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Application for a Title V Operating Permit for the Idaho National Engineering and Environmental Laboratory

Volume VII Test Area North

INEEL
Idaho National Engineering and Environmental Laboratory
Home of Science and Engineering Solutions

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Application for a Title V Operating Permit for the Idaho National Engineering and Environmental Laboratory

Volume VII
Test Area North

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FOREWORD

Volume VII is one of a total set of ten volumes prepared for the Application for a Title V Operating Permit for the Idaho National Engineering and Environmental Laboratory.

The volumes making up the INEEL operating permit application are numbered as follows.

Volume I	Site-wide Standards and Information, and Operating Permit Application Guide
Volume II	Argonne National Laboratory-West
Volume III	Central Facilities Area
Volume IV	Idaho Nuclear Technology and Engineering Center
Volume V	Waste Reduction Operations Complex
Volume VI	Naval Reactors Facility
Volume VII	Test Area North
Volume VIII	Test Reactor Area
Volume IX	Radioactive Waste Management Complex
Volume X[a]	Radioactive Waste Management Complex, Advanced Mixed Waste Treatment Project, is forthcoming.

This February 2001 application is an updated revision of the July 1995 application (INEL-95/0155, Rev. 1) written to include, but not limited to:

- Changes to the Idaho Administrative Procedures Act Air Regulation;
- Updating the name of the Idaho Chemical Processing Plant to Idaho Nuclear Technology and Engineering Center (Volume IV);
- Cessation of various programs; and
- Addition of Volume X (which is forthcoming) that reflects BNFL, Inc. as the operator for the Advanced Mixed Waste Treatment Project a Radioactive Waste Management Complex.

a. Anticipated completion FY 2002 by BNFL, Inc.

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ACRONYMS

AEC	Atomic Energy Commission
AFBC	atmospheric fluidized bed combustion
AMWTF	Advanced Mixed Waste Treatment Facility
ANL-W	Argonne National Laboratory-West
ANSI	American National Standards Institute
AST	above-ground storage tank
ATR	Advanced Test Reactor
BBWI	Bechtel BWXT Idaho, LLC
BORAX	Boiling Water Reactor Experiment
BRC	below regulatory concern
CAM	continuous air monitor
CEMS	continuous emission monitoring system
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFA	Central Facilities Area
CFR	Code of Federal Regulations
CSSF	Calcined Solids Storage Facility
CGS	Calcine Grinder Setup
COMS	continuous opacity monitoring system
CPP	Chemical Processing Plant (now known as INTEC)
CTF	Contained Test Facility (formerly LOFT)
DEQ	Department of Environmental Quality
DOE	Department of Energy
DOE-ID	Department of Energy-Idaho Operations Office
DOG	dissolver off-gas
DOP	dioctyl phthalate
DOT	Department of Transportation
DU	depleted uranium
DVF	Drum Venting Facility
ECF	Expended Core Facility
EDE	effective dose equivalent
EIS	environmental impact statement
EPA	Environmental Protection Agency
ETR	Engineering Test Reactor
FAA	Federal Aviation Administration
FDP	Fluorinel Dissolution Process
FSA	Fuel Storage Area
HAP	hazardous air pollutant
HEPA	high-efficiency particulate air
HFEF	Hot Fuel Examination Facility (located at ANL-W)

HLLWE	high level liquid waste evaporator
HQ	headquarters
HVAC	heating, ventilation, and air conditioning
ICPP	Idaho Chemical Processing Plant (now known as INTEC)
IDAPA	Idaho Administrative Procedures Act
IET	Initial Engine Test
INEEL	Idaho National Engineering and Environmental Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
JP-4	jet propulsion 4
JP-8	jet propulsion 8
LET&D	Liquid Effluent Treatment and Disposal (Facility)
LLW	low-level radioactive waste
LOFT	Loss-of-fluid Test
M&O	management and operations
MCR	maximum continuous rating
MDF	Material Development Facility
MTR	Materials Test Reactor
MWSF	Mixed Waste Storage Facility
NA	not applicable
NESHAP	National Emission Standards for Hazardous Air Pollutants
NRF	Naval Reactors Facility
NWCF	New Waste Calcining Facility
OCM	organic composite material
PBF	Power Burst Facility
PCS	petroleum-contaminated soil
PEW	process equipment waste
PM	particulate matter
PM-10	particulate matter with a diameter less than 10µ
PREPP	Process Experimental Pilot Plant
PRF	Process Reclamation Facility
PSD	prevention of significant deterioration
PTC	permit to construct
RAL	Remote Analytical Laboratory
RAM	remote area monitor
RCRA	Resource Conservation and Recovery Act
RCT	radiation control technician
RDF	refuse-derived fuel
RE	Retrieval Enclosure
RESL	Radiological Environmental Sciences Laboratory
RFP	Rocky Flats Plant
RWMC	Radioactive Waste Management Complex

SAL	Special Analysis Laboratory
SDA	Subsurface Disposal Area
SES	Special Equipment Services
SMC	Specific Manufacturing Capability (Facility)
SPING	stack particulate, iodine, and noble gas
SRT	special response team
SWEPP	Stored Waste Examination Pilot Plant
TAN	Test Area North
TMI-2	Three Mile Island Unit 2
TRA	Test Reactor Area
TRAHC	Test Reactor Area Hot Cell
TRU	transuranic
TSA	Transuranic Storage Area
TSF	Technical Support Facility
TSP	total suspended particulates
U.S.C.	United States Code
UST	underground storage tanks
UTM	Universal Transverse Mercator
VMT	vehicle miles traveled
VOC	volatile organic compound
VOCNM	Volatile organic compound-non methane
VOG	vessel off-gas
WCF	Waste Calcining Facility
WERF	Waste Experimental Reduction Facility
WIPP	Waste Isolation Pilot Plant
WMF	Waste Management Facility
WROC	Waste Reduction Operations Complex
WRRTF	Water Reactor Research Test Facility
WSF	Waste Storage Facility
WWTF	Warm Waste Treatment Facilities

SYMBOLS AND ABBREVIATIONS

α	alpha
β	beta
β/γ	beta/gamma
Btu	British thermal unit
Ci	curie
Ci/mo	curie per month
Ci/yr	curie per year
Cm^2	square centemeters
CO	carbon monoxide
g	gram
gr	grain
hp	horse power
lb	pound
µm	micrometers (10^{-6} meters)
MBtu	million British thermal unit
mrem	thousandth of a roentgen equivalent man
mrem/yr	millirem per year
NO_x	nitrogen oxide
SO_x	sulfurous oxide
v/v	volume per volume
w.c.	water column

1. AREA SPECIFIC INFORMATION

1.1 Facility Description

TAN is located in the northern part of the INEEL Site and presently consists of three operational areas: the Technical Support Facility (TSF), the Specific Manufacturing Capability (SMC) Facility, and the Water Reactor Research Test Facility (WRRTF). Each of the operational areas at TAN is operated by a private contractor on behalf of DOE-ID. This volume includes discussions of each of the active operational areas at TAN (refer to Figures VII-1-1 and VII-1-2).

