CORRES. CONTROL
OUTGOING LTR. NO.
DOE ORDER # 4700.1
02-RF-01860

DIST.	LTR	ENC
BACA, T.		
BRAILSFORD, M.D.		
CARD, R. G.		
FERRERA, D.		
FULTON, J.C.		
MARTINEZ, L. A.		
POWERS, K.		
SCOTT, G.K.		
SHELTON, D.C.		
SPEARS, M.S.		
TRICE, K.D.		
TUOR, N. R.		
BEAN, C.		
BUTLER, J. L.		
CARLSON, R		
CLARK, D		
COLALANCIA, M	X	X
CUTLIP, D.	X	X
DORR, K.		
FARRELL, R. E.		
FOSS, D.	X	X
GEIS, A.	X	X
HUMISTON, T.	X	X
ITO, F. M.		
JENKINS, K.		
KEHLER, K.		
KONWINSKI, G.		
MCEAHERN, P. M.		
MOTES, J. L.		
MYERS, K.		
NESTA, S.		
OMBERG, S.	X	X
PRIMROSE, A.		
SNYDER, D.	X	
SWENSON, B. A.		
WIEMELT, K.		
GUTHRIE, C. L.		
McANDREW, J.		
PARSONS, D.		
CORRES.CONTROL	X	X
ADMIN RECORDS	X	X
TRAFFIC		
PATS/130		

CLASSIFICATION:		
UCNI		
UNCLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE:
/s/ Carlo Caimi
Date: 8/21/02
IN REPLY TO RFP CC NO.:

ACTION ITEM STATUS:
☐ PARTIAL/OPEN
☐ CLOSED
LTR APPROVALS:

RIG. & TYPIST INITIALS:
DP:wjd

RF-46469(Rev.9/94)

112

KAISER•HILL
COMPANY

02-RF-01860

AUG 21 2002

Ronald G. Bostic
Director, Nuclear Regulatory Division
DOE, RFFO

SUBMITTAL OF JUSTIFICATION FOR CONTINUED OPERATION RFP-02.2252-SKO, EXPLOSIVE DEMOLITION DEMONSTRATION AT BUILDINGS 125 AND 126 DPS-023-02

The purpose of this letter is to submit to the Department of Energy (DOE), Rocky Flats Field Office (RFFO), the subject Justification for Continued Operation (JCO)-RFP-02.2252-SKO attached for approval.

The purpose of JCO-RFP-02.2252-SKO is to authorize transportation and use of Department of Transportation (DOT) Class I explosives (as defined in 49 CFR § 173.52) in demolition demonstration activities to be conducted in Buildings 125 and 126. This JCO is predicated on the successful designation of the affected areas of Buildings 125 and 126 as Type I facilities that meet unrestricted release criteria for radiological contamination, and the completion of asbestos abatement work in Building 125.

JCO-RFP-02.2252-SKO authorizes the onsite transportation and use of DOT Class I, Division 1 or 2 explosives (as defined in 49 CFR § 173.52) for use in demolition demonstration activities to be conducted in Buildings 125 and 126. This JCO will be in effect only for the discrete time period necessary to allow the onsite transport and use of said explosives for the purpose of demonstrating duct and piping removal in Building 125 and scabbling of concrete surfaces in Building 126. No authorization basis document changes are required for this one-time activity.

Pertinent restrictions and controls required to maintain nuclear facility safety, worker safety, and Site security are specifically identified in the JCO. The JCO-designated route to Buildings 125 and 126 will minimize the potential risk to any Site nuclear facility, based on the calculated blast overpressure from an inadvertent detonation of the maximum amount of explosives permitted on the transport vehicle. Prior to onsite transportation of the

Kaiser Hill Company, L.L.C.
Rocky Flats Environmental Technology Site, 10808 Hwy. 93 Unit B, Golden CO 80403-8200 ♦ 303-966-7000
ADMIN RECORD
IA-A-001055

demolition explosives, traffic control points will be established to restrict vehicle traffic from the designated transportation route and the 100-foot exclusion zones centered around Buildings 125 and 126.

It is requested that DOE, RFFO approve this JCO within two (2) weeks to support the planned demonstration activity in September 2002.

If you have any questions or comments, please contact me at extension 5420.

