Appendix D

Co-Located Facilities and Structures Analysis

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D-1 CO-LOCATED FACILITIES AND STRUCTURES ANALYSIS

Over the past 42 years, Test Area North (TAN) has provided facilities, utilities, and support capabilities for government and private agencies to conduct experiments associated with the development, testing, and analysis utilized in aircraft nuclear, nuclear and reactor applications and military component fabrication. To support this mission, more than 89 buildings and structures have been constructed. The facilities have been modified as necessary to fit TAN's changing mission. Currently, there are three major active programs located at TAN. These programs are the Specific Manufacturing Capability (SMC) project, Nuclear Operations supported by TAN Operations (TANO), and Research and Engineering Laboratory Activities . The SMC, a Department of Army facility, was specifically omitted from the Federal Facility Agreement and Consent Order (FFA/CO). The remaining facilities and structures are used support these TAN programs or other Idaho National Engineering Laboratory (INEL) missions.

Because past and present activities associated with TAN facilities and structures are proximal or "co-located" to WAG 1 sites identified in the FFA/CO, an analysis was performed to address their potential for causing current risk to be underestimated. This analysis included a review of past and present operational activities at TAN, current facilities and structures, management control procedures, a screening criteria for eliminating or retaining buildings and structures, and the procedures in place to identify new sites for inclusion in the FFA/CO. All operational facilities and structures, facilities and structures no longer being used for their original mission, and facilities in standby or abandoned mode were included in this analysis.

D-2 OPERATIONAL BACKGROUND OF THE TAN

Construction of the TAN facility began in 1954 and was completed in 1961. The facility was built to support the Aircraft Nuclear Propulsion (ANP) Program sponsored by the Air Force and the Atomic Energy Commission. The mission of the ANP Program was to test the concept of the nuclear-powered airplane. The program was involved in testing of three versions of a full-scale, nuclear-powered aircraft engine until 1961 when the program was canceled by the U.S. Congress. From 1962 until the 1970s, the TAN Hot Shop and hot cells, support facilities for the Technical Support Facility (TSF), were devoted principally to the Loss-of-Fluid Test (LOFT) facility and miscellaneous minor examinations and tests for the Test Reactor Area and the Power Burst Facility. Beginning in 1980, the TAN Hot Shop and hot cells supported research and development of material from the Three Mile Island 2 (TMI-2) reactor as a result of the 1979 accident at the reactor. During the mid-1980s, the final tests for the LOFT program were supported by the Hot Shop.

There are four major facilities at TAN. The major facilities within the TAN boundaries are as follows:

- LOFT facility
- Water Reactor Research Test Facility (WRRTF)

- TSF
- Initial Engine Test Facility (IET)

D-2.1 LOFT Facility

The LOFT facility was a scaled duplicate of a pressurized water reactor designed to perform loss-of-coolant safety testing and behavior studies. The facility also was used to develop and verify sophisticated computer codes to predict reactor behavior during severe accident scenarios. In the mid 1980s, the facility was separated into an inactive LOFT facility, also called the Contained Test Facility (CTF), and the SMC facility.

The inactive LOFT facility includes the containment and service building (the reactor facility), the reactor control and equipment building, and numerous support facilities. Structures that supported the LOFT Programs have been decontaminated and are now maintained in shutdown condition. Some of these structure were used in the late 1980s and early 1990s to decontaminate and decommission the reactors from the ANP Program. All portions of LOFT not involved in the SMC Program will be inactive by the end of FY-1996.

The mission of the SMC Project is to develop and produce tank armor for the Department of Army and perform associated research and development. Because of the sensitivity of the mission of this project, safety and analysis reports (SARs) describing operations in these buildings were not made available to support the evaluations in this document. The SMC Program has a projected completion of FY-2002. The Army currently plans to expand the current retrofit program beyond FY-2002, but no future program has been officially approved.

D-2.2 WRRTF

The first buildings and structures at the WRRTF were built in the late 1950s, and were used to experiment with pool and table reactors. These reactors were decontaminated and decommissioned in the early 1960s, and a new reactor, the Experimental Beryllium Oxide Reactor (EBOR), was constructed. Although fuel was loaded into the reactor, the reactor was never started and was later decommissioned. In the mid-1960s, the Semiscale Project was undertaken. This was a nonnuclear program designed to emulate, on a small scale, the principal features of a commercial nuclear reactor to predict what occurs during a loss-of-coolant accident and other transients. These facilities are currently used for a variety of small research and engineering laboratory projects including some that require seclusion and special utility support. One project under way included the development test systems used to detect explosives. All activities within this area are scheduled for completion by FY-2002.

