

**01-RF-02003**



DIST.	LTR	ENC
BRAILSFORD, M.D.	X	X
FERRI, M.S.	X	
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TUOR, N. R.	X	X
CHRITTON, M.	X	X
DIETERLE, S.	X	
FERRERA, D.	X	
HUMISTON, T.	X	X
MARSCHALL, J.	X	X
NESTA, S.	X	
GILMOUR, J.	X	X
HOHL, A.	X	X
MCEAHERN, P.	X	
TURNER, K.	X	X
COX, J.	X	X
STITHEM, A.	X	X
PETERSON, V.	X	X
ITO, F.	X	X
ISOM, B.	X	X
HAYNES, J.	X	X
GEIS, A.	X	X
VAUGHN, T.	X	X
DANIELS, K.	X	X
GILPIN, H.	X	X
ANDERSON, Marty	X	X
CLARK, D.	X	X
LONG, J.	X	X
THISTLEWOOD, D.	X	X
FLORA, J.	X	X
LARSON, E.	X	X
O'BRIEN, J.	X	X
TUCK, C.	X	X
LANE, B.	X	X
MADSEN, P.	X	X
HOLMES, N.	X	X
KRANKER, S.	X	X
HANNA, S.	X	X
POLING, J.	X	X
CORRES. CONTROL	X	X
ADMIN RECRD/850	X	X
TRAFFIC		
PATS/130		

AUG 27 2001

01-RF-02003

Ron Bostic  
Director, Nuclear Regulatory Division  
DOE, RFFO

SUBMITTAL OF JUSTIFICATION FOR CONTINUED OPERATION RFP-01.1858-ARS,  
USE OF EXPLOSIVES FOR DEMOLITION OF GUARD TOWERS 550, 761, AND 901 -  
MRC-001-01

This letter transmits the attached Justification for Continued Operation (JCO) RFP-01.1858-ARS for approval. The JCO authorizes the explosive demolition of Guard Towers 550, 761, and 901 at the Rocky Flats Environmental Technology Site (Site). Such demolition is within the scope of the Perimeter Security Zone Closure Project. The guard towers are designated as Type 1 facilities that meet unrestricted release criteria for radiological contamination.

JCO-RFP-01.1858-ARS, authorizes the onsite transportation and use of Department of Transportation (DOT) Class 1, Division 1 or 2 explosives (as defined in 49 CFR §173.52) for the explosive demolition of the guard towers. 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 specific purpose of toppling each guard tower. No Authorization Basis (AB) 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 the guard towers will assure that the escorted explosives transport vehicle will not pass within potential vulnerability zones of any Site nuclear facility established 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 demolition explosives onsite, traffic control points will be established to restrict vehicle traffic from the designated transportation route and the 1,000 feet exclusion zone centered around each guard tower. Additionally, prior to the detonation of the demolition explosives, Site personnel will be instructed to either leave the zones or shelter in concrete buildings away from windows.

CLASSIFICATION:

UCNI	
UNCLASSIFIED	X X
CONFIDENTIAL	
SECRET	

AUTHORIZED CLASSIFIER

SIGNATURE: *[Signature]*  
Date: *08/27/01*

IN REPLY TO RFP CC NO.:

ACTION ITEM STATUS:

PARTIAL/OPEN

CLOSED

LTR APPROVALS:

ORIG. & TYPIST INITIALS:  
ARH:wjd

1/13

AUG 27 2001

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It is requested that DOE, RFFO approve this JCO within 4 weeks to support the planned demolition of Guard Towers 550, 761, and 901 in late September 2001.

If there are any questions or comments, please call Art Stithem at extension 3784 or digital pager (303) 212-3298.



