Natural Resources Canada
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Application Guidelines for Division 1 Factory Licences

Explosives Regulatory Division
Lands and Minerals Sector
Natural Resources Canada

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1. INTRODUCTION

These guidelines are intended to assist an applicant to meet the regulatory requirements necessary to obtain a Division 1 factory licence or certificate from the Explosives Regulatory Division (ERD).

A holder of a licence must comply with all applicable sections in the *Explosives Regulations, 2013* (the Regulations). These guidelines do not serve to substitute the Regulations, and in the event of any disagreement between these two documents, the Regulations shall prevail. These guidelines do not supersede any other regulation or law, be it federal, provincial, or municipal, or any codes specified in such legislation.

These guidelines may be used by ERD to assist in evaluating licence applications and conducting compliance verifications of licensed sites.

1.1 Definitions

client site means a blast site at which a mobile process unit (MPU) is used to manufacture explosives away from a factory or satellite site.

Division 1 factory licence means a licence that is issued under paragraph 7(1)(a) of the *Explosives Act* and authorizes the manufacture of explosives at a factory.

exposed site (ES) (synonyms: vulnerable site, susceptible site, receptor, acceptor) is a building or site where people live, work or occupy; a public road, railway or other transportation infrastructure; a pipeline, energy transmission, energy infrastructure or communication infrastructure; or any place in which a substance that increases the likelihood of a fire or explosion is likely to be stored including, but not limited to, a site containing aboveground or underground storage of ignitable liquids, or a site containing explosives (magazine, tanker loaded with explosives, factory or MPU).

factory magazine means a magazine that is located at a factory or satellite site.

high hazard explosives are explosives authorized as either Type E (high explosives), I (initiation systems), or D (military and law enforcement explosives).

manufacturing explosives includes the following activities:

a) making or manufacturing an explosive substance from raw material or from another explosive substance;

b) making or manufacturing an explosive article, including the assembly of an article from explosive and non-explosive components;

c) altering or remaking an explosive substance or explosive article by modifying its chemical composition (for example, by gassing or blending) or by subjecting it to physical processes with the input of energy (for example, pneumatic handling, pumping, shearing or thickening);

d) dividing an explosive into its components or unmaking, breaking up or in any manner destroying it;

e) packaging explosives; and

f) testing an unauthorized explosive or testing an explosive to assess its potential for a use other than its authorized use.

mobile process unit (MPU) means a vehicle or portable machine that is used at a factory, satellite site or client site to carry out an explosives manufacturing operation.

net explosive quantity (NEQ) is defined as the mass of an explosive excluding the mass of any packaging or container, and in the case of an explosive article, excluding any component that is not an explosive substance.

potential explosion site (PES) is the location of a quantity of explosives that will create a blast that could be associated with the projection of fragments or debris, or a fire hazard if its contents should explode.

process unit means a building, structure, room or place in which an explosives manufacturing operation is carried out at a factory.

raw material storage facility means a facility where non-explosive raw material and packaging material are stored at a factory or satellite site.

satellite site means a site that is located away from a factory and at which explosives that are intended for use at a client site are manufactured and temporarily stored.

satellite site certificate means a manufacturing certificate that is issued to the holder of a Division 1 factory licence under paragraph 7(1)(c) of the *Explosives Act* and authorizes the manufacture of explosives at a satellite site.

worker means a person who is at a factory or satellite site to carry out a manufacturing operation or some other kind of work (for example, maintenance of facilities or repair of equipment) for the holder of a Division 1 factory licence.

visitors are defined as personnel who have a need to go into a particular area to carry out their duties, such as delivery personnel, grass cutters, and supervisors, but are not normally required to carry out the intentions of the operations. Visitors may also be external, such as inspectors of explosives or contractors.

1.2 Relevant Documents

Although this document provides guidance into how to submit an application for a factory licence, the following list is presented as a guide to other documents or jurisdictions that must be considered. This list is not meant to be exhaustive:

- *Explosives Act;*
- *Explosives Regulations, 2013;*
- RP-05-04: *Separation Distances for Explosives*;
- G03-01: *Authorization guideline for Type E;*
- G03-07: *General Authorization guideline*;
- G05-01: *Guidelines for Division 1 Licences for Bulk Explosives Facilities*;
- G05-02: *Requirements for bulk mobile process units*;

- G05-04: *Security plan guideline*;
- G05-06: *Pumping of water-based explosives*;
- G05-25: *Sample security plan*;
- G06-05: *Guideline for determining the storage compatibility of explosives*;
- G06-06: *Key control plan guideline*;
- G06-07: *Fire safety plan guideline*;
- G08-02: *Guideline for Applying for an approval letter*;
- CAN/BNQ 2910-500/2015 *Explosives – Magazines for Industrial Explosives;*
- *National Building Code of Canada* (to be used as a guide to ensure conformance with good engineering practices);
- *Canadian Electrical Code* (CEC);
- *National Fire Code of Canada* (NFC);
- *Transportation of Dangerous Goods Act and Regulations;*
- Provincial labour and/or safety acts and regulations; and
- Municipal by-laws and ordinances.