D. P. Snyder
Deputy Project Manager, RISS Safety
Kaiser-Hill Company, LLC

SKO:wjd

Attachment:
As Stated

Orig. and 1 cc - Ronald G. Bostic

cc:
Donald F. Owen - DNFSB

2

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RFETS Nuclear Safety
Justification for Continued Operation (JCO)
Cover Sheet

JCO No.: **JCO-RFP-02.2252-SKO** Revision No. **0**		Building RFP	Page 1 of 10
Title: **Explosive Demolition Demonstration at Buildings 125 and 126**			Charge #: EFDT4R-AF
Preparer			Date
Prepared: Susan K. Omberg (Print Name)	Susan K Omberg (Sign Name)		8/19/02
Reviewer			Date
Approved: Marco Colalancia (Print Name)	(Sign Name)		8.20.02
RISS Project Manager or Designee			Date
Approved: Denny Ferrera (Print Name)	Denny Ferrera (Sign Name)		8/20/02
ISRC Chair			Date
Approved R. WALKER (Print Name)	(Sign Name)		8.20.02
PRC/ORC/ISR Meeting No. SISRC02-09			

REVISION DOCUMENTATION

Reason for Revision:

Reviewed for Classification/UCNI
By: Carlo Carini
Title: Engineer
Date: 8/21/02 U/NU

3

1. **Purpose:** The purpose of this justification for Continued Operations (JCO) is to authorize transportation and use of Department of Transportation (DOT) Class 1 explosives (as defined in 49 CFR §173.52) in demolition demonstration activities to be conducted in Buildings 125 and 126.

2. **Scope:** This JCO applies to transportation and use of DOT Class 1 explosives for the specific purpose of conducting demolition demonstration activities in Buildings 125 and 126. Restrictions and controls that will be required during the period of on-Site transportation and use of explosives are specifically addressed.

Building 125, the former Metrology Laboratories, and 126, a former Source Calibration and Storage facility, are no longer occupied, and are scheduled for demolition. The scope of this project is to utilize these empty facilities for demonstration of explosive demolition technologies, specifically, the use of explosives for cutting of pipe and duct supports, and for scabbling of concrete walls.

Building 125
Building 125, the former Metrology Laboratories, is a single-story steel-frame and metal-panel structure. The building was provided with an automatic wet-pipe sprinkler system, which provided protection for the mechanical and ventilation areas in Rooms 109, 124, and 125; this system has been removed from service. The remainder of the building was provided with smoke detection; this system has also been removed from service. All equipment of value has been removed from the building. The building does not contain radioactive material, but does contain asbestos. Demolition demonstration activities in Building 125 are planned to consist of the use of explosives for cutting of pipe and duct supports.

Building 126
Building 126, a former Source Calibration and Storage facility, is a single-story reinforced concrete structure. The facility is not provided with any fire detection, alarm, or suppression system. The building no longer contains radioactive material. Demolition demonstration activities in Building 126 are planned to consist of the use of explosives for scabbling of concrete walls.

Description of Activities
Prior to the proposed demolition demonstration activities, surveys will be performed to ensure that the structure and contents of Buildings 125 and 126 to be used in this demonstration meet unrestricted release criteria for radiological contamination. Also prior to the proposed activities, asbestos abatement efforts in Buildings 125 and 126 will be completed. Sections of pipe and duct for which the supports will be severed using explosives will be cut using mechanical means.

The proposed demolition activity will occur during the normal Site work week. On each day of the proposed demolition demonstration activities, a 100-ft exclusion zone will be established around the building in which demolition demonstration activities will be conducted, and around the designated parking area for the explosives transport vehicle. These exclusion zones are shown in Figures 1 and 2. Site announcements will be made to notify personnel of sheltering and evacuation requirements for facilities adjacent to Buildings 125 and 126 and the designated parking area, and along the designated transportation route. Traffic control points will be established to restrict traffic in the exclusion zone and along the transportation route for the explosives transport vehicle. The explosives transport vehicle will enter the Site through the West Gate. It will be met at the West gate by Security Force personnel, who will inspect the vehicle for prohibited items, and to ensure that the amount and type of explosives on the vehicle do not exceed the Net Explosive Weight (NEW) authorized by this JCO. Following the inspection, the explosives transport vehicle will be escorted onto the Site property. During the entire time the vehicle is onsite, it will be escorted by Security Force personnel. The explosives transport vehicle will be restricted to a pre-designated route, which is: West Access Road to First Street, north on First Street to Central Avenue, east on Central Avenue to the Building 119 parking lot entrance, south through the Building 119 parking lot between Buildings 119 and 119B, turning east to pass to the immediate south of Building 119 and entering the parking area immediately west of Building 125 from the west side. This route is shown in Figure 3.