Michael R. Chritton,  
RISS ESH&Q Manager  
Kaiser-Hill Company, LLC

ARS:wjd

Attachment:  
As Stated

Orig. and 2 cc - Ron Bostic

▲  
AUG 2001  
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# ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RFETS Nuclear Safety Justification for Continued Operation (JCO) Cover Sheet			
JCO No.: <u>JCO-RFP-01.1858-ARS</u>	Revision No. <u>0</u>	Building <u>RFP</u>	Page <u>1</u> of <u>11</u>
Title: <u>Use of Explosives for Demolition of Guard Towers 550, 761, and 901</u>		Charge #: <u>HAF140-15</u>	
Preparer			Date
Prepared: <u>Arthur R. Stithem</u> <small>(Print Name)</small>		 <small>(Sign Name)</small>	<u>8/22/01</u>
Reviewer			Date
Approved: <u>Vern L. Peterson</u> <small>(Print Name)</small>		 <small>(Sign Name)</small>	<u>8/23/01</u>
Project Manager or Designee			Date
Approved: <u>Marvin Brailsford</u> <small>(Print Name)</small>		 <small>(Sign Name)</small>	<u>8/24/01</u>
Project Manager or Designee			Date
Approved: <u>Nancy Tuor</u> <small>(Print Name)</small>		 <small>(Sign Name)</small>	<u>8/24/01</u>
ISRC Chair			Date
Approved: <u>Richard A. Walker</u> <small>(Print Name)</small>		 <small>(Sign Name)</small>	<u>8/23/01</u>
PRC/ORC/ISR Meeting No. <u>SISRC 01-25</u>			
<b>REVISION DOCUMENTATION</b>			
Reason for Revision:			

**PRO-528-NSP-JCO**  
**PREPARATION OF JUSTIFICATIONS FOR CONTINUED OPERATION**  
**JCO Number: JCO-RFP-01.1858-ARS, Revision 0**  
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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 activities for Guard Towers 550, 761, and 901 at the Rocky Flats Environmental Technology Site (Site).
2. **Scope:** This JCO applies to transportation and use of DOT Class 1 explosives for the specific purpose of knocking over each of the guard towers as part of the overall demolition process for these structures. Restrictions and controls that will be required during the period of on-Site transportation and use of the explosives are specifically addressed.

The guard towers, facilities 550, 761, and 901, will be demolished under the Perimeter Security Zone Closure Project. The scope of this project is to demolish a large security network system that is no longer required at the Site. The guard towers were constructed in the 1982/1983 timeframe to support detection and assessment capabilities for the Protected Area (PA), the area of the plant containing the majority of the nuclear material on site. The reconnaissance level characterization has been completed for these facilities, and the reports received Colorado Department of Public Health and the Environment (CDPHE) concurrence on May 25, 2001. The facilities are Type 1, which means they meet unrestricted release criteria for radiological contamination.

**Facility 761**

Facility 761 was constructed in 1983 as part of the enhanced security zone surrounding the plutonium buildings. Facility 761 was designed and constructed to provide an elevated line of sight and firing platform. Facility 761 is approximately 12 feet square by 45 feet high and 338 square feet of floor space. The facility has a 4-inch thick reinforced concrete floor tied by the walls to a 15 feet square, 14-inch thick reinforced concrete continuous footing 3 feet below grade. The facility's walls are 8-inch thick reinforced concrete block with grout fill. An open metal grating stair leads up to the equipment room 26 feet above the ground floor. The floor at this level is 8-inch thick reinforced concrete. The observation deck is approximately 10 feet above the equipment room, and has an 8-inch thick reinforced concrete floor.

Facility 761 was constructed with bulletproof glass and gun/weapon slots in all four outer walls. The roof is 7-inch thick reinforced concrete that slopes away from the entrance and is supported on all four corners with square metal structural tubing. The roof is covered with rigid insulation and topped with a rubber membrane. A searchlight is mounted on the roof and operated from the observation deck. The tower has emergency power and an uninterrupted power supply system for critical equipment in case of emergency power failure. The interior walls of observation deck have been insulated, covered with drywall, and painted.

Facility 761 is located along the fence line adjacent to the security road. There are no facilities or overhead/adjacent utilities in the area around the tower. There are no individual hazardous substance site/potential areas of concern around the tower.