D-2.3 TSF Facility

The TSF is the main administration, assembly, and maintenance area for TAN. The TSF consists mainly of facilities to support the Nuclear Operation Programs for handling, storing, examining, and researching spent nuclear fuel. Major programs now located at the TSF include the TMI-2 Core Offsite Examination Program, the Process Experimental Pilot Plant (PREPP), the Spent Fuel Program, and portions of the SMC Program. The PREPP was built to determine the capabilities of processing

transuranic waste destined for the Waste Isolation Pilot Plant, but the facility is currently in shutdown condition.

D-2.4 IET Facility

The IET area includes buildings and structures that were constructed in the early 1950s as a testing location for the nuclear jet engines developed under the ANP Program. After that program ended in 1961, the area was used for the system Nuclear Auxiliary Power Transits Program through 1967 and then for the Hallam Decontamination and Decommissioning Project for 2 years in the 1970s. This area is not decontaminated but has been decommissioned since 1979. Dismantlement of remaining buildings at the IET is scheduled to be completed by the end of FY-99.

D-3. CO-LOCATED FACILITIES AND STRUCTURES SCREENING METHODOLOGY

The screening methodology included all operational facilities and structures, facilities and structures no longer being used for their original mission, and facilities in standby or abandoned mode. The analysis involved investigating past and current uses of structures and buildings at TAN and applying a screening process to eliminate from further investigation the structures and buildings that would not be expected to cause potential threats of release or that were covered through existing control procedures. The general process for determining which sites would be screened or retained for further evaluation is outlined below:

1. Buildings or structures assigned to the SMC Project were screened.

2. Buildings or structures assigned to operable units in WAG 1 including the Sewage Treatment Plant were screened.

3. Discharges to the environment that are permitted through other programs including the TAN disposal pond were screened.

4. Buildings and structures that would not have processed, stored, or used hazardous materials and waste including personnel offices, nonhazardous material storage areas, training and security buildings, personnel support buildings, nonhazardous liquid storage (raw water storage tanks and towers) water facilities, electrically driven raw pumping facilities, and facility maintenance shops were screened.

5. Buildings and structures that have no history of past releases that would impact the cumulative risk at WAG 1 and are operated with appropriate management controls were screened.

6. Buildings and structures with a history of releases and those that possess the potential to impact comprehensive risk at WAG 1 for a qualitative analysis were retained.

The results of this screening and retention of sites are provided in Table D-1.

Table D-1. Screening and retention of sites results.