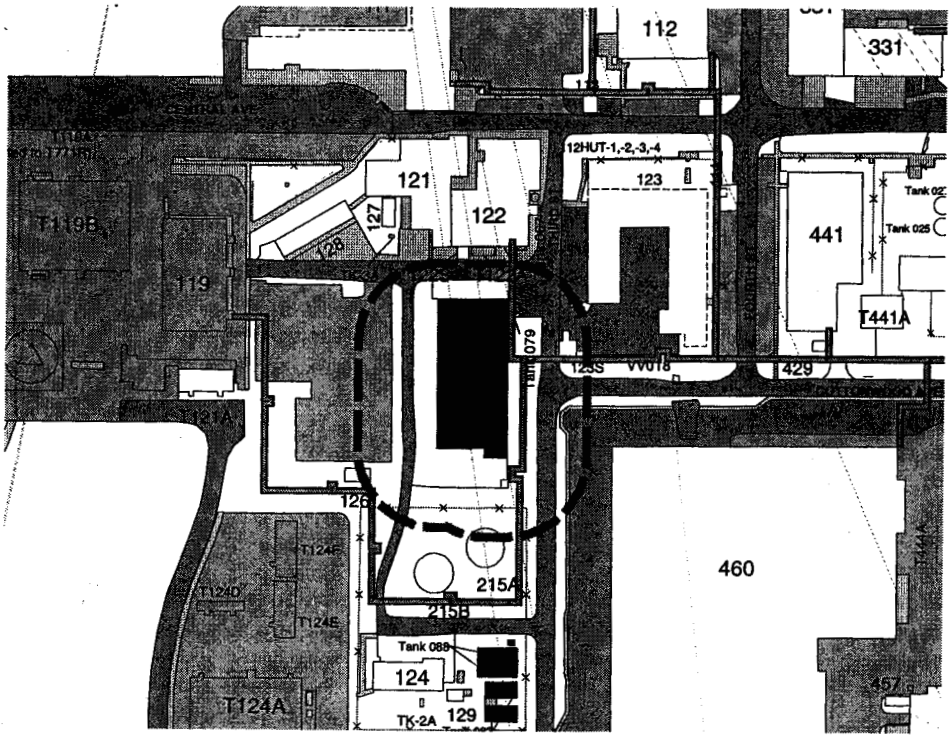

Figure 1. Building 125 – 100 foot Exclusion Zone

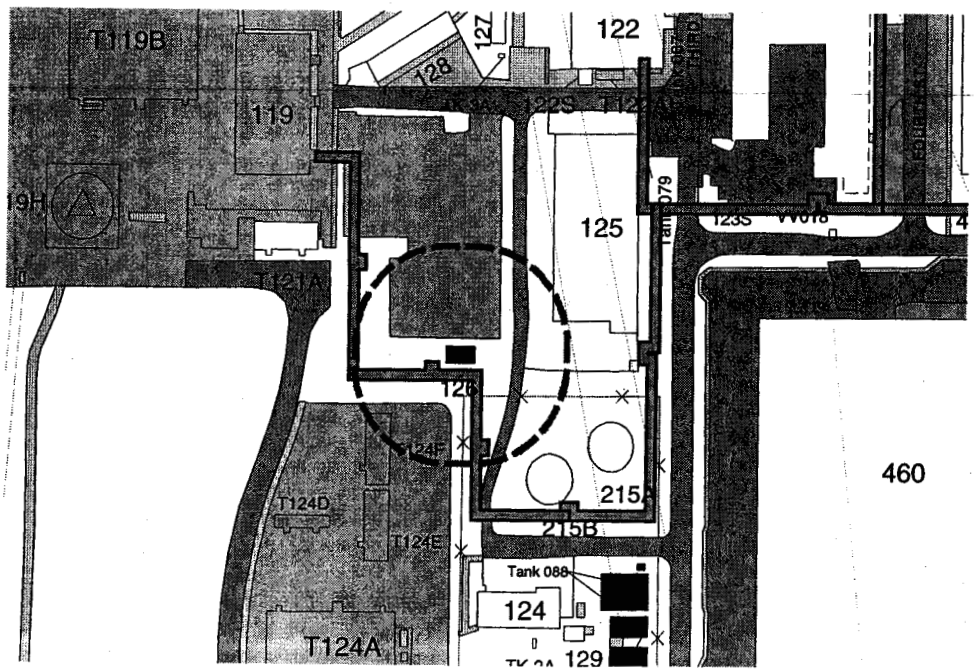

Figure 2. Building 126 – 100 foot Exclusion Zone

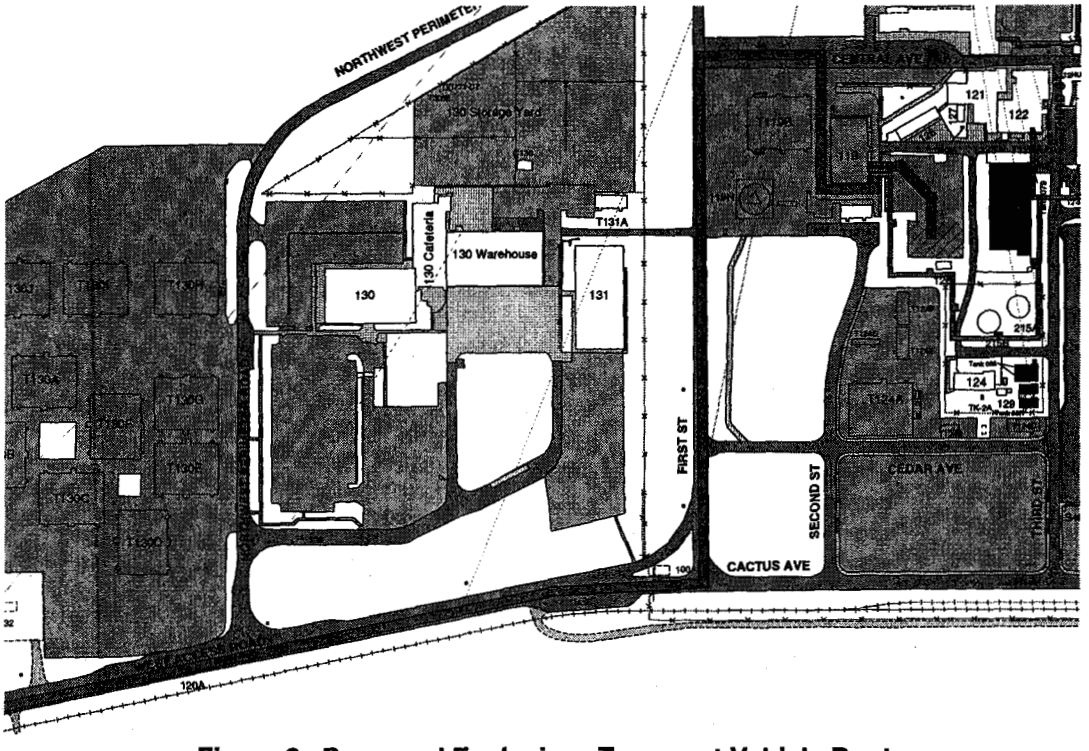

Figure 3. Proposed Explosives Transport Vehicle Route

The explosives transport vehicle will carry no more than a total of 80 lbs. Net Explosive Weight (NEW) (TNT equivalent). The actual planned inventory of the vehicle is as follows:

Phase I (Building 126)	Phase II (Building 125)
PETN Sheet Explosives: ~35 lbs	Linear Shaped Charges (RDX): < 2 lbs
Linear Shaped Charges (RDX): ~13 lbs	Explosive Rock Bolt Cutters: ~ 4 lbs
Electric Blasting Caps: < 1 lb	Electric Blasting Caps: < 1 lb
Non-Electric Millisecond Delays: < 1 lb	Non-Electric Millisecond Delays: < 1 lb
18-Grain Detonating Cord: < 3 lbs	18-Grain Detonating Cord: < 2 lbs

This equates to no more than 80 lbs. NEW (TNT equivalent) for Phase I, and 15 lbs. NEW (TNT equivalent) for Phase II, as shown in CALC-RFP-02.1972-SKO, *Evaluation of Explosive Demolition Demonstration at Buildings 125 and 126.*

Upon installation of charges, the following protective measures will be put in place: sheet explosives and linear shaped charges to be used for explosive scabbling will be backed with flexible conveyor belting and geotextile fabric; linear shaped charges and explosive rock bolt cutters to be used for pipe and duct lowering will be covered with conveyor belting, geotextile fabric, and/or plywood. These measures are designed to minimize fly of debris. The explosive demolition contractor will perform background monitoring to establish ambient vibration levels around the structure, and will place seismographs on all sides of the structure to measure the immediate effects of each blast, and in a linear array to generate site-specific data on the fall-off of vibration and air pressure with distance. Seismic and air pressure readings from each blast will be used to refine subsequent activities.