**Facility 901**

Facility 901 was constructed in approximately 1983 as part of the enhanced security zone surrounding the plutonium buildings. Facility 901 was designed and constructed to provide an elevated line of sight and firing platform. Facility 901 is approximately 12 feet square by 45 feet high and 338 square feet of floor space. The facility has a 4-inch thick reinforced concrete floor tied by the walls to a 15 feet square, 14-inch thick reinforced concrete continuous footing 3 feet below grade. The facility's walls are 8-inch thick reinforced concrete block with grout fill. An open metal grating stair leads up to the equipment room 26 feet above the ground floor. The floor at this level is 8-inch thick reinforced concrete. The observation deck is approximately 10 feet above the equipment room, and has an 8-inch thick reinforced concrete floor.

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Facility 901 was constructed with bulletproof glass and gun/weapon slots in all four outer walls. The roof is 7-inch thick reinforced concrete that slopes away from the entrance and is supported on all four corners with square metal structural tubing. The roof is covered with rigid insulation and topped with a rubber membrane. A searchlight is mounted on the roof and operated from the observation deck. The tower has emergency power and an uninterrupted power supply system for critical equipment in case of emergency power failure. The interior walls of observation deck have been insulated, covered with drywall, and painted.

Facility 901 is located along the fence line adjacent to the security road. There are no facilities or overhead/adjacent utilities in the area around the tower. There are no individual hazardous substance site/potential areas of concern around the tower.

**Facility 550**

Facility 550 was constructed in 1983 as part of the enhanced security zone surrounding the plutonium buildings. Facility 550 was designed and constructed to provide an elevated line of sight and firing platform. Facility 550 is approximately 12 feet square by 35 feet high and 338 square feet of floor space. The facility has a 4-inch thick reinforced concrete floor tied by the walls to a 15 feet square, 14-inch thick reinforced concrete continuous footing 3 feet below grade. The facility's walls are 8-inch thick reinforced concrete block with grout fill. An open metal grating stair leads up to the equipment room 16 feet above the ground floor. The floor at this level is 8-inch thick reinforced concrete. The observation deck is approximately 10 feet above the equipment room, and has an 8-inch thick reinforced concrete floor.

Facility 550 was constructed with bulletproof glass and gun/weapon slots in all four outer walls. The roof is 7-inch thick reinforced concrete that slopes away from the entrance and is supported on all four corners with square metal structural tubing. The roof is covered with rigid insulation and topped with a rubber membrane. A searchlight is mounted on the roof and operated from the observation deck. The tower has emergency power and an uninterrupted power supply system for critical equipment in case of emergency power failure. The interior walls of observation deck have been insulated, covered with drywall, and painted.

Facility 550 is located between Building 559 and Building 371. These are active areas of operation, and there are some overhead hazards. There is an overhead electrical line carrying 15,000 volts of energy. The line is approximately 20 feet overhead and to the east of the tower. This line supplies facilities within the PA and cannot be disconnected. There is also a fiber optic line run along some telephone poles approximately 12 feet north of the facility. There are no individual hazardous substance site/potential areas of concern around the tower.

**Description of Activities**

Each guard tower demolition area will be set up with a primary and secondary exclusion zone. The primary zone will be a 100-foot radius around each tower. Only authorized personnel will be allowed in this area. The secondary exclusion zone will be implemented during the detonation. This will be a 1,000-foot radius around each tower. No unprotected personnel or vehicles will be allowed within this area until the detonation has occurred and an "All Clear" signal has been given.

Prior to the day of the proposed demolition, each guard tower will be prepared for charge placement and debris protection. (Final preparation activities may occur on the day of the demolition.) A drill pattern will be marked on each guard tower to identify placement of charges. The objective of the detonation will be to remove one side of the tower causing the tower to fall over on its side. Approximately 120 holes will be drilled into each guard tower. Chainlink fence and geotextile (or similar material) will be wrapped around the base of each tower to minimize flying debris. Holes will be cut into the fabric to facilitate the placement of explosives.