2. GENERAL

2.1 Importing explosives

Any explosives imported into Canada must have a valid import permit. For more information, please refer to ERD's webpage outlining importing, exporting and transporting explosives.

2.2 Authorization of explosives

All explosives manufactured at a factory site must be authorized unless otherwise specified in the *Explosives Regulations, 2013*. For more information, please refer to ERD's webpage outlining manufacturing and authorizing explosives.

2.3 Licensing

To operate a factory site where explosives are manufactured, you must apply for an explosives factory licence.

Explosives licences are managed through ERD's online portal-based electronic licence management system (eLMS). This system allows an individual or company, once enrolled, to apply for and manage all explosives related services/activities for authorization, manufacture, mobile process units (MPUs), import, security screening, and storage licences.

Please refer to ERD's webpage detailing enrolment and use of eLMS.

3. APPLYING FOR A NEW DIVISION 1 FACTORY LICENCE

Any manufacturing activity that is not classified as Division 3 or Division 2 in the Regulations is classified as Division 1. This usually includes large projects and bulk explosives sites (i.e. surface mine sites, quarries, construction projects, bulk explosives manufacturing facilities etc.)

A Division 1 factory licence will be granted to only one company per site. ERD does not typically approve the sharing of manufacturing sites. A licence applies to one site only; a licence cannot include multiple sites. For example, off-site storage of explosives would require a separate user magazine licence (not covered by these guidelines).

For applicants looking to open a explosives factory site manufacturing bulk explosives, it is important to have a strong understanding of ERD's G05-01: *Guidelines for Division 1 Licences for Bulk Explosives Facilities*.

When applying for a Division 1 factory licence, the following documents must be included:

3.1 Factory Licence Forms

The forms required for a Division 1 factory licence application are as follows, and are available on ERD's Explosives Forms page:

a) Form A (F05-01A) – Division 1 factory licence or satellite site certificate application;

b) Form B (F05-01B) – Site description;

c) Form C (F05-01C) – Manufacture and storage of explosives;

d) Form D (F05-01D) – Manufacturing operations description; and

e) Form E (F05-01E) – Distances.

3.1.1 Form A (F05-01A)

Form A includes general information about the company, site, forms, drawings and documents.

All fields in Form A should be filled out prior to submittal. If the section is not applicable to the application, then the form should be filled with "N/A".

If the licence applicant is a corporation, then the person signing the application must be authorized to sign the application on behalf of the company.

Refer to sections 3.2-3.5 for details related to the documents listed at the bottom of Form A.

3.1.2 Form B (F05-01B)

Form B describes the physical aspects of the site. This includes descriptions for all buildings, structures, equipment, site security features, explosives storage areas, process units, MPUs, fuel storage, ammonium nitrate (AN) storage, raw material storage facilities, wash facilities, garages etc.

Every process unit, factory magazine, raw material storage facility, building and structure that is included in Form B must be identified by a number, letter or distinctive name. This identifier should be used consistently throughout the Factory Licence Forms, and any other supporting documents/plans included in the licence application.

3.1.2.1 Buildings

All building descriptions should include the size of the building, the materials used for the buildings construction, and a description of all lighting, heating, ventilation and air conditioning systems, electrical installations, grounding and measures for protection from fire and lightning.

3.1.2.2 Security Features

A description of all site and building security features (for example, fencing, barriers, warning signs etc.) should be included, unless they are included elsewhere in the application (such as in a site security plan).

3.1.2.3 Magazines

Magazine descriptions, including, as applicable: the dimensions in meters (L x W x H), ERD tag number and magazine type.

Barricades, berms, or other natural protective features against explosions must be described, especially when the distances or types of distances shown on Form E require barricades.

Please refer to CAN/BNQ 2910-500/2015 Explosives – *Magazines for Industrial Explosives* for more information.

3.1.2.4 Equipment

Principal manufacturing equipment (including pumps) and any other equipment that could increase the likelihood of ignition should be described. An explanation of any safety features for the equipment should be provided.

In the case of explosives pumps, the exact nature of the pump and its protective features must be described. The choice of pumps should be supported by a hazard review and/or testing to demonstrate that the pump/explosives combination is safe.

3.1.2.5 Mobile Process Units (MPUs)

MPUs must be authorized before they are put into operation. To have an MPU licensed, please refer to ERD's Instructions for Application for Mobile Process Unit Review webpage.