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN/IET					
TAN-620	IET Control and Equipment Building.	Underground building built of high density reinforced concrete. The walls are 2 feet thick and the ceiling is 3 ft thick. The floor of the building is 15 ft belowgrade with an additional 14 ft of dirt shielding over the top.	NA	NR	Classified as inactive and surplus facility. Structure would not be used for storage of hazardous waste. Eliminated as a potential release site.
TAN-622	Unit Substation (concrete transformer slab)	Transformer no loner in service.	NA	NR	Classified as inactive and surplus facility. Eliminated as a potential release site.
TAN-656	Change Room	Extension of the west end of TAN-620 (cannot be verified).	NA	NR	Classified as inactive and surplus facility. Eliminated as a potential release site.
TAN/CTF					
TAN-624	LOFT Containment Building Entry	Previously was the test cell at the TAN/IET Area. Cell was closed-in and made part of the containment vessel in late 1977. Galvanized metal.	NA	NR	Classified in inactive and surplus facility. Structure would not be used for storage of hazardous waste. Eliminated a potential release site.
TAN-629	Hangar	Reinforced concrete structure with reinforced concrete barrel shell roof. Structural steel metal doors at each end of building are 60 ft high.	NE	NE	SMC facility. Not available for evaluation. Operations are enveloped by SMC operating procedures. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-630	Control and Equipment Building	Two-story building. Reinforced concrete exterior walls, with intermediate floors and roof. Interior is dry; wall and masonry block walls. The entire building is covered with a minimum of 6 ft 6 in. of earth for radiation shielding.	NA	NR	Vacant. Will be classified as inactive and surplus facility by end of FY-1996. Structure would not be used for storage of hazardous waste. Eliminated as a potential release site.
TAN-631	Tank Building	Concrete block walls, steel frame, corrugated metal roof, concrete floor.	NA	NR	Demineralized water and compressed air storage. Eliminated as a potential release site.
TAN-632	Pump House	Pumice block walls, removable corrugated metal roof.	NA	NR	Pump, potable water chlorinator, pump controls. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-634	Unfinished and abandoned foundation for Diesel Generator Building	Building was designed for extinct program. Construction was not completed.	NA	NR	Unfinished foundation (concrete pad). Eliminated as being a potential release site.
TAN-635	H&V 10 South Continuous Air Monitor Building	One story. Concrete block walls, corrugated metal roof.	NA	NR	Vacant. Classified as inactive and surplus facility. Structure would not be used for storage of hazardous waste. Eliminated as a potential release site.
TAN-637	Sparging Compressor Building	Prefabricated metal.	NA	NR	Out of service. Air compressor and associated controls. Structure would not be used for storage of hazardous waste. Eliminated as a potential release site.
TAN-639	Pump House	Pumice block walls, removable roof.	NA	NR	Pumping equipment. Structure would not be used for storage of hazardous waste. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-650	Containment and Service Building	Combination of aboveground steel-domed reactor containment vessel, 97 ft high, with a basement; and an equipment building of four stories aboveground and basement. Both structures are attached at the basement level. Both have reinforced concrete exterior walls, wood interior framing or concrete block interior. Partial corrugated sheet metal siding and roofing on the four-story part.	NA	NR	Storage of nonhazardous materials. Structure would not be used for storage of hazardous waste. Future state historical monument. Eliminated as a potential release site.
TAN-659	Control Building	No detailed structure description available.	NA	NR	Vacant building. Structure would not be used for storage of hazardous waste. Eliminated as a potential release site.
TAN-663	H&V 10 North Continuous Air Monitor Building	One story. Concrete block walls and corrugated metal roof.	NA	NR	Storage of nonhazardous materials. Eliminated as a potential release site.
TAN-665	Pump House	No detailed structure descriptions available.	NA	NR	Diesel pump providing redundant water supply to fire hydrant piping system loop. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN T-24 (TAN-658)	Storage	One story. Corrugated steel sides and roof.	NE	NE	SMC storage. Screened from being a potential release site.
TAN T-25 (TAN-669)	Craft Shop	One story. Corrugated steel sides and roof.	NA	NR	Vacant. SMC building. Screened from being a potential release site.
TAN T-27 (TAN-651)	Heat Stress Relief Structure	No detailed structure description available.	NA	NR	Vacant. Classified as inactive and surplus facility. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN T-28 (TAN-657)	Heat Stress Relief Structure Control Building	No detailed structure description available.	NA	NR	Vacant. Classified as inactive and surplus facility. Eliminated as a potential release site.
TAN-671	Office Trailer, North	Trailer	NA	NR	Offices. SMC . Not available for evaluation. Eliminated as a potential release site.
TAN-672	Office Trailer, South	Trailer	NA	NR	Offices. SMC . Not available for evaluation. Eliminated as a potential release site.