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On the day of the demolition, when all preparations have been made, Site announcements will be made to notify unnecessary personnel to leave the exclusion zones for each guard tower. Traffic control points will be established to restrict traffic in the exclusion zones. The explosives transportation vehicle will enter the Site through the East gate. It will be met at the East gate by Security Force personnel, who will inspect the vehicle for prohibited items. Following the inspection, the explosives transportation vehicle will be escorted onto the Site property. During the entire time the explosives transportation vehicle is on-Site, it will be escorted by two Security Force vehicles, one in front, and one behind. The explosives transportation vehicle will be restricted to a designated route, except in an emergency. The explosives transportation vehicle will proceed to the first tower (B761), where the required amount of explosives will be unloaded and placed in the charge locations. The explosives transportation vehicle will then proceed to the next tower (B901), unload and place the required amount of explosives in the charge locations, and then proceed to the final tower (B550) via the north part of the former Protected Area Patrol Road and Sixth Street. After charging B550, the explosives transportation vehicle will be promptly escorted off-Site via the same route it entered. Prior to detonation, additional Site announcements will be made to notify all personnel to leave the exclusion zones, or take shelter in concrete buildings away from windows. Security Police Officers will perform a final sweep of each exclusion zone to assure that no personnel are exposed.

It is anticipated that approximately 25 pounds of explosives will be required for each tower. Nuclear Safety Calculation CALC-761-01.1696-VLP, Explosive Demolition of Guard Towers, evaluated 25 pounds of RDX explosive (34.75 pounds TNT equivalent). Non-electric detonators will be used. A dust control system will be established before the explosives are placed. This system will deliver a fine mist 5 minutes before and 10 minutes after the detonation.

It is planned to place and detonate the charges on the same day. The debris will be loaded out on subsequent days with mechanical equipment.

3. **Description of the Condition that is Outside the Approved Authorization Basis (AB):** The 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 on a weekend during a period of minimum Site staffing.
  2. Site vehicular traffic will be limited to minimum required for weekend activities.
  3. The explosives transportation vehicle shall not carry more than 139 pounds 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 transportation vehicle will be escorted by Security Force personnel at all times.

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6. The time period that explosives remain on site will be minimized as much as practical. All preparations for charge placement will be completed prior to allowing the explosives vehicle on Site. Any un-used 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 W01-005, Operations Order, and contract:

1. No outdoor nuclear material transfers will be permitted while explosives are present on the Site (not including any trivial amounts of un-detonated explosive material that may remain after detonation). No nuclear material will be staged on open docks facing the guard towers within the 1,000 foot exclusion zones during this period.
2. Site Personnel required to be within 1,000 feet of the detonation locations shall be notified to shelter inside concrete buildings, away from windows, during the detonation.
3. The explosives transportation vehicle will obey posted Site speed limits, and will be escorted by Security Force personnel at all times.
4. The explosives transportation vehicle will remain on primary roads as much as possible while transiting between guard towers, and will be limited to the roads designated in Figure 1:
  - From the East Gate, travel up the East Access Road to the Northeast Perimeter Road, then to approximately PACS 3
  - Take the (former) Protected Area Patrol Road from approximately B771 to B761, and then to B901
  - Return along the (former) Protected Area Patrol Road to approximately B771, then up Sixth Street to B550
  - Return along Sixth Street to the North Perimeter Road, and then leave the Site via the East Access Road and the East Gate
5. The explosives transportation vehicle will not travel within 50 feet of any nuclear facility, unless required by Security Force personnel or emergency conditions.



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runs between B374 and B771, thence to the B550 guard tower to off-load the final portion of explosives. The nearest nuclear facility along this path would then be B771/774, which is a concrete structure that would survive an explosion of a 50-lb charge on the road. The minimum distance from the guard road to the nearest corner of B771 is about 60 feet, which is greater than the distance corresponding to a 10 psig overpressure for a 50-lb charge.

A note is in order on the seismic qualifications of Building 707, as it is not seismically sound. There is a fear that the demolition of a guard tower could produce ground waves that would mimic an earthquake and possibly damage B707. The B707 BIO (Ref. 3) states that the building is expected to collapse in an earthquake that produces a horizontal surface acceleration of 0.10-g or more, where "g" is the acceleration of gravity. Reference 4 states that ground shock is small compared with the air blast. This would be especially true for the guard towers, as the explosives are detonated above ground level. The collapse of B707 is therefore not expected due to ground acceleration caused by the explosion(s)."