Any MPUs in operation at the factory site must be listed on Form B. A brief description should be provided for each mobile process unit. Each MPU should be listed with its corresponding ERD licence number.

3.1.3 Form C (F05-01 C)

Form C is used to list the explosives that will be manufactured and/or stored at the factory site, as well as details related to manufacturing of explosives at client sites.

3.1.3.1 Manufactured Explosives

For each explosive manufactured at the site, a description should be provided that includes the product name, its UN proper shipping name, the date on which the explosive was authorized and its authorization file number, its UN number, and its hazard category.

3.1.3.2 Stored Explosives

For each explosive stored at the site, a description should be provided that includes the UN proper shipping name, its UN number, and its hazard category.

3.1.3.3 Explosive manufacturing at client sites

If explosives are manufactured at any client site, Form C must include the client name, address, telephone number and email address of the contact person at the client site. This list of client sites must be kept up to date, and any changes to client site information should be reflected in the licence. Form C should also include a description of the client site, the distance between the factory site and client site, and the distance between any satellite sites associated with the main factory and the client site.

3.1.4 Form D (F05-01 D)

Form D is used primarily to describe the site operations, to state the type and quantity of explosives and personnel limits with respect to each process unit and magazine described in Form B. Form D is also used to describe the operations of a MPU at the approved site and at the customer site.

3.1.4.1 Permitted Operations

The operations permitted within each process unit, factory magazine, raw material storage facility, building and structure that was included in Form B must be described in Form D.

When more than one type of operation can be conducted in a given area, the operations must be listed as being allowed to run either simultaneously or alternatively.

3.1.4.2 Explosive Quantities

The type and maximum quantity (in NEQ or, in the case of detonators, in number of units) of explosive, flammable substance, combustible material, and ingredient, including AN and fuel oil, in each process unit, magazine, storage facility, building, etc. are listed.

Waste explosives stored, residue in MPUs (heel), and any laboratory samples must also be listed.

3.1.4.3 Personnel

The maximum number of personnel is listed either as workers, or visitors (casuals or transients). Personnel limits must be set at a minimum required for normal operations. For exceptional situations, a request for temporary authorization must be submitted to ERD.

3.1.5 Form E (F05-01E)

Form E is used to describe the minimum separation distances between the factory site potential explosion sites (PESs) and any surrounding exposed sies (ESs). These distances are based on RP-05-04 - *Separation Distances for Explosives*. All distances described in this form must be in meters. Any buildings, structures or site features referenced in Forms B and D should use the same naming in Form E.

3.1.5.1 Potential explosion sites (PESs)

In the left-hand column of Form E, each building/operation/location with explosives is listed. These are regarded as PESs to the exposed sites (ESs) and other explosives building/operation/location listed in the other columns to the right. When listing a PES, the NEQ of explosives present should be included.

3.1.5.2 Exposed Sites (ESs)

The remaining columns on Form E are used to describe the separation distances between each listed PES and any ESs near the site.

The second set of columns on this form should be used to show distance to vulnerable features on site such as AN storage and fuel storage, as well as features outside the site, such as dwellings, etc. The third set of columns are used to show distances to all explosives storage areas (e.g. magazines, emulsion storage), and the fourth set of columns to all process areas (e.g. washbay, emulsion manufacturing building).

3.2 Site and Area Plans

Site and area plans must be included with the licence application. Each plan must be drawn to scale or must be a reasonable approximation of actual distances and dimensions and must include a legend.

The area plan must clearly show the location of the site and any vulnerable locations or hazardous facilities such as dwellings, power lines, and other explosives operations within a radius of at least D8 (as determined in RP-05-04 - *Separation Distances for Explosives*).

The site plan must include:

a) distances between operations, including washing/maintenance facilities, AN storage, fuel storage, vehicle parking areas, fences/barriers, and magazines;

b) distances to offices and welfare or administrative areas;

c) distances to roads and public thoroughfares;

d) distances to dwellings and other assembly points, as well as operating pits, mine facilities, and similar installations; and

e) barricades used to reduce separation distances between potential explosion sites (PESs).

All buildings included in the site and area plans should use the corresponding identifiers listed in Form B. All distances must be in meters. All distances listed in the site and area plan must correspond to the distances provided in Form E.

3.3 Manufacturing Process Documents

Layout sketches, diagrams or drawings should be provided that show the equipment to be used in each process unit (including piping and instrumentation diagrams and equipment layout drawings) and the manufacturing operations to be carried out (including process flow sheets or process schematic drawings).

A quantified risk assessment or hazard operability review of any manufacturing operation (such as pumping of explosives) to manufacture an explosive should be provided during the application if that operation has not been previously used in Canada to manufacture that explosive.