Prior to each detonation, additional Site announcements will be made to notify personnel of evacuation and sheltering requirements. Security Police Officers will perform a final sweep of the affected area to ensure that all personnel are safely evacuated/sheltered as required. All activities will be coordinated with Security and the Site Shift Superintendent, who will provide final approval to proceed with each detonation.

Should unanticipated conditions occur, Security and/or the Shift Superintendent will have the authority and means of communication to stop detonation activities at any time.

It is planned to detonate all charges on the same day they are placed. The explosives transport vehicle will leave the Site each day, under escort by Security Force personnel and by the previously designated route, after placement of charges. The vehicle is expected to be empty at this time. However, any explosive materials determined to be unnecessary to planned activities will be removed from Site by the explosives transport vehicle. No explosive materials will remain onsite overnight.

3. **Description of the Condition that is Outside the Approved Authorization Basis (AB):** The Rocky Flats Environmental Technology Site Safety Analysis Report (Site SAR), Chapter 8, Transportation, specifically states that no (DOT) Class 1.1 or 1.2 explosives are allowed on Site, and the transfer of explosives is not covered by the Site SAR transportation evaluation. Nuclear facility Preliminary Hazards Assessments and Authorization Basis documents do not address or evaluate specific hazards associated with the presence or use of DOT Class 1.1 or 1.2 explosives.

