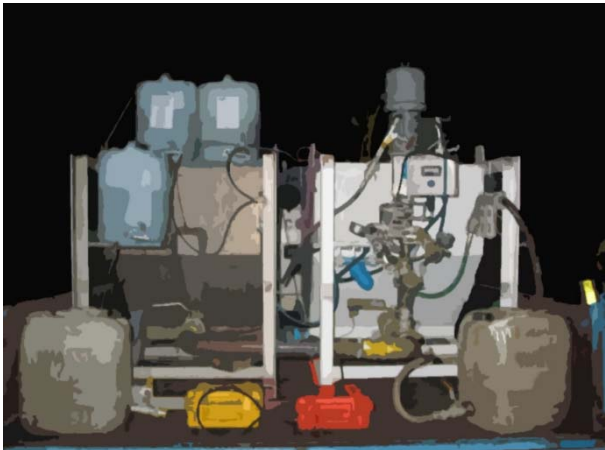


Guidance Note No. GN 1

Licensing an Explosives Manufacturing Unit at a Blast Site



**Mines Division, Geotechnical Engineering Office
Civil Engineering and Development Department**

1. Purpose and Scope

- 1.1 Bulk emulsion and ammonium nitrate/fuel oil (ANFO) explosives are commonly manufactured for immediate use at blast sites. Under Regulation 31A of the Dangerous Goods (General) Regulations, Cap. 295B, a licence is required to manufacture a nitrate mixture, a Category 1, Class 2 explosive, outside a factory. The Commissioner of Mines is the Authority for issuing the licence.
- 1.2 This Guidance Note is to assist Explosives Suppliers and Blasting Contractors to comply with the requirements for licensing a manufacturing unit.

2. Application for Approval of a Manufacturing Unit (MU)

- 2.1 The owner of an MU must apply to the Commissioner of Mines, in writing, for approval to use an MU to manufacture bulk explosives at a blast site. Approval of the MU will be issued, subject to satisfactory submission of the following:
- (a) the MU operation manual and procedures for manufacturing explosives,
 - (b) procedures for safe handling and use of the manufactured explosives,
 - (c) procedures for disposal of any waste product,
 - (d) a risk assessment on overheating, build-up of excessive pressure within the pump, etc., and the associated control measures to prevent the hazards occurring during the manufacturing process,
 - (e) an emergency response plan to deal with overheating, excessive pressure within the pump, etc. affecting the safe operation of the MU,
 - (f) an emergency response plan to deal with hazards during the transport of the bulk products used for the manufacture of explosives and an emergency contact list, and
 - (g) technical and safety information as set out in Annex A.
- 2.2 The applicant must also provide information to show that they comply with the general requirements set out in Annex B for the vehicle/locomotive used to transport the MU.

3. Application for a Manufacture Licence

- 3.1 After obtaining approval to use the MU, the applicant must apply to the Commissioner of Mines for a manufacture licence on specific blast sites. The application must include:

- (a) a letter from the holder of a Blasting Permit to confirm that the explosives to be manufactured will be used for blasting operations at the specified blast site,
- (b) four copies of a site plan at a scale of 1:500 or 1:1000, showing the permitted blast area delineated in the Blasting Permit, and all public roads, buildings, structures, utilities and installations within a plan radius of 300m,
- (c) details of the types and maximum daily quantities of explosives to be manufactured,
- (d) a copy of a valid licence issued by the Director of Fire Services for storage of the dangerous goods (i.e. emulsion matrix, ammonium nitrate, fuel oil) to be used for the manufacture of bulk explosives, together with a site plan (scale 1:1000) showing the storage location,
- (e) the names and particulars of personnel who will be responsible for operating the MU,
- (f) a copy of valid documents issued by the manufacturer or training organization to each MU operator, certifying the satisfactory completion of all required training, including handling of emergencies, for the safe operation of the MU, and
- (g) a copy of valid calibration certificates issued by an accredited laboratory certifying that the design system/equipment (e.g. pump discharge rate, weighing scale, density cup) have been calibrated satisfactorily.

4. Processing of Application

4.1 When an application for approval of an MU, a new manufacture licence or a manufacture licence renewal/amendment is received, the Commissioner of Mines:

- (a) will respond to the applicant within 28 days,
- (b) may carry out inspections to verify information submitted with the application,
- (c) will issue approval, in writing, to the applicant for the MU within 3 working days upon confirmation of full compliance with all requirements,
- (d) will issue the manufacture licence to the applicant within 3 working days upon confirmation of full compliance with all requirements and payment of the prescribed fee, and
- (e) may impose conditions on the manufacture licence to ensure public safety.

- 4.2 For renewal/amendment of a manufacture licence, the licensee should make an application to the Commissioner of Mines in writing not less than one month before the expiry date of the licence.

Mines Division

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General guidance is provided in this Note. Specific requirements may be imposed by the Commissioner of Mines to suit the conditions and characteristics of the site. Any feedback on this document should be sent to the Chief Geotechnical Engineer/Mines, Geotechnical Engineering Office, Civil Engineering and Development Department.

Telephone: (852) 3842 7210 Facsimile: (852) 2714 0193 E-mail: mines@cedd.gov.hk

Technical and Safety Information

1. Records to show that similar types of MU has been used to manufacture explosives safely at blast sites in other countries.
2. Identification of the MU and its associated equipment (e.g. MU Serial No., Pump Model and Registration No.).
3. A copy of the design drawing(s) showing details of the MU (including mixing chambers, bins/tanks, auger, mixer, pump, etc.) mounted on the transporting unit (TU). The maximum storage capacity of the bin/tank for each ingredient has to be specified.
4. Mixing process and instrumentation flow diagram.
5. Material Safety Data Sheets (MSDS) and Technical Data Sheets on all ingredients for the manufactured explosives. Details of the suppliers of the ingredients (e.g. name, address). Only non-explosives ingredients such as emulsion matrix, ammonium nitrate, fuel oil or sodium nitrite shall be carried in bins/tanks of the MU.
6. Technical specifications on the safety features of the MU (including not less than two independent safety auto-stop mechanisms on the emulsion pump e.g. pressure gauge, temperature gauge, flow meter, thermo fuse, etc.).
7. Procedures for inspection and maintenance of the MU.
8. Auditing and maintenance records of all equipment (e.g. pump maintenance logbook) for the past 12 months, if applicable.
9. Where the mixing unit is used to load free flowing ANFO pneumatically, the unit must be equipped with an adequate earthing system.
10. Other information as may be required by the Commissioner of Mines.

General Requirements for a Transporting Unit (TU) for the Transport of the MU

1. For surface or underground transport by vehicles, the TU carrying an MU shall have a diesel-powered engine.
2. The TU carrying an MU shall be roadworthy with a valid vehicle licence issued by the Commissioner for Transport.
3. The TU shall be equipped with an emergency stop at an easily accessible position.
4. All cables to rear lights shall be fitted within fire resisting conduits.
5. The TU shall be equipped with three 6kg or four 5kg dry chemical powder fire extinguishers.
6. The TU shall be equipped with personal protective equipment, which shall be worn by all operators appropriate to the products being handled, in accordance with the MSDS.
7. No explosives, detonators or other dangerous goods shall be carried on the TU.
8. Where mechanical track haulage is used for underground transport, the electric locomotive shall pull the trailer carrying the MU as close as possible to the blast face. The locomotive shall be equipped with:
 - (a) effective headlights and rear lights, and
 - (b) adequate earthing provisions.
9. Other information as may be required by the Commissioner of Mines.