TAN-673	Office Trailer, West	Trailer	NA	NR	Offices. SMC . Not available for evaluation. Eliminated as a potential release site.
TAN-674	Office Trailer Complex	Trailer	NA	NR	Offices. SMC . Not available for evaluation. Eliminated as a potential release site.
TAN-675	Boiler House	Steel frame.	NA	NR	Utilities. SMC. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan. Not available for evaluation. Eliminated as a potential release site.
TAN-676	Guardhouse	Masonry exterior	NA	NR	Access to TAN/SMC area. Security and communications equipment. Eliminated as a potential release site.
TAN-677	Truck Receiving	Steel framed	NE	NE	Truck docking building. SMC. Not available for evaluation. Eliminated as a potential release site.
TAN-678	Cafeteria No. 2	Masonry exterior	NA	NR	Cafeteria. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-679	Manufacturing and Assembly	Steel framed.	NE	NE	SMC. Not available for evaluation. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-681	Waste Treatment Building	Steel framed.	NE	NE	SMC. Not available for evaluation. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-682	Storage Building	Steel framed.	NE	NE	SMC. Not available for evaluation. Utilizes standard operating procedures. Screened from being a potential release site.
TAN-687	North Fire Station	One story. Steel frame. Walls: metal panel. Roof: metal. Floor: concrete.	NA	NR	Fire responsible equipment. Eliminated as a potential release site.
TAN-688	Specific Manufacturing Capability Warehouse	Steel framed.	NE	NE	SMC warehouse. Not available for evaluation. Operations are enveloped by standard operating procedures. Screened from being a potential release site.
TAN-689	Trailer	Trailer	NA	NR	SMC. Offices. Eliminated as a potential release site.
TAN-690	Oil Storage	Steel framed.	NA	NR	SMC. Oil storage. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan. Eliminated as a potential release site.
TAN-692	Liquid Waste Storage	Detailed description not available.	NE	NE	SMC. Not available for evaluation. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-693	Paint Shop	Detailed description not available.	NE	NE	SMC. Not available for evaluation. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-694	Tank Storage Building	Detailed description not available.	NE	NE	SMC. Not available for evaluation. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-695	Hazardous Material Storage	Detailed description not available.	NE	NE	SMC. Not available for evaluation. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN/TSF					
TAN-601	Guardhouse	One-story. Walls: pumice block. Roof: built up with steel trusses and metal deck. Floor: concrete. Ceiling height: 12 ft. Floor load capacity: 2,000 lb/ft^2.	NA	NR	Unmanned access to TAN/TSF area. Security and communications equipment. Eliminated as a potential release site.
TAN-602	Administration Building	One-story. Walls: pumice block. Roof: built up with wood trusses and deck. Attic area insulated. North-east addition. Roof: concrete. Deck and surface insulation with suspended ceiling. Walls and ceiling insulated with one-side finish insulation. Floor: concrete.	NA	NR	Vacant offices building. Inactive status. Screened from being a potential release site.
TAN-603	Service Building	One-story. Walls: pumice block. Roof: built up with wood trusses and deck. Floor: concrete. Ceiling height: 8 to 15 ft. Floor load capacity: 2,000 psi.	NA	NR	Medical facility, boiler room. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-604	Maintenance Shop	One story with mezzanine. Walls: pumice block. Roof: built up with steel trusses and metal deck. Floor: concrete. Ceiling height: 16 ft. Floor load capacity: 2,000 psi.	NA	NR	Craft shop, spare parts, storage, tool crib, offices. Operations are enveloped by standard operating procedures. Structure would not be used for storage of hazardous waste. Eliminated as a potential release site.
TAN-605	Substation Control House	One-story. Walls: pumice block. Roof: steel trusses and metal deck. Floor: concrete.	NA	NR	Electrical distribution and metering equipment. Eliminated as a potential release site.
TAN-606	Specific Manufacturing Building	One-story. Walls: pumice block. Roof: steel trusses and metal deck. Floor: concrete.	NE	NE	SMC Carpenter Ship. Structure would not be used for storage of hazardous materials/waste. Eliminated as a potential release site.
TAN-607	Manufacturing Assembly, and Hot Shop/Cells	75-ft high bay with double cranes: a 75- and 10-ton, and a 25- and 5-ton at south end of building. Warm Shop 80 by 42 ft high. Extensive Hot Shop 51 by 165 by 55 ft high. Walls: thick high-density concrete. Roof: built up. Floor: concrete. Concrete water pit and hot cells at north end.	2, moderate/2, low, < 3 low. Various ratings based on area. See referenced SAR[a]	INEL-94/0163[a]	
TAN-608	Water Filtration Building	One-story. Walls: pumice block. Roof: wood. Floor: concrete.	2, moderate[a]	INEL-94/0163[a]	Active. Pump, water treatment equipment. Pump station for radioactive storage pool. This facility has been retained to be further evaluated as a potential release site.