The TSF area functions as the administrative and support hub of TAN and houses many important programs, including a Hot Shop and cells for remote disassembly and repair of radioactive assemblies and a pool for spent fuel storage. Assembly crafts and maintenance for TAN/TSF is centered at TSF (see Figure VII-1-3). Maintenance for the classified areas of SMC is provided by the SMC Project.

The SMC is located in an area formerly known as the Contained Test Facility (CTF) approximately 1.5 miles northwest of TSF. The northwest area of CTF includes the reactor control and equipment buildings and numerous CTF support facilities. The SMC Project was assigned to TAN in mid-1983 as a military-related project. It is a multiphased manufacturing operation that produces armor packages for the U.S. Army. Most of the facilities that support SMC operations are located at CTF. Some SMC operations are also located at TSF, such as a Carpenter Shop (TAN-606), and a warehouse used by SMC under RCRA permit to store both hazardous waste and receiving materials (TAN-628). Several existing facilities were modified and new facilities were constructed to contain the research and manufacturing operations equipment used at SMC. The SMC Project also consists of typical maintenance and support facilities that operate in support of two major process areas: (a) TAN-629 Fabrication and Assembly, and (b) TAN-679 Rolling Operations (see Figure VII-1-4).

Additionally, SMC performs new and original work with a wide variety of relatively unconventional materials. These materials are, however, used in small quantities. While radionuclide emissions from SMC are generally limited to those present in depleted uranium, monolithic and/or structurally stable bodies of relatively pure and/or alloyed metals may be used in tests and/or production of fabricated parts. Some of the metals may be naturally radioactive with trace amounts of radionuclides other than those normally associated with depleted uranium. Such contamination is inherent to the metal and is not a significant contributor to the SMC source term. Numerous metallic elements are typically present in metallic-based alloys, many of which are present in only trace amounts. Metallic elements that may be present in substantial quantities (e.g., > 10% by weight) include but are not necessarily limited to the following:

Aluminum	Cobalt	Copper
Magnesium	Manganese	Molybdenum
Nickel	Zirconium	Niobium
Rhenium	Tantalum	Tin
Tungsten	Uranium	Vanadium
Zinc	Iron	Chromium

The SMC Project is a state-of-the-art research and manufacturing complex, which is constantly being upgraded and modified. Because SMC activities are often sensitive to issues involving national security, extraneous information that does not relate to air pollutant emissions is not presented in this permit application. Only information that is not of concern to national security has been presented in this permit application.

The WRRTF area includes the former Semiscale Project, the Blowdown Project, the Two-Phase-Flow Loop Project, and the NaK Project, all of which are now decommissioned. Very little activity now exists at WRRTF, with the exception of small R&D activities, such as engineering-scale design and testing of explosive detectors conducted for the Federal Aviation Administration (see Figure VII-1-5).

The Initial Engine Test (IET) facility has been deactivated. No emission sources are associated with this facility.

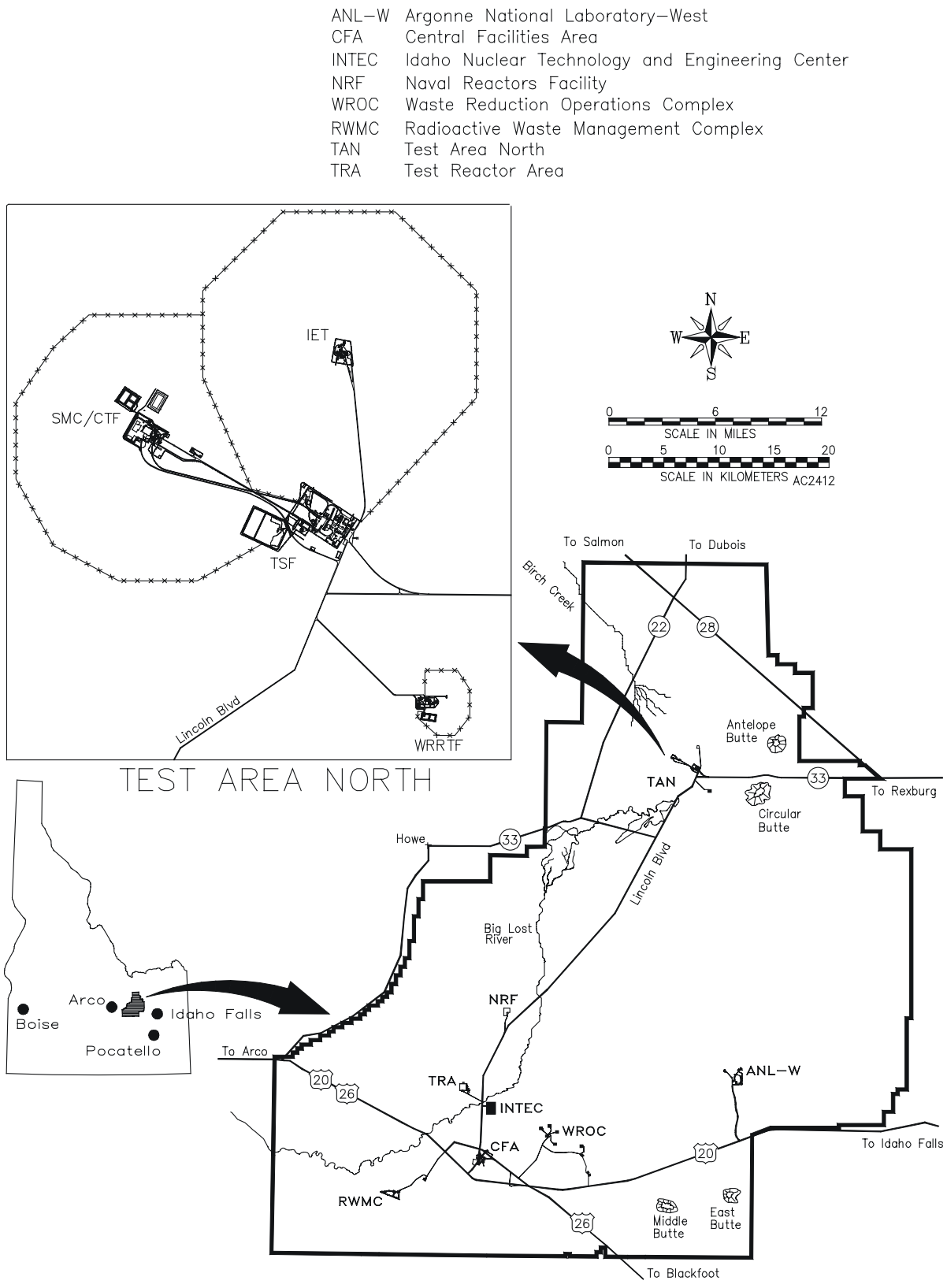

Figure VII-1-1. Location of the TAN areas at the INEEL.