As discussed in CALC-761-01.1696-VLP, the vulnerability distance for a concrete structure is 50 feet, based on the inadvertent detonation of 100 pounds of RDX (139 pounds TNT equivalent). For a metal panel structure this distance is 130 feet. Figure 2 identifies the vulnerability zones for each nuclear facility, as determined by CALC-761-01.1696-VLP.

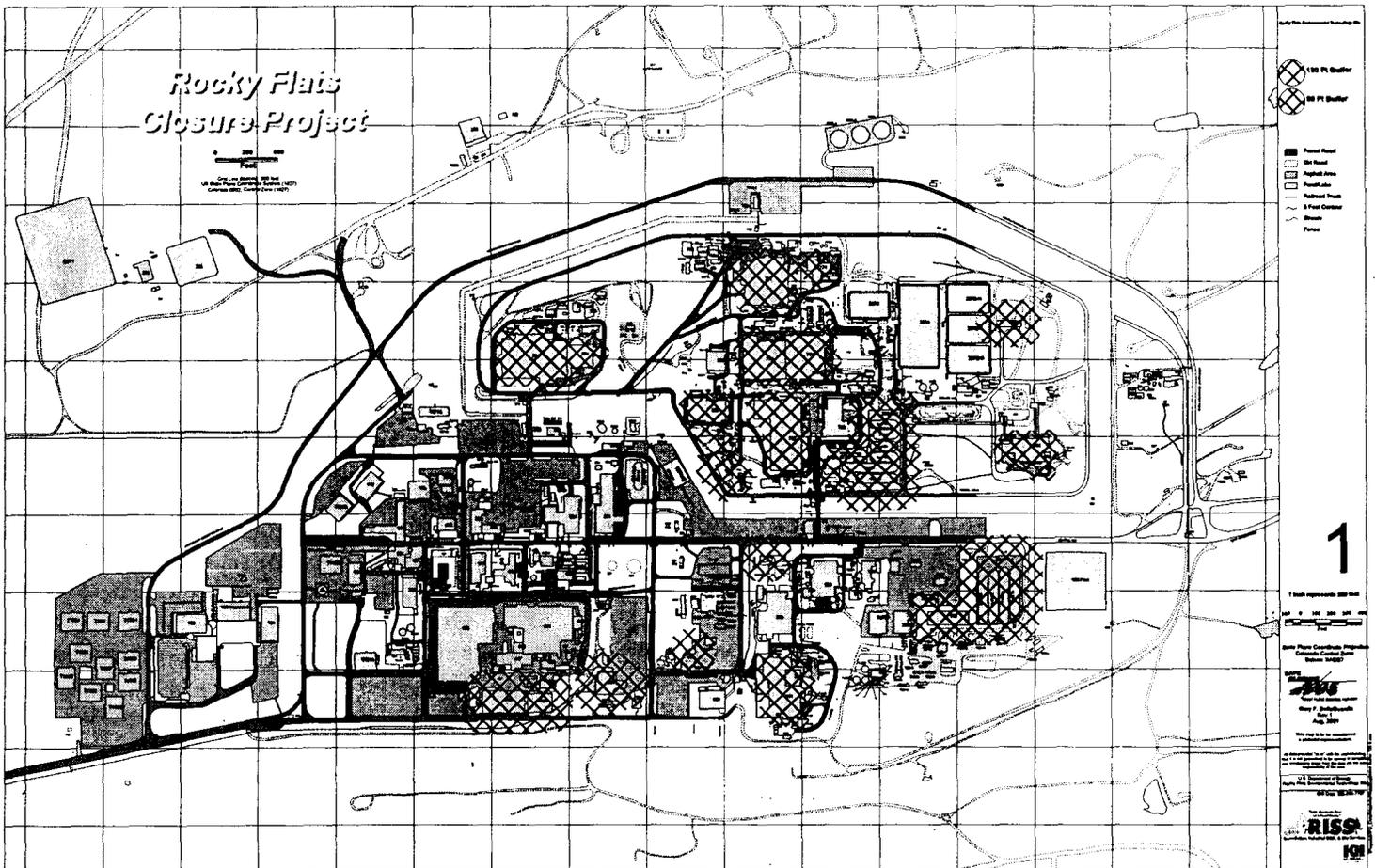


Figure 2 – Nuclear Facility Vulnerability Zones for 139 Lbs. TNT

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During the proposed on-Site transportation of the explosives, the designated route will assure the explosives vehicle will not pass within the vulnerability zones of any nuclear facility, based on the overpressure from an inadvertent detonation of 100 pounds of RDX (139 pounds TNT equivalent), the maximum amount permitted on the vehicle at any time. Based on the route identified in Figure 1, the total distance traveled within the former Protected Area is approximately 2 miles, including the return to the new access point by PACS 3 from B550.