TAN-609	Equipment Maintenance Shop	One-story. Walls: concrete. Roof: built up with steel trusses and metal roof deck. Floor: concrete.	NA	NR	Transportation preventive maintenance. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-610	Water Pump House	One-story. Walls: pumice block. Roof: built up with steel trusses and metal roof deck. Floor: concrete.	NA	NR	Two domestic water pumps and two electric fire-water pumps for domestic and firewater supply. One diesel engine drive firewater pump. Active chlorine system. Operations enveloped by INEL Emergency Plan/RCRA Contingency Plan, TAN Spill Avoidance and Response Plan, TAN Emergency Plan, and standard operating procedures. Screened as potential release site.
TAN-611	Fuel Pump House	One-story. Walls: pumice block. Roof: built up with steel trusses and metal roof deck. Floor: concrete.	NA	NR	Pumping station for diesel fuel storage and boiler supply. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan, TAN Spill Avoidance and Response Plan, and TAN Emergency Plan implementation Procedures. Screened as potential release site.
TAN-612	Well No. 1 Pump House	One-story. Walls: pumice block. Roof: wood with wood trusses and wood deck. Felt roofing material.	NA	NR	Deep well pump and associated equipment. Eliminated as a potential release site.
TAN-613	Well No. 2 Pump House	One-story. Walls: pumice block. Roof: wood with wood trusses and wood deck. Felt roofing material. Floor: concrete.	NA	NR	Deep well pump and associated equipment. Eliminated as a potential release site.
TAN-615	Programmatic Assembly and Maintenance Facility	South part is a two-story high steel frame with a 1-ton monorail crane. North part is a high bay 21-ft loft with a 5-ton bridge crane. High bay has steel frame. Walls: metal. Roof: metal. Floor: concrete.	NA	NR	Craft Maintenance Shop and offices. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-616	Liquid Waste Treatment Plant	Two-story. Walls: concrete. Roof: built-up. Floor: concrete.	< 3, low[a]	INEL-94/0163[a]	Inactive, scheduled for decontamination and dismantlement. This facility has been retained to be further evaluated as a potential release site.
TAN-618	Pad Data Collection Building	No detailed structure description available.	NA	NR	Houses electrical instrumentation to monitor casks on storage pads (TAN-790 and 791). Eliminated as a potential release site.
TAN-623	Sewage Treatment Plant Control Building	One-story. Walls: pumice block. Roof: wood rafters and deck with felt roofing. Floor: concrete.	NA	NR	Active. Sewage treatment equipment and controls. Evaluated by OU 1-08. Eliminated as a potential release site.
TAN-628	Warehouse	One-story with mezzanine. Two-ton bridge crane. Walls: pumice block. Roof: built up with steel trusses and metal roof deck. Floor: concrete.	NE	NE	SMC. Not available for evaluation. Eliminated as a potential release site.
TAN-633	Hot Cell Annex	One-story. Walls: high density reinforced concrete. Ceiling: 10 ft. Floor: concrete; load capacity: 2,000 lb/ft^2.	<3, low[a]	INEL-94/0163[a]	Active, previous hot cells with remote handling equipment. Authorized to continue operation. Decontaminated. Eliminated as a potential release site.
TAN-636	Carpentry and Paint Shop	One-story. Light steel structure with finished interiors. 1-ton jib crane and ?-ton monorail crane. Floor: concrete. Ceiling height: 12 ft. Floor load capacity: 2,000 lb/ft^2.	NA	NR	Paint spray booth and carpentry equipment. Operations enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-638	Guard house	Unoccupied one-story. Walls: pumice block. Roof: metal. Floor: concrete.	NA	NR	Vacant. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-647	Containment Storage Building	One-story high bay with four rail tracks. Steel structure frame. Walls: metal. Roof: metal. Height: 40 ft. Floor: gravel.	< 3, low[a]	INEL-94/0163[a]	Storage. Active. Authorized for continual operation. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan. Soil beneath asphalt outside of building may be radioactively contaminated. The asphalt pads of this facility has been retained to be further evaluated as a potential release site.
TAN-648	Storage Building	One-story. Steel structure frame. Walls: metal. Roof: metal. Floor: cement.	< 3, low[a]	INEL-94/0163[a]	Storage. Active. Authorized for continual operation. Soil beneath asphalt outside of building may be radioactively contaminated. The asphalt pads of this facility has been retained to be further evaluated as a potential release site.
TAN-649	Water Filtration Building	One-story. Outside 2-ton jib crane. Walls: pumice block. Roof: concrete. Floor: concrete.	NA	NR	Water filtering system and chemistry control equipment. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-653	Multi-craft Shop	Two-story. Roof: metal. Walls: metal. Floor: concrete. Two 2,000-lb electric hoists. Plant air system. Demineralized water. Instrument shops.	NA	NR	Storage. Eliminated as a potential release site.
TAN-654	Storage Building	One-story steel structure. Floor: concrete.	NE	NE	SMC. Storage. Not available for evaluation. Eliminated as a potential release site.
TAN-655	Liquid Waste Lift Station	One-story. Walls: concrete. Roof: concrete. Floor: concrete. Underground concrete sump.	NA	NR	Sump pumps to pump liquid and process water to sanitary evaporation pond. Eliminated as a potential release site.
TAN-660	Maintenance Storage Staging Area	One-story. Steel frame. Walls: metal panel. Roof: metal. Floor: concrete.	NA	NR	Material Storage. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-661	Turntable Control Building	One-story. Walls: wood. Roof: wood. Floor: wood.	NA	NR	Turntable control equipment. Eliminated as a potential release site.