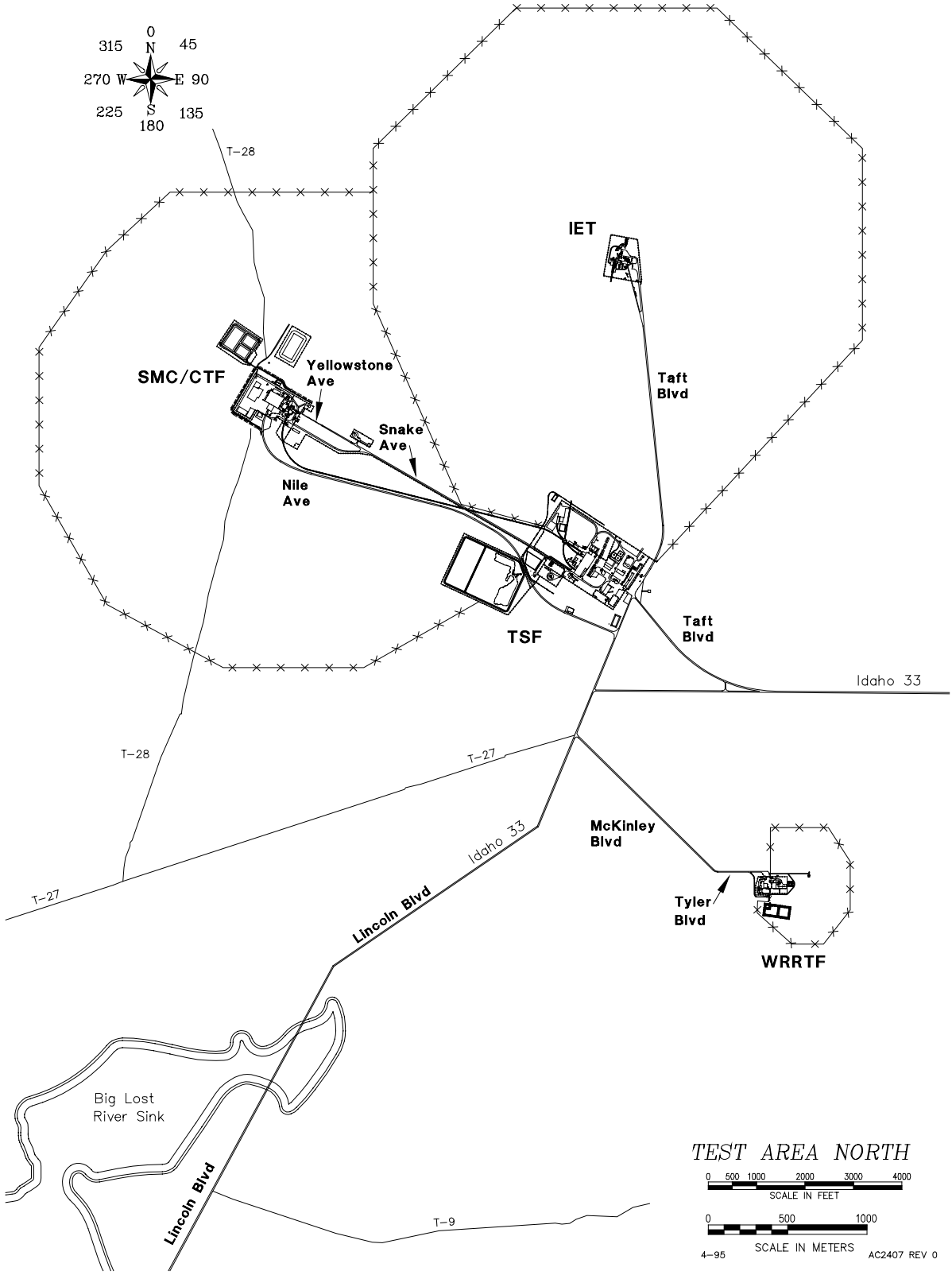

Figure VII-1-2. Layout and physical location of the individual TAN areas.