The type of explosive being transported and used will not be shock sensitive, and will be transported in DOT compliant packaging for Class 1 explosives. Therefore, a minor accident will not result in an inadvertent detonation. The DOT required packaging is assumed to provide approximately equivalent performance as a DOT Type A container (i.e., capable of substantially surviving a 4-foot drop or equivalent impact without significant damage to the contents).

Transportation accident probabilities developed in CALC-RFP-98.0570-KKK for the Site SAR Transportation Safety Analysis are based on an initial accident rate of  $1.71E-06$  accidents per mile, per 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 transportation vehicle will be traveling at relatively slow speeds and will be escorted by Security Force personnel. In addition, on-Site traffic will be minimized by traffic control points, and the demolition activity will occur during a period of minimum Site staffing and associated vehicle traffic. Therefore, the probability of an accident occurring during is qualitatively reduced by one order of magnitude to  $1.7E-07$  accidents per mile.

Based on the NUREG-0170 Accident Severity Categories, a Category I accident (probability of 0.55) will not breach a DOT Type A container. Only Category II accidents or above have sufficient severity to breach a DOT Type A container. The aggregate probability for Category II - VIII accidents is 0.45 (1.0 - 0.55).

The probability for a severe accident (sufficient to breach a DOT Type A container) involving the explosives transportation vehicle while traveling within the former protected area is:

$$1.7E-7 \text{ accidents per mile} \times 2 \text{ miles} \times 0.45 = 9.9E-8$$

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 transportation vehicle while traveling within the former protected area is:

$$1.7E-7 \text{ accidents per mile} \times 2 \text{ miles} \times 0.015 = 3.3E-9$$

These accident probabilities are considered Beyond Extremely Unlikely. As discussed above, the route identified in Figure 1 will assure that the explosives transportation vehicle will not pass within the vulnerability zone of any nuclear facility, regardless of the probability of a transportation accident that could potentially lead to an inadvertent detonation.