TAN-662	Gas Cylinder and Oil Storage Area	Two, one-story, steel structures with cement foundations. Walls: metal. Roof: metal. Floor: concrete. Concrete block wall separates the structures.	NA	NR	Storage for argon, oxygen, and acetylene. Operations are enveloped by standard operating procedures. Eliminated as a potential release site.
TAN-664	Automotive Service Station	One-story. Steel frame. Walls: metal. Roof: metal. Floor: concrete.	NA	NR	Motor oil storage and service supplies. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan, TAN Spill Avoidance and Response Plan Implementation Procedures. Eliminated as a potential release site.
TAN-666	Radioactive Liquid Waste Transfer and Storage Building	One-story (8 by 16 ft). Walls: concrete. Roof: concrete. Floor: concrete.	< 3, low[a]	INEL-94/0613[a]	Not in use. Authorized for continual operation. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan. This facility has been retained to be further evaluated as a potential release site.
TAN-667	Small Machine Shop	One-story. Walls: metal. Roof: metal. Floor: concrete.	NA	NR	Small machine, valve, and sheet metal shops. Structure would not be used for storage of hazardous materials/waste. Eliminated as a potential release site.
TAN-668	Heavy Equipment Cleaning Facility	High bay. Walls: metal. Roof: metal. Floor: concrete (1,000 T). 28 by 33 ft door. Truck exhaust vent demineralized water.	2, moderate[a]	INEL-94/8613[a]	Heavy equipment. and cask cleaning facilities with steam cleaning system. This facility has been retained to be further evaluated as a potential release site.
TAN-670	Chlorine Treatment Building	One-story. Walls: wood. Roof: wood. Floor: wood.	NA	NR	Not used. No hazardous materials stored in building. Previously used for sewer treatment. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-680	Bus Fuel Pump Station	One-story prefabricated insulated metal building. Explosion proof.	NA	NR	Electric control panels. Standard industry package motor oil, antifreeze, and vehicle maintenance supplies. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan, TAN Spill Avoidance and Response Plan, and TAN Emergency Plan Implementation Procedures. Eliminated as a potential release site.
TAN-683	Storage	One-story steel structure. Floor: concrete.	NE	NR	SMC. Storage. Not available for evaluation. Eliminated as a potential release site.
TAN-684	Storage	One-story steel structure. Floor: concrete.	NA	NR	SMC. Storage. Not available for evaluation. Eliminated as a potential release site.
TAN-686	Security Entry Trailers	Double-wide trailer.	NA	NR	SMC. Offices. Not available for evaluation. Eliminated as a potential release site.
TAN-740	Disposal Pond	Unlined disposal pond. 35 acres. Pond surrounded by 5-ft berm.	NA	NR	Disposal Pond. 30 acres have never been used. 2.5 acres are still active. Receives treated sewage, boiler blowdown, and process wastewater. Permitted for Land Application of Waste Water with the State of Idaho. Evaluated by OU 1-06. Eliminated as a potential release site.
TAN-790	TMI Abnormal Waste Storage Pad	Pad, 40 x 108-ft reinforced concrete, 8 in. thick.	2, low[a]	INEL-94/0613[a]	Active. Authorized for continual operation. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan. Eliminated as a potential release site.
TAN-791	Spent Fuel Storage Cask Testing Pad	Pad, 40 x 94-ft reinforced concrete, 2 in. thick.	2, low[a]	INEL-94/0613[a]	Active. Authorized for continual operation. Operations are enveloped by INEL Emergency Plan/RCRA Contingency Plan. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
WRRTF					
TAN-640	Thermal-Hydraulic Experimental Facility (THEF) Assembly and Test Building	One-story. High-density concrete exterior walls. Metal decking, four-ply fiberglass and asphalt roofing with rock surfacing. Insulated. Concrete floor. One 5-ton bridge crane, one 10-ton bridge crane. Two 35-ft roll-up doors. 50-ft ceiling height. Connected to TAN-641.	NA	NR	Laboratory analysis and testing. Experimental equipment. High pressure nitrogen blowdown test facility equipment. Laboratory, offices. Eliminated as a potential release site.
TAN-641	THEF Control Building	One-story. A portion of the building exterior walls is 8 in. HCB and a portion is high-density concrete. Metal decking, four-ply fiberglass and asphalt roofing with rock surfacing. Insulated. Concrete floor. Connected to TAN-640.	NA	NR	Vacant. Laboratory, offices, data acquisition, and control rooms. Eliminated as a potential release site.
TAN-642	Gatehouse	One-story. Eight-in. concrete block walls. Four-ply asphalt and asbestos roofing with rock surface. Two television cameras for facility entrance.	NA	NR	Entrance to WRRTF. Vacant. Eliminated as a potential release site.
TAN-643	Chlorination Building	One-story wooden building with wooden floor.	NA	NR	Not in service. For treatment of sewage. Eliminated as a potential release site.
TAN-644	Water Well Pump House	Eight-in. pumice concrete block building. One-half of the roof is removable and is covered with asphalt. The other half is four-ply fiberglass and asphalt, insulated with plastic foam on tip of the roofing.	NA	NR	Raw water and firewater system pump. Structure would not be used for storage of hazardous materials or waste. Eliminated as a potential release site.