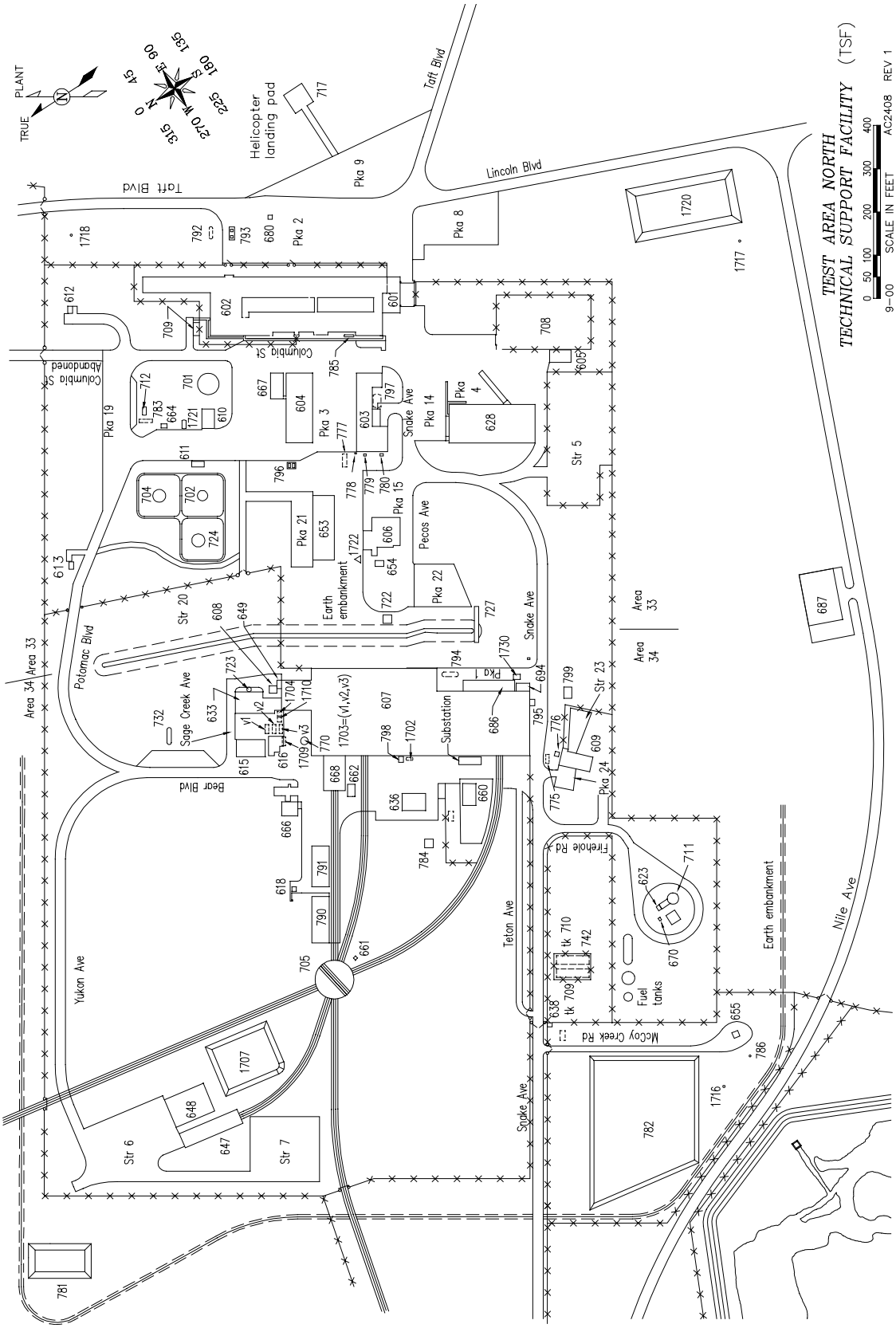

Figure VII-1-3. Technical Support Facility area.

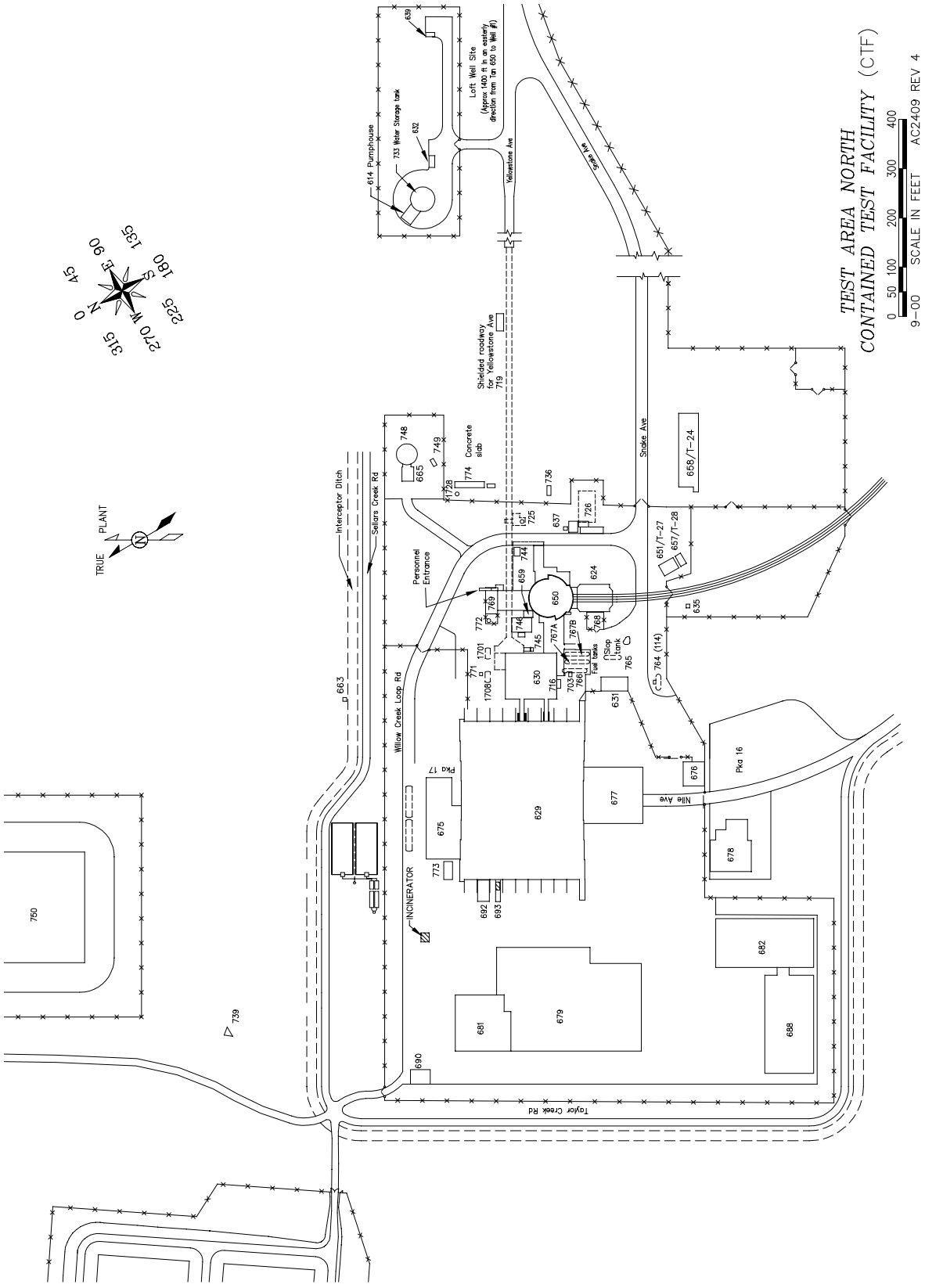

Figure VII-1-4. Contained Test Facility area.