3.4 Documents Specific to High Hazard Explosives

If the explosives manufactured or stored at the site are authorized as high hazard explosives, then additional supporting documentation is required for the application.

3.4.1 Security Plan

The licence application must include a security plan that includes the following information:

a) an assessment of the security risks resulting from the presence of the explosives at the factory, satellite site or client site;

b) a description of the measures that will be taken to minimize those risks;

c) a description of the procedures that will be followed to respond to security incidents; and

d) a description of the procedures that will be followed to report security incidents.

Please refer to ERD's *Security Plan Guideline* for more information.

3.4.2 Security Screening

All employees, directors or contractors who have access to high hazard explosives, permits others to have access to high hazard explosives, or controls (either directly or indirectly) a person who has access to a high hazard explosive or permits others to have access to such an explosive must have an approval letter with ERD or an equivalent document.

During the application, a list of all such people should be included with proof that they have obtained an approval letter or equivalent document. The list should include the persons name, the type of screening document they obtained, the document number and the expiry date.

Please refer to ERD's *Guideline for Applying for an Approval Letter* for more information.

3.5 Supporting Documentation

In support of the licence application, the documents or procedures in this section must be listed on Form A.

These documents are not required to be submitted during the licence application; however, copies may be requested prior to the issuing of the licence. All factory sites must be able to show that its operations are controlled through formal, written procedures and appropriate internal documents.

3.5.1 Operating Procedures

Operating procedures (including procedures to minimize the likelihood of an accidental ignition, such as hot work) must be put in place for every manufacturing operation. The operating procedures must be kept up to date and reviewed annually. If a manufacturing operation is to be changed, the procedures for carrying out that operation must be reviewed and modified as needed before the change is implemented.

3.5.2 Maintenance Procedures

Companies must have documented maintenance procedures for site equipment, both fixed and mobile, and maintenance records must be kept in accordance with the relevant Regulations.

3.5.3 Training Manuals

Any documents outlining employee training procedures should be referenced in Form A.

3.5.4 Destruction Procedures

If the destruction of explosives is to be performed at the factory site, it must be specified on the Factory Licence Forms. Destruction areas should be identified as process units on Form B, and the details related to the explosives that will be present should be outlined on Form D.

Documentation should be in place that outlines the procedures for the destruction of the explosives. Destruction of the explosives must not increase the likelihood of an accidental ignition during or after destruction.

3.5.5 Letters of Understanding

When a company operates a site on a quarry, a Letter of Understanding (LoU) must be written and signed by all parties. The objective of a well-written LoU is to clarify the ownership of the domain/site, the responsibilities of each party on the site, to ensure good communications between all parties on the site, to note the facilities/operations present on the site, describe the access/egress control and security of the licensed site, and the scope of the explosives operations, including those of the mine/quarry and how they could affect each other. An LoU will usually include the development of a joint emergency response plan by all parties present in a domain.

3.5.6 Spill Contingency Plans

Spill contingency plans outline the response procedures for any spill of explosives, raw materials or other material that could result in contamination or an accidental ignition. This plan could be its own separate document or included as part of the emergency response plan.

3.5.7 Emergency Response Plans

The emergency response plan should develop reasonable credible scenarios of possible events, including vehicle collision, fire on the site, explosion, fire encroaching on the site, spills, storms, and power failure, as well as security-related events. It should establish the criteria needed to trigger the response; give procedures, chronologically organized, to use during the response, including directing personnel to safe locations; list the resources available and needed during the response, including contact information such as names and phone numbers; and provide site plans showing safe locations.

3.5.8 Key Control Plan

Companies should develop a formal Key Control Plan to control access to all locations where explosives may be found on the site.

Please refer to ERD's *Key Control Plan Guideline* for additional information.

4. AMENDING A DIVISION 1 FACTORY LICENCE

Whenever a change is made at the factory site that would change any of the conditions or procedures described in the licence, an amendment to the licence must be submitted.

For each amendment application, a new Form A is required to summarize and record the changes made to any forms, drawings, or documentation.

Any documents or forms that are changed as a result of the amendment should also be submitted for review.

Drawings and documentation need not be resubmitted for amendments if they have not been changed and are still valid.

5. RENEWING A DIVISION 1 FACTORY LICENCE

When renewing a Division 1 factory licence, an updated copy of Form A should be included, with amended forms and/or updated reference documents for both the base site and all its associated satellite sites.

Any documents or forms that are changed as a result of the renewal should also be submitted for review.

Drawings and documentation need not be resubmitted for renewals if they have not been changed and are still valid.

6. FEES AND SERVICE STANDARDS

ERD will process initial factory licence applications within 60 business days, and amendments/renewals within 30 business days.

For more information related to fees and service standards, please refer to ERD's Fees and Service Standards webpage.