General

Los Alamos National Laboratory/University of California
Risk Reduction & Environmental Stewardship (RRES)
Remediation (R) Program, MS M992
Los Alamos, New Mexico 87545
(505) 667-0808/FAX (505) 665-4747

National Nuclear Security Administration.
Los Alamos Site Operations, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-7203/FAX (505) 665-4504

Date: May 14, 2003
Refer to: ER2003-0348

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MAY 2003

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

SUBJECT: REQUEST FOR REVISED 2003 MAP DELIVERABLE – ADDITIONAL INFORMATION

Dear Mr. Young:

In response to your February 21, 2003 letter requesting revised maps, the Los Alamos National Laboratory and the Department of Energy are providing the attached memorandum from John McAfee and Jerry Vasilik of DX Division concerning the calculation of the hazard distances for Los Alamos firing sites. These calculations were used in preparing the map deliverable that was provided to NMED on March 31, 2003. LANL personnel provided NMED a briefing on the contents of this memorandum on April 2, 2003.

Please contact Don Hickmott at (505) 665-1116 or Lance Woodworth (505) 665-8820 should you have any questions.

Sincerely,

David McInroy, Acting Program Manager
Remediation Program
Los Alamos National Laboratory

Sincerely,

for

David Gregory, Project Manager
Department of Energy
Los Alamos Site Operations

DM/DG/vn

Enclosure: 1) Hazardous Distances for Los Alamos Firing Sites Memorandum
2) Logic Diagram for Determining a Hazardous Distance from a Firing Site
3) Table 1: Hazardous Distances for the Active Los Alamos Firing Sites
4) Locus of Hazardous Distances and the Safety and Security Buffer Zone for the Los Alamos Firing Sites

Cy:(w/enc)
D. Hickmott, RRES-R, MS M992
J. McAfee, DX-DO, P918
N. Quintana, RRES-R, MS M992
J. Vasilik, DX-4, C925
D. Gregory, LASO, MS A316
E. Louderbaugh, LC-ESH, A187
B. Osheim, LASO, MS A316
D. Woitte, LC-ESH, A187
J. Davis, NMED-SWB
J. Kieling, NMED-HWB
S. Yanicak, NMED-OB
L. King, EPA Region 6
RRES-R File, MS M992
CT File #C887
IM-5, MS A150
RPF MS M707

Cy:(w/o enclosure)
D. McInroy, RRES-R, MS M992
L. Nonno, RRES-R, MS M992
B. Ramsey, RRES-DO, MS J591
J. Vozella, LASO, MS A316
L. Woodworth, LASO, MS A316
J. Bearzi, NMED-HWB
J. Parker, NMED-OB

Los Alamos
NATIONAL LABORATORY

memorandum

Dynamic Experimentation Division (DX)

To/MS: D. D. Hickmott, EES-6, D462
Thru: L. M. Woodrow, DX-DO, P918
From/MS: J. M. McAfee, DX-DO, P918
G. D. Vasilik, DX-4, C925
Phone/Fax: 7-6874/Fax 5-3407
E-mail: mcphi@lanl.gov

Symbol: DX-DO:03-015
Date: May 7, 2003

Hazard Distances for Los Alamos Firing Sites

This memo documents the determination of hazard distances from the active Los Alamos National Laboratory (LANL) explosive firing sites. These distances are meant to define the areas around each firing site we consider as the active range. Within these areas it is reasonable to expect either blast or fragment (shrapnel) affect when the specific site operates at its design or administrative limit.

The ranges were calculated using the methodology given by the "DOD Ammunition and Explosives Safety Standards" (DOD 6055.9-STD). Use of this standard is specified in the "DOE Explosives Safety Manual" (DOE M 440.1-1). The standards used are for the destruction of ammunition, demonstrations, and explosive ordnance disposal (EOD) given in Chapter 5. Demonstrations and EOD essentially constitute testing as performed at the LANL firing sites.

To apply the DOD Standard, we developed a logic that applies the standards to our situations. This logic is diagrammed in Fig. 1. The determination of the hazard distance takes into account the design limits of the various firing facilities, the particular operations performed at each site, and any distance constraint due to proximate facilities or public roads. The data used for these determinations and the resulting hazard distances are given in Table 1.

The locus of these hazard distances are shown on the map in Fig. 2, along with the Safety and Security Buffer Zone that circumscribes all the explosive testing areas.