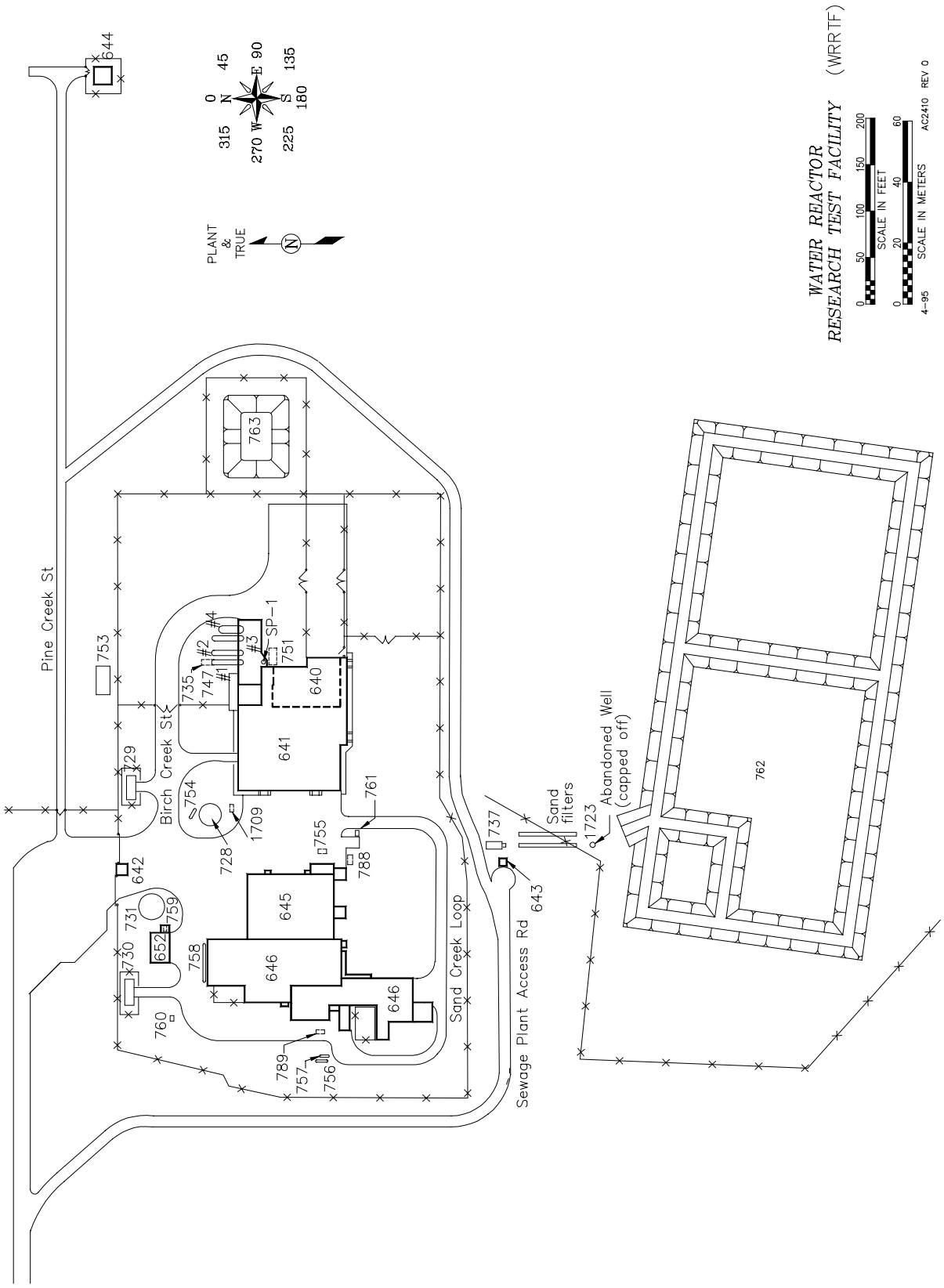

Figure VII-1-5. Water Reactor Research Test Facility area.

1.2 Emission Sources

Sources listed in Table VII-1-1 are considered significant and active. These sources are still operable and are used for performing necessary functions for the INEEL complex. There are other sources, however, that are inactive (i.e., are capped off or are mechanically disabled and for which there are no plans for future use) but have a future potential of emitting radionuclides. More particularly, since there are no planned uses or activities for these facilities at present or in the future, these releases could occur during decontamination and decommissioning activities.

One additional area of the TAN-607 complex proposed to be used for storage of sealed radiological or mixed wastes is TAN-633. Original operations in this facility included shielded work with high-level materials brought in from the Hot Shop. The facility has been decommissioned from original operations and decontaminated. Today, and in the future, this facility will be used only as interim storage for sealed containers of radiological or mixed waste. Therefore this facility is also included in this permit application so that it may continue storage operations under the permit shield. Emissions from TAN-633 are vented to the TAN-734-001 (or main) stack.

Table VII-1-2 lists the not-significant non-radionuclide sources that meet the not-significant criteria described in Volume I. Not-significant non-radiological sources will not be discussd in this Volume other than in the above referenced table (Table VII-1-2).

Table VII-1-3 lists the not-significant radiological air emission sourcs that meet the not-significant criteria described in Volume I, Section 3.10.2.6. A brief description of the not-significant radiological air emission sources is presented in Section 1.3.

Table VII-1-1. Significant air emission sources at TAN.

Area	Building name	Vent/stack number	Source description	Comments
TSF	Service Bldg./Steam Plant	TAN-603-027[a]	Boiler (20.9 MBtu)	Nonrad.
TSF	Service Bldg./Steam Plant	TAN-603-028[a]	Boiler (20.9 MBtu)	Nonrad.
TSF/SMC	Maint. Bldg.	TAN-606-005[a]	Carpenter Shop	Nonrad.
TSF/SMC	Maint. Bldg.	TAN-606-026[a]	Paint Shop	Nonrad.
TSF/SMC	Maint. Bldg.	TAN-606-027[a]	Paint Shop	Nonrad.
CTF/SMC	Fab and Assy.	TAN-629-002[a]	Laser Ops.	Nonrad
CTF/SMC	Fab and Assy.	TAN-629-012[a]	2B Painting	Nonrad., rad.
CTF/SMC	Fab and Assy.	TAN-629-013	Line 2	Rad.
CTF/SMC	Fab and Assy.	TAN-629-014[a]	2B Painting	Nonrad., rad.
CTF/SMC	Rolling Ops.	TAN-679-022	Production	Rad.
CTF/SMC	Rolling Ops.	TAN-679-023	Production	Rad.
CTF/SMC	Rolling Ops.	TAN-679-024	Production	Rad.
CTF/SMC	Rolling Ops.	TAN-679-025	Production	Rad.
CTF/SMC	Rolling Ops.	TAN-679-026	Production	Rad.
CTF/SMC	Rolling Ops.	TAN-679-027	Production	Rad.
CTF/SMC	Rolling Ops.	TAN-679-067[a]	Boiler (25 MBtu and 60 hp)	Nonrad.
CTF/SMC	Rolling Ops.	TAN-679-068[a]	Boiler (25 MBtu)	Nonrad.
CTF/SMC	Maintenance and Production Facility	TAN-677-030	Maintenance welding and production plasma-arc cutting, and storage	Nonrad.
CTF/SMC	TAN-681 Process Reclamation Facility	TAN-681-018	Process Stack	Rad.
CTF/SMC	TAN-681 Process Reclamation Facility	TAN-681-020	Process Stack	Rad.
CTF/SMC	Incinerator	TAN-681-023[a]	Classified document Incinerator	Nonrad.
TSF	Hot Shop	TAN-734-001	Hot Shop Stack	Rad.
Multiple[b]	Multiple	Multiple	Internal Combustion Engines	These units are not specifically exempted by IDAPA 58.01.01.317
Multiple[b]	Multiple	Multible	Petroleum Storage Tanks	40 CFR 60 Subpart Kb

a. This source consumes PSD increment during intermittent operation. A general discussion of this program is included in Volume I, Section 6.6.

b. This category includes multiple units at varying locations. They are addressed generally as a source category.

Table VII-1-2. Not-significant non-radionuclide air emission sources at TAN.