4. **Portions of AB Document Applicable to the JCO:**

Site SAR, Chapter 3, Site Configuration, Support Systems, and Utilities
Site SAR, Chapter 8, Transportation

5. **Allowed Conditions and Operating Restrictions:**

1. This activity will occur during the normal work week.

2. Site vehicular traffic along the designated route of the explosives transport vehicle and within the established 100-ft exclusion zone will be limited as established by Operations Order.

3. The explosives transport vehicle shall not carry more than 80 lbs. NEW (TNT equivalent) of DOT Class 1 explosives.

4. The demolition contractor shall be licensed and approved to transport and use DOT Class 1 explosives, and shall follow all applicable Federal, State, and local requirements regarding the transportation and use of DOT Class 1 explosives for demolition purposes.

5. The explosives transport vehicle will be escorted by Security Force personnel at all times while on Site.

6. The time period during which explosives remain onsite will be minimized. All preparations for charge placement will be completed prior to allowing the explosives transport vehicle on Site. Any unused explosives will be removed from the Site as soon as the final charges are placed.

6. **Required Controls for Equipment, Operations, and Activities in Affected Projects/Facilities:**

The following controls and restrictions will be implemented by Special Security Plan W02-008, Operations Order, and contract:

1. No outdoor nuclear material transfers will be permitted south of Sage Avenue or west of Seventh Street while explosives are being transported on Site. This control may be lifted after final charges are place and the explosives transport vehicle has left the Site.

2. Personnel in selected facilities along the designated route of the explosives transport vehicle (Buildings 119, T119B, and 128) will be sheltered for the duration of transportation activities. Occupancy of Building S120 will be prohibited for the portion of transportation activities resulting in the presence of the explosives transport vehicle adjacent to this facility.

7

3. Personnel in facilities within the established 100-ft exclusion zone(s) as shown in Figures 1 and 2 will be sheltered for the duration of explosive detonation activities.

4. The explosives transport vehicle will obey posted Site speed limits, and will be escorted by Security Force personnel at all times.

5. The explosives transport vehicle will be restricted to a designated route, limited to the roads shown in Figure 3.

6. The explosives transport vehicle will not travel within 50 feet of any nuclear facility, unless required by Security Force personnel or emergency conditions.

7. Risk Resulting from Conditions, Operations, and Activities in Projects/Facilities Affected by the Condition that is Outside the Approved Authorization Basis:

Nuclear Safety Calculation CALC-RFP-02.1972-SKO, Evaluation of Explosive Demolition Demonstration at Buildings 125 and 126, determines the potential for damage to nuclear and other facilities as a result of transportation and use of Class 1 explosives during demolition demonstration activities. This calculation specifically discusses the potential for damage to facilities adjacent to Buildings 125 and 126, based on inadvertent detonation of 15 lbs. NEW (TNT equivalent) to be used in Building 125 demonstration activities, and 80 lbs. NEW (TNT equivalent) to be used in Building 126 demonstration activities. The calculation also addresses the potential consequences of inadvertent detonation of this material in the transport vehicle along the designated transportation route. Based on a maximum assumed detonation of 80 lbs. NEW (TNT equivalent), the resulting overpressures would cause failure of corrugated metal panels or trailer walls at a distance of 180 feet or less; for concrete block structures, the overpressure required for failure would be experienced at a distance of approximately 110 feet. For a maximum assumed detonation of 15 lbs. NEW (TNT equivalent) the resulting overpressures would cause failure of corrugated metal panels or trailer walls at a distance of 105 feet or less; for concrete block structures, the overpressure required for failure would be experienced at a distance of approximately 65 feet. These potential damage zones are shown in Figures 4 and 5.

CALC-RFP-02.1972-SKO provides the following conclusions:

> *"The planned route for the explosives transport vehicle will minimize potential exposure to nuclear facilities. No nuclear facilities have significant exposure to an inadvertent detonation during transportation, as the vehicle will not travel close enough to any nuclear facility that the facility could experience overpressures sufficient to cause damage due to inadvertent detonation during transportation. In addition, no nuclear facility is close enough to the proposed location of demolition demonstration activities that it could experience overpressures sufficient to cause damage from an inadvertent detonation during these activities, or in the designated parking area for the explosives transport vehicle. Several non-nuclear facilities (T121A, T124E, and T124F) would suffer damage from an inadvertent detonation during Phase I of the demonstration activity; additional facilities (120, 120A, 120B, S120, 119 and T119B) would be subject to damage in the event of inadvertent detonation during transportation. The proposed 100 foot exclusion zone is adequate to protect personnel unshielded by any structure from ear drum rupture due to overpressure."*

During the proposed on-Site transportation of explosives, the designated route will ensure that the explosives transport vehicle will not pass within 50 feet of any nuclear facility. Nuclear Safety Calculation CALC-761-01.1696-VLP, *Explosive Demolition of Guard Towers*, previously concluded that the vulnerability distance for a concrete structure is 50 feet, based on the inadvertent detonation of 139 lbs. NEW (TNT equivalent). The maximum NEW to be transported in this proposed evolution, 80 lbs. TNT equivalent, is less than 60% of the quantity evaluated in CALC-761-01.1696-VLP.