Table D-1. (continued).

Building number	Name of building	Description	Hazard classification (hazard)[a]	Safety analysis report	Comments
TAN-645	Semiscale Control and Administration Building	One-story. Masonry exterior walls, steel frame with metal panel interior walls. Metal decking, flour-ply fiberglass, and asphalt roofing with rock surfacing. Insulated.	NA	NR	Offices, laboratory, control room. Eliminated as a potential release site.
TAN-646	Semiscale Assembly and Test Building	One story. Corrugated transit siding. Wood interior framing. Metal decking, four-ply fiberglass and asphalt roofing with rock surfacing. Insulated. One 50-ton crane and one 5-ton crane.	NA	NR	Test Loop. Eliminated as being a potential release site.
TAN-652	Fire Protection Pump House	One story. Masonry exterior walls, steel frame. Four-ply fiberglass and asphalt roof insulated with plastic foam on top of roofing.	NA	NR	Fire protection emergency pumps. Structure would not be used for storage of hazardous materials/waste. Eliminated as a potential release site.

NA = Not applicable (hazards are "routinely accepted by the public" or "other industrial facilities")

NF = Nuclear Facility with hazard category indicated.

Low = Non-nuclear Facility with low hazardous classification.

NR = A SAR is not required.

NE = Not evaluated (SMC operations).

a. Source: *Safety Analysis Report for Test Area North Operations at the Idaho National Engineering Laboratory*, September 1995.

D-4 REVIEW OF TAN MANAGEMENT CONTROLS

An integral part of the analysis was the review of management control procedures to mitigate potential releases to the environment at the TAN. The documents and procedures utilized to mitigate potential releases to the environment at the TAN include safety analysis reviews for the nuclear facilities, RCRA Contingency plans, Spill Avoidance and Response Plan, Emergency Plan Implementing procedures, and Nuclear Materials Inspection and Storage procedures. These procedures are designed to specifically address potential releases to the environment at TAN, and the appropriate reporting and mitigation measures to be implemented in the case of such an event. In support of these management control procedures are standard operating procedures that cover operational aspects of activities at the TAN. These procedures are designed to eliminate or minimize the risk of off-normal events. In addition to TAN specific management control procedures, the site contractor has INEL-wide program requirements. These program requirements include physical hazards, asbestos control, and toxic substance control. The management control procedures referenced above are discussed in the following sections.

D-4.1 Nuclear Safety Analysis Reports (SAR)

Department of Energy Order 5480.23, "Nuclear Safety Analysis Reports," requires a safety analysis to be performed for each DOE nuclear facility. The term nuclear facility is defined in this order to include nuclear reactor and nonreactor nuclear facilities. The latter includes activities or operations with the following functions:

1. "Produce, process, or store radioactive liquid or solid waste, fissionable materials or tritium"
2. "Conduct separation operations"
3. "Conduct irradiated materials inspection, fuel fabrication, decontamination, or recovery operations"
4. "Conduct fuel enrichment operations"
5. "Perform environmental remediation or waste management activities involving radioactive materials."

The order further requires that, as part of the safety analysis, "contractors shall be required to perform a hazard analysis of their nuclear activities and classify their processes, operations, or activities in accordance with the following requirements:

- **Classification Categories**—The consequences of unmitigated releases of radioactive and/or hazardous materials shall be evaluated and classified by the following hazard categories:
  - *Category 1 Hazard.* The hazard analysis shows the potential for significant offsite consequences.
  - *Category 2 Hazard.* The hazard analysis show the potential for significant onsite consequences.

- *Category 3 Hazard.* The hazard analysis shows the potential for only significant localized consequences.

- **Inventory of Hazardous Materials**—The hazard analysis shall be based on an inventory enveloping all radioactive and nonradioactive hazardous materials that are stored, utilized, or may be formed within the nuclear facility.

- **Evaluation of Potential Releases**—The hazard analysis shall identify energy sources or processes that might contribute to the generation or uncontrolled release of hazardous materials. The hazard analysis shall estimate the consequences of accidents in which the facility or process and/or materials in the inventory are assumed to interact, react, or be released in a manner to produce a threat or challenge to the health and safety of individuals on-site and off-site."

Safety analyses performed in compliance with these requirements contain inventories of potentially releasable hazardous materials. Such safety analyses also include a listing of the barriers, physical and administrative to such releases, and a discussion of the accident types that might breach the barriers. Guidance is given in DOE Standard DOE-STD-1027-92, "Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports," on radioactive material inventory levels that would constitute the threshold of each hazard category. Although category thresholds are not defined for nonradioactive hazardous materials, the concepts of "localized," "onset," and "offset" consequences of a release are applied to those materials as well.

For nonnuclear facilities (those having no nonradioactive inventories or inventories below the category 3 threshold of DOE-STD-1027-92), DOE Standard DOE-EM-STD-5502-94, "Hazard Baseline Documentation," gives documentation for various levels of hazardous materials inventories.

In practice, most facilities and operations at the INEL have a hazard analysis performed that identifies the hazards of the operation and helps initially categorize the facility or operation for further analysis according to the level of hazard established. The only activities not included in this would be those whose hazards are obviously of a nature that is routinely accepted by the public. Even those activities comply with a requirement to maintain Materials Safety Data Sheets on even small amounts of hazardous materials.

D-4.2 TAN Emergency Plan/RCRA Contingency Plan

The INEL Emergency Plan/RCRA Contingency Plan describes the actions that a facility will take to minimize hazards to human health or to the environment from fires, explosions, or any unplanned sudden or nonsudden releases of mixed or hazardous waste or waste constituents to the air, soil, or surface water at the INEL. Addendum 4, Test Area North, of the plan provides for the actions specifically related to TAN. The provisions of the plan will be carried out immediately after any event that could threaten human health or the environment. The plan has been prepared to satisfy all relevant requirements for contingency plans for facilities under the purview of the RCRA promulgated in 40 CFR 262.34.