Area	Building	ID # for Vent/Stack or Tank	Source Description	Justification
TAN-604	Maintenance shop	022	Welding Shop	IDAPA 58.01.01.317.b.i.(9)
TAN-604	Maintenance shop	029,031	Paint Shop	IDAPA 58.01.01.317.b.i.(17)
TSF	TAN-607A	TAN-607A	Welding Shop	IDAPA 58.01.01.317.b.i.(9)
TSF	Hot Shop Bldg.	TAN-607-053	Warm Shop Exhaust	IDAPA 58.01.01.317.b.i.(30)
TSF	Hot Shop Bldg.	TAN-607	Hot Shop Extension	IDAPA 58.01.01.317.b.i.(30)
TSF	Hot Shop Bldg.	TAN-607-136	Decon Shop	IDAPA 58.01.01.317.b.i.(30)
TSF	Carpentry and Paint Shop	TAN-636-002	Maintenance Paint/Carpenter Shop	IDAPA 58.01.01.317.b.i.(30)
WRRTF	Control and Equip. Bldg.	TAN-641-034	Boiler (6.28 MBtu)	IDAPA 58.01.01.317.b.i.(7)
WRRTF	Control and Equip. Bldg.	TAN-641-035	Boiler (6.28 MBtu)	IDAPA 58.01.01.317.b.i.(7)
WRRTF	TAN-762A		Sewage Disposal Pond	IDAPA 58.01.01.317.b.i.(29)
CTF/SMC	TAN-679	N/A	Space Heaters (240,000 Btu)	IDAPA 58.01.01.317.b.i.(5)
TSF	TAN-701	TAN-701-001	TCE sparger	IDAPA 58.01.01.317.b.i.(30)
TSF/TAN	TAN-740		Process/Sewage Water Disposal Pond	IDAPA 58.01.01.317.b.i.(29)
CTF/SMC	TAN-629	TAN-629-029	Curing oven	IDAPA 58.01.01.317.b.i.(30)
SMC	TAN-T-675	99TAN00001	400-gal #2 fuel oil AST	IDAPA 58.01.01.317.b.i.(30)
SMC	TAN-675	98TAN00227	400-gal fuel oil #2 AST	IDAPA 58.01.01.317.b.i.(30)
SMC	TAN-679	98TAN00264	200-gal #2 fuel oil AST	IDAPA 58.01.01.317.b.i.(30)
SMC	TAN-679	98TAN00247	48,000-gal fuel oil #2 UST	IDAPA 58.01.01.317.b.i.(30)
SMC	TAN-679	98TAN00246	48,000-gal fuel oil #2 UST	IDAPA 58.01.01.317.b.i.(30)
SMC	TAN-679	98TAN00263	400-gal #2 fuel oil AST	IDAPA 58.01.01.317.b.i.(30)
SMC	TAN-T-679	99TAN00004	150-gal diesel AST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-602	98TAN00716	500-gal diesel #2 AST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-603	98TAN00322	1,000-gal diesel UST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-603	98TAN00323	250-gal diesel #2 AST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-607	98TAN00375	350-gal diesel #2 AST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-607	98TAN00373	1,000 gal diesel UST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-610	98TAN00401	300-gal diesel #2 AST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-611	98TAN00470	200,000 gal diesel #2 AST	IDAPA 58.01.01.317.b.i.(30)

Table VII-1-2. (continued).

Area	Building	ID # for Vent/Stack or Tank	Source Description	Justification
TAN	TAN-636	Carpenter Shop	002	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-652	98TAN00613	350-gal diesel #1 AST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-664	98TAN00491	15,000-gal gasoline UST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-665	98TAN00109	300-gal diesel #1 AST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-680	98TAN00650	15,000-gal diesel UST	IDAPA 58.01.01.317.b.i.(30)
TAN	TAN-687	98TAN00461	500-gal diesel #2 AST	IDAPA 58.01.01.317.b.i.(30)

1.3 Not-Significant Radionuclide Emission Source Descriptions

1.3.1 TAN-666, Radioactive Liquid Waste Transfer and Storage

TAN-666 is a one-story concrete building that contains the radioactive liquid waste system for the TAN Hot Shop, Hot Cell, and Hot Cell Annex. The facility receives and stores low-level radioactive liquid waste generated during periodic decontamination operations. The building is 33×28.5 ft and 20.5 ft above grade. The building floor is divided into two storage tank vaults located 10 ft below grade and a pump vault located 20.5 ft underground. The building was constructed in 1980 and contains 2-ft-thick concrete walls and floor.

The radioactive liquid waste system at TAN-666 is designed to receive and store liquid waste generated by processes, cleanup, and accidental spills of radioactive materials inside the TAN Hot Shop, Hot Cell, and Hot Cell Annex. The system consists of gravity drains from the Hot Cell complex areas, a loading/unloading station, a surge tank, two sets of redundant pumps, filters, and two 15,000-gallon stainless-steel storage tanks. The valves and pump controls at TAN-666 are accessed remotely to minimize worker radiation exposures.

Liquid waste is introduced to TAN-666 from floor drains in Hot Shop complex facilities, or liquid waste can be pumped from tank trucks through the liquid waste fill connection or a portable sump fill connection.

All liquid waste enters the surge tank by gravity flow. High and low liquid level sensors monitor the tank and display information in the radiation control technician (RCT) office. When the high liquid level sensor is activated, alarms sound in both the RCT office and the TAN-601 guard gate. The liquid waste pump is then manually turned on and the waste is pumped through a filter unit to one of two 15,000-gallon stainless-steel storage tanks. The facility provides two completely redundant pump, filter, and storage systems. Either pump can transfer waste from the surge tank or recirculate liquid from either storage tank through either filter and back into either storage tank.

The liquid waste may be pumped from the storage tanks into an outside tank truck for on-site or off-site processing. Liquid waste is transferred between trucks and storage tanks through an overhead pipe boom and flexible hose connection. The system is designed so that any remaining liquid drains back into the storage tanks or into the tank truck upon completion of the liquid waste transfer. Each tank is equipped with an overflow pipe leading to individual catch basin sumps in the tank vault, which drain by gravity to the surge tank sump pump. Any leakage in the tank vault would also flow into the catch basin sumps. Both storage tanks and the surge tank are connected to a common 4-in.-diameter vent line that extends 30 ft above ground level. The vent line is curved at the top to prevent rain infiltration and is screened to prevent access by birds or small animals. The vent is designated Stack TAN-666-001.

Samples of stored liquid waste may be removed from either storage tank via small stainless-steel sampling lines connected to sampling ports located on the east exterior wall of the tank vault, adjacent to the control panel.

1.3.2 TAN-607, Storage Pool

The TAN-607 Storage Pool is used for storage of spent nuclear fuel and other radioactive sources. Materials stored there include: Three-Mile Island canisters, 13 Loss-of-Fluid Test (LOFT) fuel bundles, one container of LOFT fuel remnants, seven commercial bundles, and 35 individual fuel pins in aluminum containers. Pool media (water) is sampled on a monthly basis for analysis of radioactivity.