8

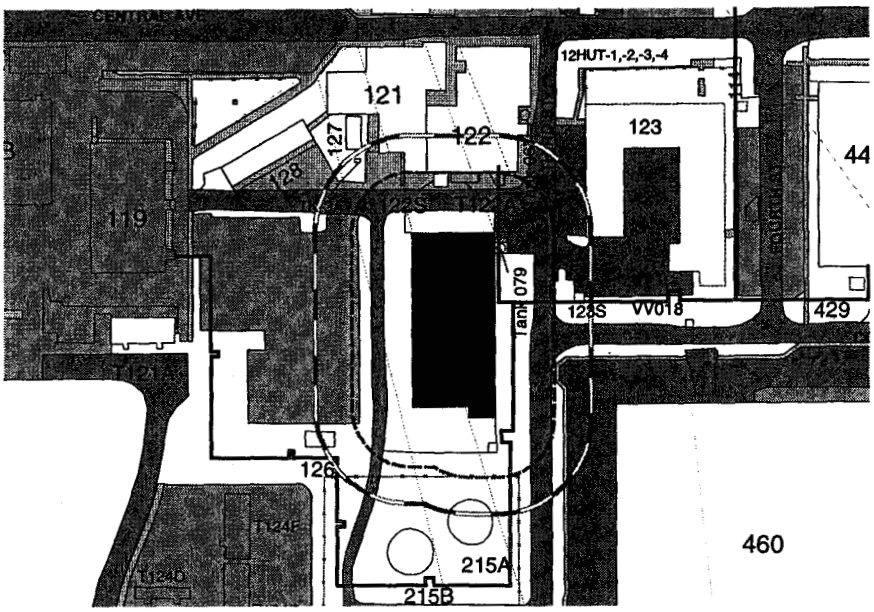

Figure 4. Building 125 - Damage Zones for Concrete Block Buildings (65 ft) and Trailers (105 ft)

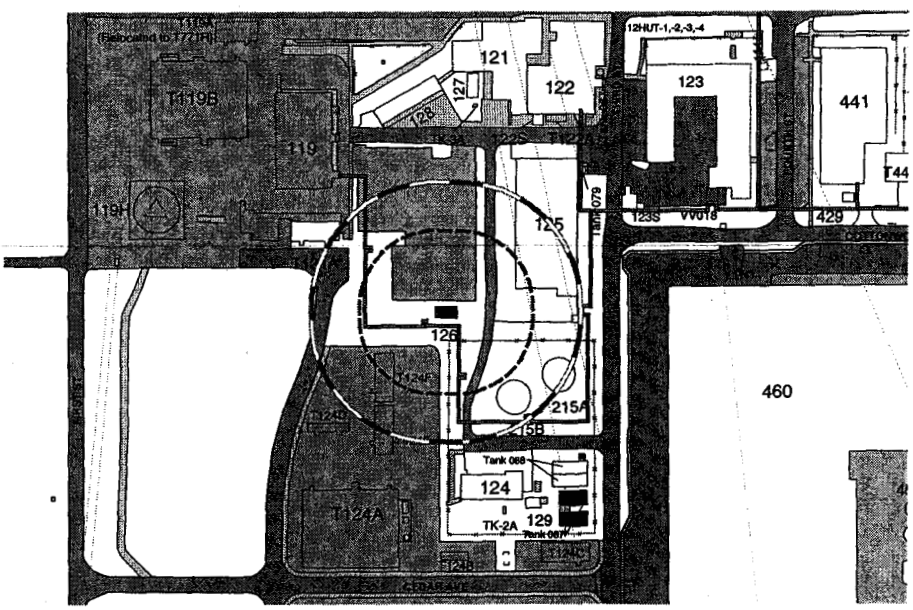

Figure 5. Building 126 – Damage Zones for Concrete Block Buildings (110 ft) and Trailers (180 ft)

Transportation accident probabilities developed in CALC-RFP-98.0570-KKK for the Rocky Flats Environmental Technology Site Safety Analysis Report (Site SAR) Transportation Safety Analysis are based on an initial accident rate of 1.71E-06 per mile, as provided by NUREG-0170, *Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes.* This base frequency rate incorporates accident frequencies due to adverse weather conditions, and includes all road types. The explosives transport vehicle will be traveling at relatively slow speeds, and will be escorted by Security Force personnel. In addition, on-Site traffic will be minimized through use of traffic control points and sheltering of personnel within the immediate area of proposed demolition demonstration activities and

along the designated transportation route. The likelihood of adverse weather conditions is low, given that this activity is proposed to be conducted in the month of September; however, should weather conditions that challenge transportation activities occur, the activity will be postponed. This is judged to qualitatively reduce the probability of an accident during transportation by one order of magnitude, to 1.7E-07 per mile.