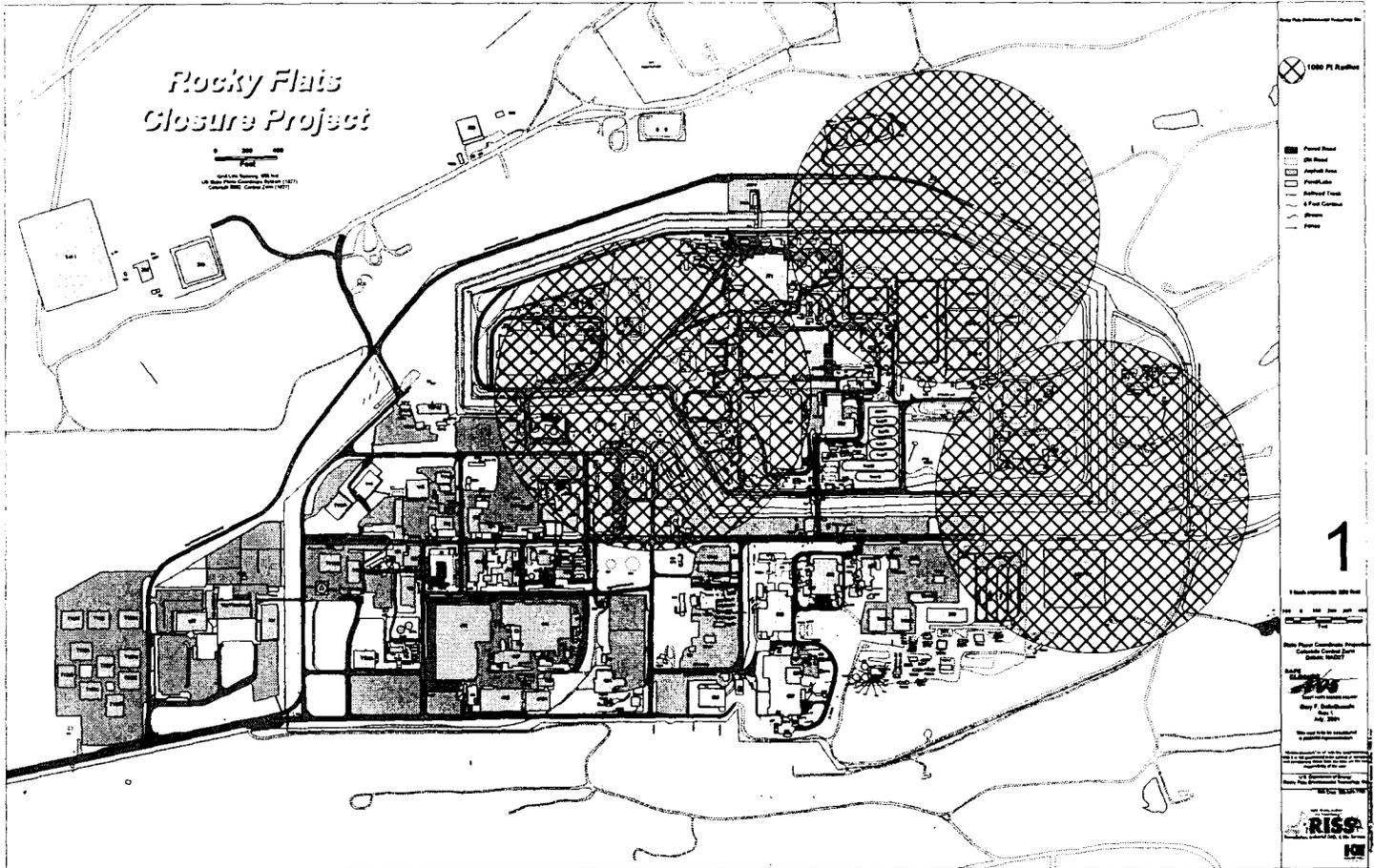
It is noted that the explosives transportation vehicle will pass within approximately 60 feet of the maintenance shops in B771. However, no radioactive material is stored in this part of B771.

As discussed previously, the base of each guard tower will be wrapped in chainlink fence and geotextile (or similar material) to minimize flying debris. Also, the 25 pounds of explosive [evaluated as 25 pounds of RDX, or 34.75 pounds TNT equivalent] for each guard tower will be distributed among approximately 120 drilled charge locations. Therefore, the available energy associated with each individual charge location is relatively small. However, it is possible that some debris could be expelled with significant energy

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during the detonation. A personnel exclusion zone of 1,000 feet will be established around each guard tower. The 1,000 foot exclusion zone for each guard tower is shown in Figure 3.

Prior to detonation, Site announcements will be made to notify all personnel to leave the exclusion zones, or take shelter in concrete buildings away from windows. Security Police Officers will perform a final sweep of each exclusion zone to assure that no personnel are exposed. Therefore, Site personnel will be protected from potential flying debris, and the risk to immediate and co-located workers is considered insignificant.



**Figure 3 – 1,000 Foot Personnel Exclusion Zones**

As discussed in CALC-761-01.1696-VLP:

*"The nearest building to B761 (the guard tower near the NE corner of the former Protected Area (PA)) is B964 (RCRA Unit 24), a wood frame building with corrugated metal siding. It is about 750 ft from B761 and thus beyond the distance where overpressure damage could occur. The nearest building to B901 (the guard tower in the SE corner of the former PA) is B984, a Butler type building for storage of TRU waste in Pipe Overpack Containers (POCs). It is about 375 ft from B901 and thus beyond the distance where overpressure damage could occur. The nearest building to B550 (the guard tower between B371 and B559) is B559, a concrete block structure used as a*

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laboratory. It is about 250 ft from B550 and thus beyond the distance where overpressure damage could occur.