The pool measures 70 ft long, 48 ft wide, and 24 ft deep and contains approximately 780,000 gallons of water. The pool is connected to the TAN Hot Shop vestibule via a 24-ft wide by 19-ft high passage directly under the Hot Shop wall. The north wall of the Hot Shop extends 5 ft down into the pool to shield the main pool area against radiation sources in the shop. The walls and floor of the Storage Pool are constructed of concrete.

The TAN-607 Storage Pool produces only fugitive emissions. The pool area is maintained at a slightly positive pressure such that emissions are through doors and other nonvent points. No monitoring equipment is required for this area even though constant air monitors are located near the south and north walls. These monitors are checked daily.

1.3.3 TAN-607, Warm Shop

The TAN-607 Warm Shop is located adjacent to the south wall of the TAN Hot Shop. It is approximately 80 ft long 40 ft wide. A four-track rail system extends into the Warm Shop from the west bi-parting doors. Casks mounted on special railbeds can be moved into and out of the shop using these rails. The Warm Shop contains three roof vents located in the apex of the roof. These vents discharge to a duct system that runs perpendicular to the roof line. This ducting is configured into a cyclic system that runs from the Warm Shop to a filtering system on the east side of TAN-607 and back again to the Warm Shop. Air circulation in the duct system is driven by means of two fans mounted within the ducting. On the exhaust side of the system a fan mounted near a vent located 30 ft east of the Warm Shop pulls the air from the Warm Shop. Air continues past this vent and enters a filtration system on the east side of the building. The Warm Shop supply air enters from the east side of TAN-607 and passes through a filtration unit before entering the supply air duct system. A supply air fan provides the negative pressure to pull air from outside the building into the Warm Shop. The overall system is set up so that when both fans are operational, air drawn from the Warm Shop is passed through the set of filter units on the east side of the building and then transferred back into the Warm Shop. The exhaust side fan cannot be operated unless the supply side fan is on. As a general practice the exhaust fan is rarely operated. Emissions from work activities in the Warm Shop therefore are considered fugitive for purposes of this application.

The Warm Shop has been historically used for sampling and repackaging activities. Casks used for handling and transportation of nuclear fuels are radiologically surveyed and sampled for external contamination, but are never opened. Information collected from these operations is used to determine requirements for ALARA procedures for handling and transportation of these units.

Sampling activities occurring in the Warm Shop involve a variety of materials for facilities across the INEEL. Sampling may be for purposes of characterizing low-level or hazardous mixed waste streams. Sampling may also be used in determining treatment and/or storage alternatives. Generally during waste characterization, radionuclide concentrations are usually low and not considered a risk to workers performing the operations. In cases where exposure levels exceed reasonable levels or are not in concert with ALARA principles the sample units are transported into the Hot Shop to perform the sampling activity. ALARA or safety principles are not compromised when performing activities in the Warm Shop. Characterization of mixed wastes may release small amounts of toxic air pollutants into room air that is subsequently emitted to ambient air via dedicated ventilation systems or as fugitive process emissions. Toxic and/or radiological emission from these activities is minimal.

Repackaging activities in the Warm Shop are routinely performed for downsizing hazardous, low-level, and/or mixed waste into smaller more manageable units. Repackaging is done for purposes of volume reduction, safety reinforcement of original packaging, and/or for segregation of waste into like-waste units for storage and/or treatment.

Other activities performed in the Warm Shop may include, but are not necessarily limited to, macro-encapsulation of contaminated metal chips, sizing of various contaminated metal alloys of metal debris, spent HEPA filter sampling and repackaging, and segregation of hazardous and mixed waste materials into like batches in preparation for shipment, storage and/or treatment.

1.3.4 TAN-607, Decon Shop

The TAN-607 Decon Shop is located along the south wall of TAN-607. It is a high bay having floor dimensions of 42 ft × 36 ft. The Decon Shop began operations in 1957 that continued for the next 30 years. The function of this facility until 1987 was performing decontamination of small equipment from within and without the INEEL. From 1987 to 1990 no decontamination was performed. In March 1990 the Decon Shop was recommended for decontamination and decommissioning. All sludges and process solutions were emptied and the process equipment was left in place until the facility was decontaminated. This task was completed by 1994. The Decon Shop contains a HEPA filter system that discharges through Stack TAN-607-136. It is proposed that the Decon Shop be used for activities similar to those occurring in the TAN Warm Shop.

Proposed future activities for the Decon Shop include sampling, repackaging, and segregation of wastes. Sampling activities occurring in the Decon Shop may involve a variety of materials from facilities across the INEEL. Sampling may be for purposes of characterizing low-level mixed waste streams or for determining treatment and/or storage alternatives. For mixed waste characterization operations, radionuclide concentrations will be low and must not be a risk to workers performing the operations. In cases where levels exceed reasonable levels or are not in concert with ALARA principles the sample units will be transported into the Hot Shop for performance of operations. In no case will ALARA or safety principles be compromised when performing activities in the Decon Shop. Also for mixed waste characterization small amounts of toxic air pollutants may be released into room air and emitted to ambient air via Stack TAN-607-136. In any case, toxic as well as radiological emission from these activities is small.

Repackaging activities in the Decon Shop will be performed for downsizing hazardous and/or mixed waste into smaller more manageable units for volume reduction, for safety reinforcement of original packaging units, or for segregation of waste into like-waste units for storage and/or treatment.

Other activities to be performed in the Decon Shop may include, but are not necessarily limited to, macro-encapsulation of contaminated metal chips, cask dismantlement, spent HEPA filter sampling and repackaging, and segregation of hazardous and mixed waste materials into like batches in preparation for shipment, storage and/or treatment.

1.3.5 TAN-607, PREPP Receiving Area

The TAN-607 PREPP Receiving Area is situated between TAN-607A and Hot Shop Operations. For purposes of this application the TAN-607 PREPP Receiving Area includes only the floor space immediately inside the bay door providing access to this facility. This will be the only area permitted for the activities discussed in this section. Past activities that have occurred in the PREPP Receiving Area include sampling of organic materials and glove box type operations. The PREPP Receiving Area has no dedicated stack associated with operations and therefore emissions are fugitive. Per this application the PREPP Receiving Area can be used for activities similar to those described in the TAN Warm Shop.

Proposed future activities for the PREPP Receiving Area include sampling, repackaging, and segregation of wastes. Sampling activities occurring in the PREPP Receiving Area may involve a variety of materials from facilities across the INEEL. Sampling may be for purposes of characterizing low-level

mixed waste streams or for determining treatment and/or storage alternatives. For mixed waste characterization operations, radionuclide concentrations will be low and will not be considered a risk to workers performing the operations. In cases where levels exceed reasonable levels or are not in concert with ALARA principles, the sample units will be transported into the Hot Shop for performance of operations. In no case will ALARA or safety principles be compromised when performing activities in the PREPP Receiving Area. Also for mixed waste characterization, small amounts of toxic air pollutants may be released into room air and emitted to ambient air via the bay door. In any case, toxic as well as radiological emissions from these activities will be small.

