |      |          |                      |                  |          |                         |                |     |
| <b>II</b>  | <b>DISPOSAL OPERATIONS</b>      |      |          |                      |                  |          |                         |                |     |
| 1          | Disassembling                   |      |          |                      |                  |          |                         |                |     |
| 2          | Using hot steam                 |      |          |                      |                  |          |                         |                |     |
| 3          | Incinerating                    |      |          |                      |                  |          |                         |                |     |
| 4          | Detonating                      |      |          |                      |                  |          |                         |                |     |
| <b>III</b> | <b>REPORTING AFTER DISPOSAL</b> |      |          |                      |                  |          |                         |                |     |

**IV. SAFETY REQUIREMENTS:** (Application of safety provisions of this safety standard and safety regulations when applying SOP).

**V. SECURITY ARRANGEMENTS:** (Based on location and disposal position to organize security points to ensure absolute safety)

**VI. REGULATIONS OF SIGNS AND SIGNALS:** (by horn, gun sound, flag...).

**VII. LOGISTICS SUPPORT**

1. Ensure materials, budget (according to current norms)

2. Ensure weapons, equipment

3. Ensure transportation vehicles

4. Ensure gas and oil.

**Receivers:**

**HEAD OF UNIT**  
(Signed and sealed )