



**US Army Corps
of Engineers®**

ENGINEERING AND CONSTRUCTION BULLETIN

No. 2025-2

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SUBJECT: Engineering Oversight of Blasting Operations for Rock Excavation or Rock Production.

CATEGORY: Directive and Policy.

1. **References:**

- a. EM 1110-2-3800, Blasting for Rock Excavation, 30 October 2018
- b. EM 385-1-1, Safety and Health Requirements Manual, 15 March 2024
- c. EM 385-1-97, Explosives - Safety and Health Requirements Manual, 17 May 2013
- d. ER 385-1-95, Safety and Requirements for Operations and Activities Involving Munitions and Explosives of Concern, 31 December 2014
- e. ER 1110-1-8169 US Army Corps of Engineers Facility Explosives Safety Mandatory Center of Expertise, 01 October 2018

2. **Purpose.** This engineering and construction bulletin (ECB) establishes policy and requirements and provides guidance for design and construction of rock excavation and rock production utilizing blast methods in terrestrial and marine environments.

3. **Applicability.** This ECB applies to all Major Subordinate Commands (MSCs), district commands, laboratories, and field operating activities having Civil Works and/or Military Programs utilizing blasting methods for rock excavation and rock production. Handling and storage of explosives are not regulated by this ECB but must comply with EM 385-1-97. Explosive use for demolition of buildings and Munitions and Explosives of Concern are also not regulated by this ECB but must comply with ER 385-1-95. The requirements for the safe use, storage and transportation of commercial explosives on non-military lands/installations are found in EM 385-1-1. Projects involving the design, construction, or modification of facilities that manufacture, store, handle, maintain, develop, demilitarize, test, or dispose of ammunition or explosives (AE), and facilities within the Explosives Safety Quantity Distances (ESQD) of AE facilities require the involvement of the Facilities Explosives Safety (FES) Mandatory Center of Expertise in accordance with ER 1110-1-8169.

4. **Background.** Blasting for rock excavation demolitions is common in USACE projects. However, numerous incidents of fly-rock, cratering, rifling, etc. have occurred during blasting, causing over-excavation, fractured foundations, and potential safety issues. It is imperative that qualified personnel are involved in the preconstruction engineering and design development, review of contractor blasting plans, and construction oversight to ensure that the design intent is met safely.

5. Roles and Responsibilities.

a. Districts are responsible for ensuring that design and construction teams contain personnel with appropriate qualifications (experience and education) to develop plans and specifications, review blasting plans, and coordinate and oversee blasting efforts during construction. Districts are also responsible for coordinating with their Safety Officer when blasting is to be used on a project or when explosives are planned to be stored on site.

b. MSCs and other Review Management Organizations are responsible for ensuring compliance with this regulation through their Quality Assurance review function and ensuring that Level I Corps of Engineers Reviewer Certification and Access Program (CERCAP) applicants meet the qualifications and have the expertise to perform the required reviews for more routine blasting projects.

c. HQ-Engineering and Construction is responsible for developing policy and guidance for blasting for rock excavation, and rock production. Additionally, HQ is responsible for ensuring that Level II CERCAP applicants meet the qualifications and have the expertise to perform the required reviews for highly complex blasting projects or blast incidents.

6. Design. During design, any project that is proposing or would allow blasting for rock production or excavation must be reviewed by CERCAP-certified Agency Technical Review (ATR)/Independent Technical Review (ITR) personnel with expertise in blasting, either Level I or II, depending on complexity of the project. This applies to designs produced by Architect Engineering (AE) firm or in-house.

7. Construction.

a. During construction, blasting oversight is critical to ensuring quality objectives are met. While the Contractor is responsible for developing quality blast plans and carrying out safe blasting operations, it is imperative that the Government adequately oversees that work. The same or comparable ATR reviewer from design must review all Master Blast Plans and oversee test blasts. That individual must support day to day blasting operations in an oversight role until such time as on-site government staff can be trained to provide the oversight and until production blasting is occurring consistently with high quality results. In the absence of a government employee with the capacity to provide this support, AE resources should be considered but must meet the same experience and expertise as would be required for a CERCAP-certified ATR reviewer, Level I or II, depending on project complexity.

b. Quality Assurance representatives assigned to oversee blasting operations must receive blasting training prior to field activities. This training can be either formal training through the Geotechnical Engineering, Geology, and Materials Community of Practice's Visiting Scholar's Program or other commercial training deemed appropriate by the Lead Geologist/Geotechnical Engineer OR focused on the job training from the Lead Geologist/Geotechnical Engineer. Appropriate safety training aspects for the project must be coordinated with the District Safety Officer.

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c. Any incidents (unexpected fly-rock, other safety incidents) should be fully investigated by the Government and Contractor. An after-action report (AAR) must be performed to determine cause of the incident and determine if new procedures are required to prevent its recurrence. That AAR must be reviewed by CERCAP-qualified ATR/ITR reviewer to ensure an adequate investigation was performed and that appropriate responses are occurring.

8. **Funding.** All funding to support the efforts described in this ECB shall come from the specific project requiring the reviews and resources.

9. **Update.** The requirements included in this ECB will be included in a forthcoming new Engineering Regulation governing blasting oversight qualifications.

10. **Point of Contact.** HQUSACE point of contact for this ECB is Dr. Georgette Hlepas, CECW-EC, georgette.hlepas@usace.army.mil.

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