Contained in the addendum (Appendix G) is the TAN Spill Avoidance and Response Plan, which establishes general policy and responsibilities for spill avoidance and response requirements for applicable operations at TAN. The plan is prepared in accordance with the *INEL Environmental Compliance Planning Manual,* Section 3.9.2, "Spill Avoidance and Response Plans;" DOE Order 5400.1; "General

Environmental Protection Program;" and DOE Order 5500 series "Emergency Preparedness;" and 40 CFR 122.26 "National Pollutant Discharge Elimination System Storm Water Permit Regulations."

Facility operations within the TAN area that have the potential to release hazardous substances (listed in 40 CFR parts 116, 302, 355, and 372) or petroleum products to the environment are responsible for implementing these spill avoidance and response requirements unless the operations are covered by a RCRA contingency plan or operations that store these substances in the same form and concentration as a product packaged for distribution and use by the general public. Facilities at TAN that have been identified as potentially needing to implement the spill and response requirements are TAN-611 (Diesel Fuel Pumphouse), TAN-664 (Service Station), and the Bus Fuel Pump Station.

D-4.3 Asbestos Control Program

An asbestos control program at the INEL establishes mandatory standardized requirements for any asbestos-related work. This program is regulated by the Lockheed Martin Idaho Technologies Company (LMITCO) *Program Requirements Documents* PRD-73, "Asbestos Control Program." This program lists the requirements of administrative responsibilities, surveillance, exposure and assessment, compliance methodology, and all other aspects of regulating asbestos at the INEL. Currently, a database software program called HAZ CAD is being implemented at the INEL to track asbestos-containing material per federal regulations.

D-4.4 Toxic Substance Control

The Power Management organization at the INEL is the principal user of polychlorinated biphenyls (PCBs). Power Management keeps records of all equipment containing PCBs, and provides data for reports from their database. The LMITCO Traffic Management organization manifests all PCB shipments to non-INEL TSD facilities and keeps logs of all manifest documents and all certificates of disposal. Once a year, an "Annual Records and Document Log" report is prepared by the Environmental Technical Support Unit with assistance from Traffic Management and Power Management. The report is then submitted to the Department of Energy Idaho Operations Office (DOE-ID) by July 1 of each year. This is a LMITCO administrative requirement and as well as being required by 40 CFR 761.180(a).

As of October 1, 1985, the use of transformers containing PCBs was banned by federal law if they posed an exposure risk to food and feed; if not, they could be used for the remainder of their useful lives, if registered with the building owners and fire departments by December 1985. At LMITCO, all transformers containing PCBs with concentrations greater than 50 parts per million (ppm) that are owned by Power Management have been replaced or retrofilled as of 1990. It is the policy of LMITCO to dispose of all PCB-containing materials (including those that are under 50 ppm and above 25 ppm) at an EPA-approved disposal site.

The primary controlling document regulating the use and disposal of PCBs at the INEL is the EG&G Idaho, Inc. *Environmental Manual,* No. EM-A10, entitled "Toxic Substances Control Act."

D-5. SUMMARY AND CONCLUSIONS

Based on the analysis performed of co-located facilities and activities and management controls to prevent potential releases to the environment, only the TAN Hot Shop facility; the Radioactive Parts Service and Storage (RPSSA) building outside asphalt pads, which is a CERCLA site; and the two Radioactive Liquid Waste Treatment and Transfer/Storage buildings were identified to have the potential to impact comprehensive risk at TAN. The analysis included both the active and inactive systems at TAN. The analysis did not identify any structures or facilities that posed an imminent threat of release; however, the retention of these areas is based primarily on remote accident scenarios or on documented past releases at these or similar sites. The Hot Shop facility, for the purposes of this analysis, is defined as consisting of the TAN-607 Hot Shop, the Heavy Equipment Cleaning Facility, the Hot Shop Pool, and support areas (TAN-60, TAN-608, TAN-648). The Hot Shop area would require a Zone 3 earthquake that could cause the pool to crack causing loss of shielding (water) before this area would impact the environment. The settlement agreement between the State of Idaho, the Department of Energy, and the Department of the Navy (which is also called the Batt Agreement) requires Three Mile Island fuel to be removed from the pool by June 1, 2001. It is planned that all other materials stored in the pool will be removed and the pool drained at that time also. The contamination outside of the RPSSA buildings (TAN-647 and TAN-648) is covered by asphalt and fixed in place. The Radioactive Liquid Waste Treatment and Transfer/Storage buildings (TAN-616 and TAN-666) are currently unused, with the treatment building scheduled for removal in FY-1998. All of sites represent structures that are part of active operations at TAN, which are covered under appropriate management control procedures. The potential for these retained sites to impact current risk estimates is very remote.