The explosive material will be transported in DOT-compliant packaging for Class I explosives, and the explosives transport vehicle has been specifically constructed and approved for such use. Therefore, a minor accident is not expected to result in an inadvertent detonation.

The total distance to be traveled by the explosives transport vehicle on Site (estimated from the West Gate to the designated parking area) is approximately 1.5 miles. Therefore the probability of an accident involving the explosives transportation vehicle on Site and while en route to the proposed demolition demonstration site is:

$$(1.7E\text{-}07 \text{ mile}^{-1}) (1.5 \text{ miles}) = 2.6E\text{-}07$$

As discussed in CALC-RFP-98.0570-KKK, only 1.5% of all vehicle accidents involve a fire. Therefore, the probability of an accident that results in a fire involving the explosives transport vehicle occurring while on Site and en route to the proposed demolition demonstration site is:

$$(1.7E\text{-}07 \text{ mile}^{-1}) (1.5 \text{ miles}) (0.015) = 3.8E\text{-}09$$

Only the distance to the proposed demolition demonstration site is used in these calculations, because the vehicle is expected to leave the site empty or containing only very small amounts of explosives not used in the demonstration activities. It should be noted that the calculated accident probabilities are for one trip only; therefore the probability of transportation accident for both days of the planned activity are double the calculated values. The probability of detonation due to transportation accident is expected to be less than either calculated value.

In accordance with guidance contained in DOE-STD-3009, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports,* externally initiated and man-made events are defined within a cut-off frequency of 1.0E-06 per year, conservatively calculated, or 1.0E-07 per year, realistically calculated. The probability of less than 3.0E-07 for an explosives transport vehicle accident is considered to be conservatively calculated given the restrictions to be imposed on the movement of the vehicle on Site and the controls to be imposed on traffic conditions on Site during movement of the vehicle. It should be noted that the 1.0E-06 per year cut-off provided by DOE-STD-3009 is a frequency, rather than a probability. However, if an externally initiated, man-made accident frequency of less than 1.0E-06 per year is implicitly acceptable for safety analysis of nuclear facility operations, a probability of less than 3.0E-07 for a one-time event should also be acceptable.

As previously discussed, the route identified in Figure 1 will ensure that the explosives transport vehicle will not travel within 50 feet of any nuclear facility, regardless of the probability that a transportation accident could potentially lead to an inadvertent detonation. The explosives transport vehicle will pass sufficiently close to trailers and facilities of metal panel construction (within 180 feet for a load of 80 lbs. NEW (TNT equivalent) and within 105 feet for a load of 15 lbs. NEW (TNT equivalent)) to result in damage to these facilities in the event of inadvertent detonation. The facilities at risk are : Buildings 120, 120A, 120B, S120, 119, T119B, and 128. Occupants of Buildings 119, T119B, and 128 will be sheltered during transportation activities, and occupancy of Building S120 will be prohibited for the duration of transportation activities that result in the presence of the explosives transport vehicle adjacent to this facility. It is not practical to shelter any occupants of the remaining facilities, as they are Security personnel whose presence may be required to ensure the safety of the explosives transport vehicle.

As discussed previously, upon installation of charges, the following protective measures will be put in place: sheet explosives and linear shaped charges to be used for explosive scabbling will be backed with flexible conveyor belting and geotextile fabric; linear shaped charges and explosive rock bolt cutters to be used for pipe and duct lowering will be covered with conveyor belting, geotextile fabric, and/or plywood.

These measures are designed to minimize fly of debris. Also, the NEW to be used in each Phase of demonstration activities will be distributed among multiple charge locations. Therefore, the available energy associated with each individual charge location will be relatively small. As the demonstration activities are designed to perform operations (piping and duct removal; scabbling) that are confined within the facility, it is not likely that debris will escape the facility during the detonation.

A personnel exclusion zone of 100 feet will be established around each facility; these exclusion zones were previously shown in Figures 1 and 2. Prior to each detonation, Site announcements will be made to notify all personnel within the affected exclusion zone to shelter. Security Police Officers will perform a final sweep of the exclusion zone to ensure that no personnel are exposed. As previously stated, CALC-RFP-02.1972-SKO concludes that the proposed 100 foot exclusion zone is adequate to protect personnel unshielded by any structure from ear drum rupture due to overpressure. Sheltering of personnel within the exclusion zone will ensure protection from the effects of overpressure and any potential fly of debris.

