

MEMORANDUM FOR ARMY BOARD MEMBER, COLONEL PATRICK DUNKLE
NAVY BOARD MEMBER, CAPTAIN MIKE HERB
AIR FORCE BOARD MEMBER, MR. PAUL PRICE
MARINE CORPS BOARD MEMBER, MR. JERRY MAZZA

SUBJECT: Risk-Based Explosives Safety Siting

The Department of Defense Explosives Safety Board held its 321st meeting on 5 December 2001 and updated its approval for the limited use of risk-based explosives safety siting of explosives facilities for calendar years 2000 through 2004 with the following guidance:

“On a case-by-case basis as determined by the Service, a risk-based explosives safety analysis that supports an explosives facility siting may be submitted to the DDESB Secretariat for review and approval under the following guidelines:

- There is a current quantity-distance (QD) waiver or exemption in place, or one would be required and justified to approve the facility. In the latter case, the Service will determine procedures for approval, and will approve the justification. The Service-approved justification will be provided with the risk-based explosives safety analysis; this justification is provided for information purposes only and is not subject to Secretariat approval.
- The Safety Assessment for Explosives Risk (SAFER) model, Version 2.0, and acceptance criteria (attached) are used. SAFER Version 1.0 may still be used for a six-month period after Version 2.0 is fielded to allow for training of personnel in the use of Version 2.0. After six months from fielding, Version 2.0 must be used.
- SAFER should evaluate risks to exposed sites (ESs) out to the distance where individual risks drop below 1×10^{-8} or IBD, whichever is greater. That is, stop when risks cease to contribute significantly. This threshold should be reevaluated after the trial period.
- SAFER should evaluate potential exposed sites (PESs)/ESs exposed to a new PES and include risks from all other PESs. Initially, group risk criteria will be advisory. Advisory nature of the group risk criteria should be reevaluated after the trial period.
- SAFER should use the full siting amount (net explosive weight) and full yield.
- The results of the SAFER analysis meet the attached criteria.

- All risk-based explosives safety analyses are to be reviewed by a review panel with recognized qualifications consisting of five appointed members (one from each service and one from the Secretariat) that are nominated by the RBESCT and approved by the DDESB Chairman. Any dissenting opinions on proper application of the model are to be incorporated into the Service submission along with Service response to the dissenting opinion.”

The Board also encourages the Services to use SAFER as a risk management and reduction tool. It has demonstrated utility in identifying driving risk factors that can then be mitigated. It can be used to evaluate waivers and exemptions in support of their waiver and exemption approval process. Uses of SAFER for risk management and reduction are not subject to Secretariat review or approval.

The Board recognizes the long-term goal of placing risk-based quantitative assessments on parity with traditional application of Q-D requirements. When met, either method could be used and the existence or justification for a waiver or exemption would not be required. The Board will assess approval of this approach after evaluation of the results of the trial period ending 31 December 2004.

The Board also recognizes that a capability for uncertainty analysis is being developed for SAFER Version 2.0. Uncertainty analysis is not required for risk-based explosives safety analyses until criteria for its use have been approved by the Board.

The Board directed that the Services continue to provide an annual status report on the implementation of this program.

/s/William E. Wright
WILLIAM E. WRIGHT
Captain, US Navy
Chairman

/s/Patrick Dunkle
PATRICK DUNKLE
Colonel, USA
Army Member

/s/Mike Herb
MIKE HERB
Captain, USN
Navy Member

/s/Paul D. Price
MR. PAUL D. PRICE
Air Force Member
Attachment:
Acceptance Criteria

/s/Jerry Mazza
MR. JERRY MAZZA
Marine Corps Member

cc:

Alternate Army Board Member, Mr. Gary Abrisz

Alternate Navy Board Member, Mr. Richard Eldridge

Alternate Air Force Board Member, Colonel Daniel Tompkins

Alternate Marine Corps Board Member, Colonel Henry C. Dewey

*Risk to:	DDESB Criteria	Service Guidance
Any 1 worker (Annual P_f)	Risks below 1×10^{-4} are required	<ul style="list-style-type: none"> • If risks are above 1×10^{-4} apply ALARP principle** • Accept only if strategic and compelling need
All workers (Annual E_f)	Risks below 1×10^{-3} are desirable (but not mandatory)	If risks are above 1×10^{-3} apply ALARP principle
Any 1 person (Annual P_f)	Risks below 1×10^{-6} are required	<ul style="list-style-type: none"> • If risks are above 1×10^{-6} apply ALARP principle • Accept only if strategic and compelling need
All public (Annual E_f)	Risks below 1×10^{-5} are desirable (but not mandatory)	If risks are above 1×10^{-5} apply ALARP principle

* Worker criteria are intended to apply to people that are associated with the explosives activity. Public criteria are intended to apply to 1) government employees working on the installation but not related to the explosives activity, and 2) the general public.

** ALARP is the safety principle whereby risks are lowered “as low as reasonably practicable.”