*The only damage that could occur to nuclear facilities from guard tower demolition would be from flying debris. For B761, the only buildings within 1,000 ft are B774 (a concrete structure) and B964 (described above). Debris damage to either building would not be expected to release any radioactive materials, as B774 would not be penetrated by the debris (the mass and velocity of fragments would not be high enough to cause penetration of a concrete wall. B964 primarily contains solidified low level bypass sludge in drums. Due to the nature of this material, a radiological release from breaching these drums would be insignificant.*

*For B901, the only nuclear facilities within 1,000 ft are B984 (described above), B991 (a concrete structure), and the tents on the 904 Pad, which are used for storing low-level waste in drums and metal boxes. B984 could conceivably be penetrated by the debris but the POCs would not be breached, due to their robust construction, and no radioactive release could occur. B991 would not be penetrated by the debris, except perhaps for the windows on the exterior rooms, but no waste is stored in these rooms. Waste drums located on south-facing docks could be subject to damage by debris. Although the flying debris would probably not penetrate the drums or cause release of radioactive material, as a precaution no drums should be allowed on the docks during the demolition of the guard towers. The fabric of the tents on the 904 pad might be penetrated by debris from the explosion but the drums and metal boxes within the tents would probably not be penetrated. At the distance of the tents, the fragments that travel this far would be few in number and their kinetic energy would be largely dissipated. The larger fragments, being more massive, would not travel this far and the smaller fragments, which could, would be significantly slowed by air drag. No release of radioactive materials would occur.*

*For B550, the nuclear facilities within 1,000 ft include B371/374, B559, B561, B569, B707 [including B778], B771, and B776/777. There are also several smaller, non-nuclear facilities within 1,000 ft of B550. The concrete structures (B371/374, B559, B561, B707, B771, and B776/777) would not be penetrated by the flying debris but B569, a Butler-type building, could conceivably be penetrated. Radioactive materials in B569 are in metal containers, but these would probably not be penetrated because the debris energy would be largely dissipated in penetrating the building walls. No radioactive releases would be expected occur from the debris."*

Site support systems, such as electrical power lines, alarm systems, nitrogen supply lines, fuel tanks, and natural gas lines, are exposed and relatively unprotected. However, the probability of damaging these systems must be considered remote due to the relatively small target area they present, and the small probability a significant flying debris capable of damaging such systems. Nuclear facilities already have provisions for loss of electrical power, alarm system, and nitrogen supplies where credited. Therefore, no unanalyzed effects are expected from any potential damage to these systems. The Site natural gas distribution system primarily consists of overhead steel piping, and is generally routed parallel to steam lines. The steel lines should be sufficient to withstand potential debris impacts. However, the Site SAR discusses the effects of breaches of the natural gas distribution lines, and the consequences of a breach associated with the proposed demolition activity would not exceed the Site SAR analysis. A number of metal containers containing Low Level Waste (LLW) and Surface Contaminated Objects (SCO), as well as fuel and propane tanks are also relatively exposed and unprotected. However, none of these items are in the immediate vicinity of the guard towers, and the metal casings of these objects are expected to withstand impacts from any debris capable of traveling the distances required to impact these objects. The consequences of breaches of metal LLW and SCO containers on the RCRA Units, and breaches of

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installed fuel/propane tanks that could affect nuclear facilities have been addressed in the respective Authorization Bases.

Based on the above information, it is concluded that on-Site transportation and use of explosives to support guard tower demolition activities:

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 DOT Class 1 explosives with resulting debris that could potentially breach nuclear facilities and radioactive material containers or injure personnel)
  6. Constitutes a malfunction of equipment of a different type (high energy detonation from DOT Class 1 explosives with resulting debris that could potentially breach nuclear facilities and damage equipment important to safety)
  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 not analyzed based on a Site exclusion of such material).
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 activities for Guard Towers 550, 761, and 901. The on-Site presence of DOT Class 1 explosives authorized by this JCO is planned to be limited to one day. This JCO expires when the explosives placed in the guard towers have been detonated, and the explosives transportation vehicle has left the Site. Therefore, no AB document changes are required for this one-time activity.