CALC-RFP-02.1972-SKO evaluates the potential effect of detonation activities on nuclear facilities. The nearest nuclear facility to Buildings 125 and 126 is Building 460. Building 460 is a corrugated metal structure used for storage of Low Level Waste (LLW) and Low Level Mixed Waste (LLMW). Building 460 is approximately 120 feet from Building 125, and therefore is not within the 105 foot failure distance for a 1 psig overpressure from inadvertent detonation of the 15 lbs. NEW (TNT equivalent) to be used in Building 125. Building 460 is approximately 300 feet from Building 126, and therefore is also not within the 180 foot failure distance for a 1 psig overpressure from inadvertent detonation of the 80 lbs. NEW (TNT equivalent) to be used in Building 126. SARAH, Section 6.3.6.6, *Failure Criteria for 55-Gallon Drums Exposed to Exterior Explosions*, states that a conservative estimate of the overpressure required to cause drum rupture in a detonation is 90-psig. Therefore overpressures that will not cause building failure also will not cause drum rupture.

The next nearest nuclear facility to Buildings 125 and 126 is Building 440. It is a corrugated metal panel facility located approximately 700 feet from Building 125, and approximately 880 feet from Building 126. Predicted overpressures from the detonation of 80 lbs. NEW (TNT equivalent) at this distance are approxi-mately 0.2 psig; Building 440 is therefore beyond the distance where overpressure-induced failure could occur from inadvertent detonation.

CALC-RFP-02.1972-SKO also evaluates the potential effect of detonation activities on non-nuclear facilities (including domestic water storage tanks) located within the potential damage zones for Buildings 125 or 126, as shown in Figures 4 and 5. Phase I of the demonstration activity, which is planned to be conducted in Building 126, will utilize up to 80 lbs. NEW (TNT equivalent). Mobile offices located within 180 feet of Building 126 include T121A, T124E, and T124F. There are no concrete block structures located within 110 feet of Building 126. The normal occupancy of facilities at risk of damage from Phase I of the demonstration activity is as follows: T121A – 4 persons; T124E – 7 persons; T124F – occupied only during work breaks. Phase II of the demonstration activity, which is planned to be conducted in Building 125, will utilize up to 15 lbs. NEW (TNT equivalent). This would place mobile offices within 105 feet of any inadvertent explosion, and concrete block buildings within 65 feet of any inadvertent explosion, at risk of damage. No facilities are located within these distances; therefore no facilities are at risk of damage. The domestic water storage tanks can withstand much higher overpressures than either trailers or concrete block buildings; there is no possibility of exposing these tanks to overpressures sufficient to cause damage.

It should be noted that the overpressures required to cause damage to the facilities listed above would result from the inadvertent explosion of the planned NEW in the open. Inadvertent detonation occurring within Buildings 125 or 126 would result in significantly reduced overpressures at the facilities in question. Based on the use of multiple small charges for performance of the demonstration activity, the design of the activity for confinement within the demonstration facility, and the expertise of the explosive demolition contractor, the potential for an inadvertent explosion that would generate damaging overpressures at Buildings T121A, T124E, and T124F, is judged to be at least *Extremely Unlikely*, if not *Beyond Extremely Unlikely*. Therefore these facilities are not planned to be evacuated for the detonation activity.

11

Based on the above information, it is concluded that on-Site transportation and use of explosives for the planned demolition demonstration actvities:

1. Does not increase the probability of previously evaluated accidents.
2. Does not increase the consequences of previously evaluated accidents.
3. Does not increase the probability of previously evaluated malfunctions of equipment important to safety.
4. Does not increase the consequences of previously evaluated malfunctions of equipment important to safety.
5. Constitutes an accident of a different type (high energy detonation from DOE Class 1 explosives with resulting overpressures and debris that could cause injury to personnel).
6. Does not constitute a malfunction of equipment of a different type (does not have the potential to cause damage to nuclear facilities or credited safety systems).
7. Constitutes a reduction in the margin of safety as discussed in the basis for the Site SAR Transportation Safety Analysis (introduction of DOT Class 1 explosives that were specifically prohibited on Site).

8. Recommended AB document changes (if applicable):

The scope of this JCO is limited to the specific activity of transportation and use of DOT Class 1 explosives in demolition demonstration activities at Buildings 125 and 126. The onsite presence of DOT Class 1 explosives authorized by this JCO is planned to be limited to one two-day period, with the presence of this material on Site overnight not authorized. This JCO expires when the explosives placed in Buildings 125 and 126 have been detonated, and the explosives transport vehicle has left the Site. Therefore, no AB document changes are required for this one-time activity.

2/12