JMM:tdm

Enc: a/s

Distribution:
M. Y. P. Hockaday, DX-DO, P918
J. V. Repa, DX-DO, P918
D. R. Montoya, DX-1, P950
R. C. Dye, DX-2, C920
M. V. Zumbro, DX-3, P940
E. A. McNamara, DX-4, C925
R. D. Scarpetti, DX-6, P942
DX-DO File

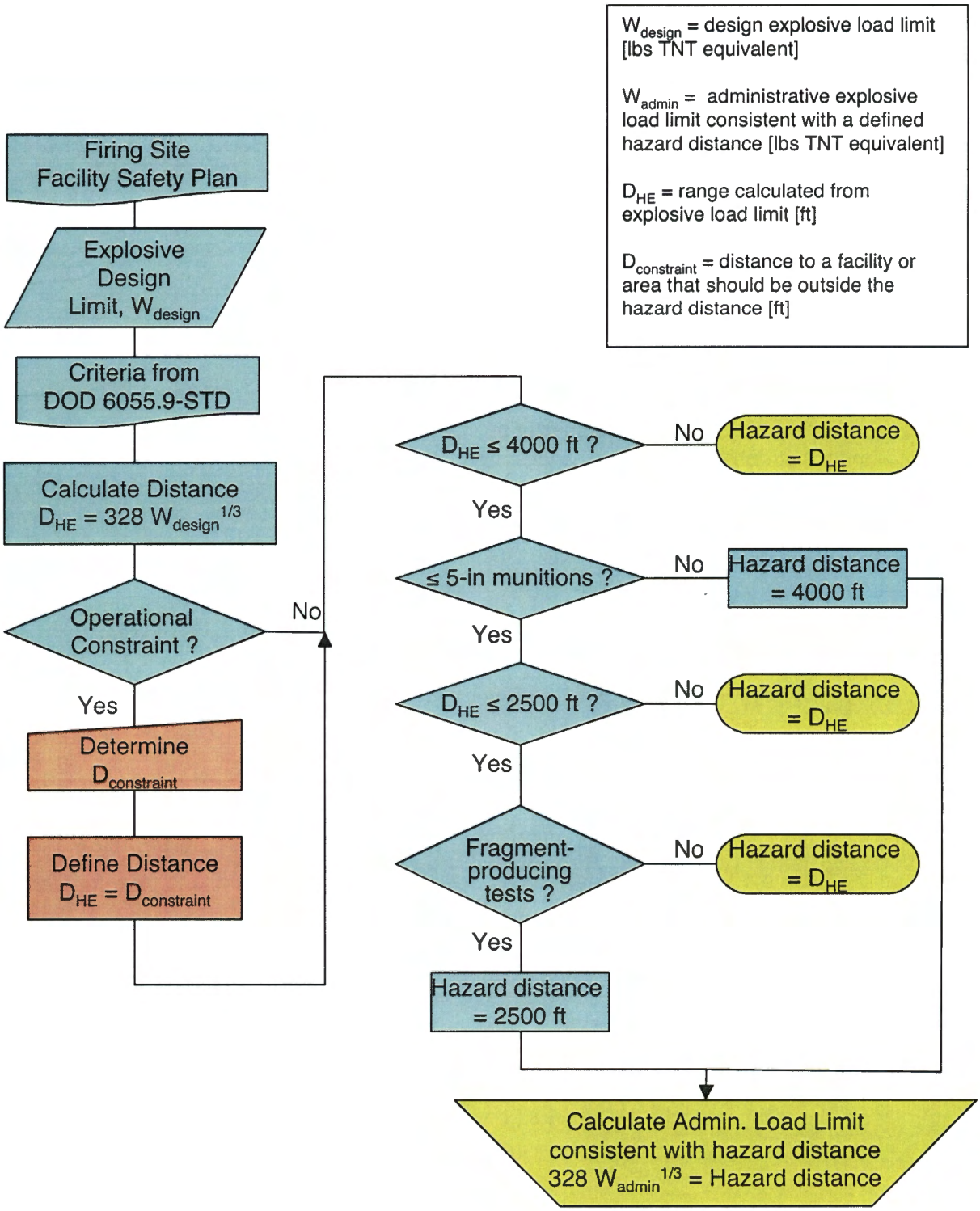

Fig. 1. Logic diagram for determining a hazard distance from a firing site using the requirements from DOD 6055.9-STD

April 1, 2003

Table 1. Hazard distances for the active Los Alamos firing sites.

Firing Site Name	Principal Location	Design Load [lbs TNT equivalent]	Design Load Hazard Distance [ft]	Closest Constraint Distance (approximate) [ft]	Use ≥ 5-in caliber bombs or projectiles ?	Use fragment-producing materials ?	Hazard distance [ft]	Administrative load limit (if different from design) [lbs TNT equivalent]
Drop Tower	TA-11-25	N/A		~3600	no	yes	2500	500
Q-site East	TA-14-23	65	1300	-	no	no	1300	
Q-Site West	TA-14-39	10	700	-	no	no	700	
R-306	TA-15-306	125	1600	-	no	yes	2500	
PHERMEX	TA-15-310	2000	4100	~6100	no	yes	4100	
DARHT	TA-15-312	289	2200	~5300	no	yes	2500	289*
Eenie	TA-36-3	1000	3300	-	no	yes	3300	
Meenie	TA-36-6	5000	5600	~4400	yes	yes	4000	2000
Minie	TA-36-8	5000	5600	~4700	yes	yes	4000	2000
Lower Slobbovia	TA-36-12	5000	5600	~2800	no	yes	2500	500
LS Sled Track	TA-36-12	5000	5600	3200 to 2800	no	yes	2500	500
Point 6	TA-39-6	500	2600	~3000	no	yes	2500	
Point 57	TA-39-57	1000	3300	~5000	No	Yes	3300	
Point 88	TA-39-88	2000	4100	~4700	yes	yes	4000	
Chamber 4	TA-40-4	150	1700	~3800	no	yes	2500	
Chamber 15	TA-40-15	150	1700	~3100	no	yes	2500	
EOD	TA-49-113	50	1200	1900	no	no	1200	

*Mandated safety basis, SABT:3BK-055, dated March 27, 2001

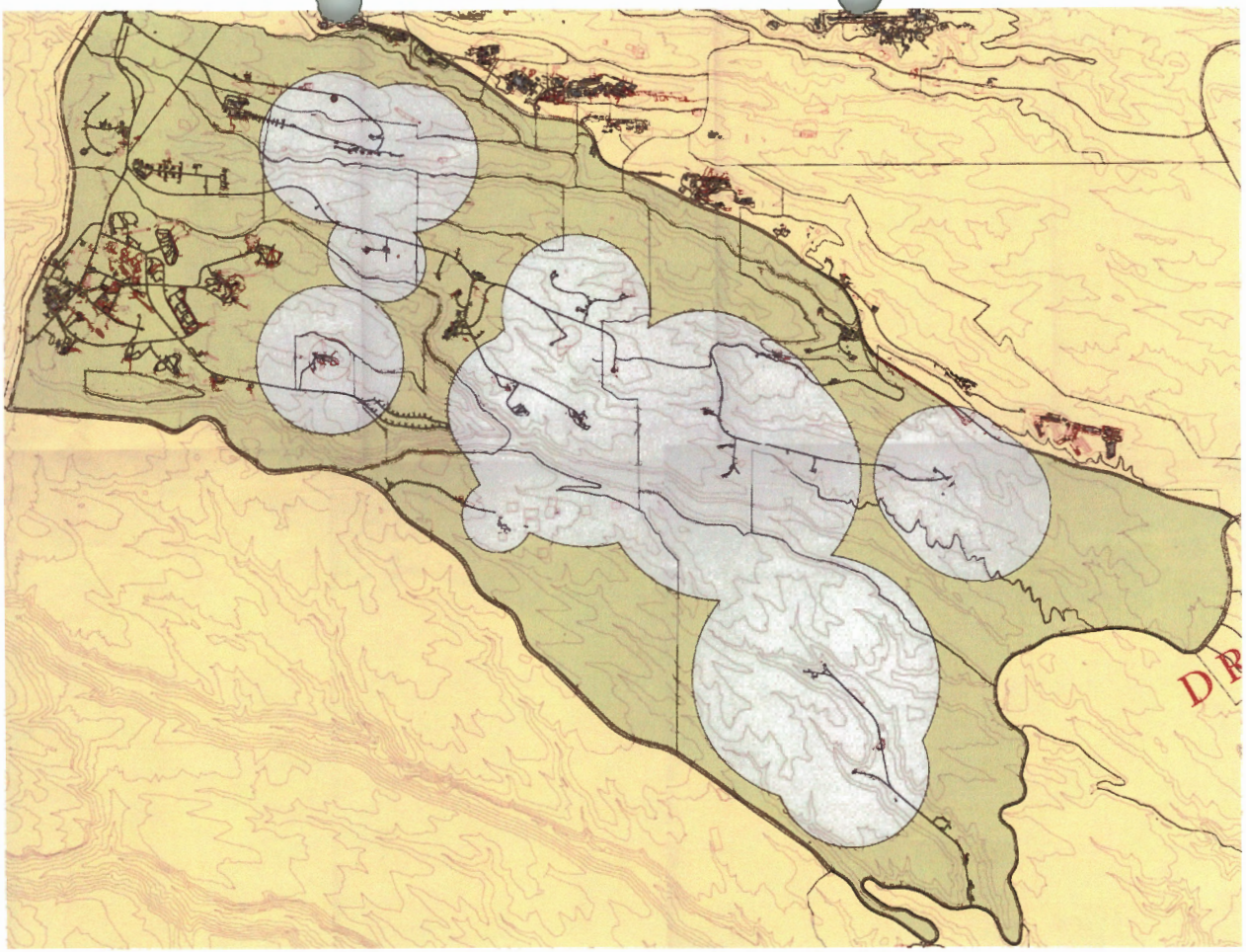

Fig. 2. The locus of hazard distances and the Safety and Security Buffer Zone for the Los Alamos firing sites.