Repackaging activities in the PREPP Receiving Area will be performed for downsizing hazardous and/or mixed waste into smaller more manageable packaging units for volume reduction, for safety reinforcement of original packaging units, and/or for segregation of waste into like-waste units for storage, and/or treatment.

Other activities to be performed in the PREPP Receiving Area may include, but are not necessarily limited to, spent HEPA filter sampling and repackaging, and segregation of hazardous and mixed waste materials into like batches in preparation for shipment, storage and/or treatment.

1.3.6 TAN-607, Hot Shop Extension

The TAN-607 Hot Shop Extension is located directly west of the TAN-607 Hot Shop. It was constructed in 1988 to provide weather protection for work assemblies (i.e., Cask Assemblies) that were designated for work in the Hot Shop. Other purposes of the Hot Shop Extension are to perform radiological survey and sampling work on casks prior to transport into the Hot Shop. Past activities that have occurred in the Hot Shop Extension include sampling of organic wastes, and decontamination of radiologically contaminated equipment. The Hot Shop Extension contains no HEPA filter system or dedicated stack. The Hot Shop Extension is used for activities similar to those occurring in the TAN Warm Shop.

Present and proposed future activities for the Hot Shop Extension include sampling, repackaging, and segregation of wastes. Sampling activities occurring in the Hot Shop Extension may involve a variety of materials from facilities across the INEEL. Sampling may be for purposes of characterizing low-level mixed waste streams or for determining treatment and/or storage alternatives. For mixed waste characterization operations, radionuclide concentrations will be low and will not be considered a risk to workers performing the operations. In cases where levels exceed reasonable levels or are not in concert with ALARA principles, the sample units will be transported into the Hot Shop Extension for performance of operations. In no case will ALARA or safety principles be compromised when performing activities in the Hot Shop Extension. Also for mixed waste characterization small amounts of toxic air pollutants may be released into room air and emitted to ambient air via the receiving bay door or small openings in the roof. Emission from such activities are fugitive. In any case, toxic as well as radiological emissions from Hot Shop Extension activities are small.

Repackaging activities in the Hot Shop Extension will be performed for downsizing hazardous and/or mixed waste into smaller more manageable units for volume reduction, for safety reinforcement of original packaging units, or for segregation of waste into like-waste units for storage and/or treatment.

Other activities to be performed in the Hot Shop Extension may include, but are not necessarily limited to, macro-encapsulation of contaminated metal chips, spent HEPA filter sampling and repackaging, and segregation of hazardous and mixed waste materials into like batches in preparation for shipment, storage, and/or treatment.

1.3.7 TAN-653, Waste Storage Facility

TAN-653 is used for waste sampling, storage, and repackaging.

1.3.8 TAN 726-001, Tank Vents

TAN 726-001 are vents from two 50,000-gal stainless steel tanks. Both tanks were closed under RCRA in 1996. Both vents serve either the vault and/or tanks. The worst case source term associated with these tanks would be occasional rain and snow-melt entering the tank vault, picking up very low levels of radiological contaminates. There is no reason to believe that this potential source term would represent anything but a lesser source of air emissions as it sits in the vented tank system.

Table VII-1-3 lists the not-significant radionuclide emission source descriptions for TAN. Not-significant sources meet the criteria described in IDAPA 58.01.01.317.b.i.30.

Table VII-1-3. Not-significant radionuclide air emission sources at TAN.

Source ID	Source Description
TAN-666-001	Liquid Waste Transfer and Storage
TAN-607	Storage Pool
TAN-607-053	Warm Shop Vent
TAN-607	PREPP
TAN-607-049	Hot Shop Change Room Exhaust
TAN-653	Waste Sampling and Repackaging Area
TAN-607-136	Decon Shop
TAN-607	Hot Shop Extension
TAN- 726-001	Tank Vents
Various[a]	Diffuse Soils Contamination

a. Refer to Annual NESHAP Report.

All the above sources do the following:

- Annual emission determinations
- Periodic confirmatory monitoring to determine the need for continuous emission monitoring (point sources only)
- Keeping records of emission determinations and periodic confirmatory monitoring.

The annual radiological emissions from these sources are combined with all other radionuclide emissions from the INEEL to determine compliance with the 10 mrem/yr EDE as required in 40 CFR Part 61, Subpart H. The results are published in the INEEL National Emission Standard for Hazardous Air Pollutants - Radionuclides.

2. SOURCE-SPECIFIC INFORMATION FOR SMC FACILITIES

2.1 TAN-606, Carpenter/Paint Shop

2.1.1 General Description

TAN-606 houses two functional activities that have a potential to emit air pollutants, namely the carpenter shop and maintenance paint booth. The Carpenter Shop contains woodworking equipment for facility maintenance support and construction of shipping containers. This shop uses manufactured or previously dimensioned lumber products in the course of normal woodworking operations and does not fabricate wood products for subsequent resale. This facility is operated during normal work shift hours throughout the year on an as-needed basis according to workload. Wood particulate material resulting from operation of the woodworking equipment is collected through a snorkel vacuum system and ducted to a cyclone separator prior to discharge through Stack TAN-606-005. Figure VII-2-1 shows the TAN-606 plan view.

2.1.2 TAN-606-005 Specific Information

This section contains information about the TAN-606 Carpenter Shop operated by the SMC Project at TAN. This facility provides general woodworking craft support of the SMC Project as mentioned previously. Pollutants regulated by State of Idaho Permit to Construct (PTC) regulations include PM/PM-10 for carpenter shop emissions (see table in Section 2.1.2.2). There are no HAPs from this source. Emissions from the Carpenter Shop are from Stack TAN-606-005. TAN-606 Carpenter Shop particulate emissions are regulated by State of Idaho PTC as specified in PTC 023-00001, "Specific Manufacturing Capabilities Project (SMC)," July 28, 2000. Refer to the state application forms (Figure VII-2-2) found in the following pages for specific operational information about the Carpenter Shop cyclone separator.

2.1.2.1 Process Description. Building TAN-606 contains a carpenter shop used for woodworking support of SMC facilities and operations. This operation is equipped and operated according to standards typical of the wood construction materials industry. Hardwood and softwood particulate materials result from operation of planers, routers, radial arm saws, sanders, band saws, etc. Particulate emissions from this facility arise intermittently (as necessary) during normal work shifts throughout the year. Each piece of equipment is used according to workload requirements and is not operated according to regular schedules. All carpenter shop emissions are discharged through Stack TAN-606-005 after treatment with a cyclone particulate separator. Nominal stack air flow rates are reduced to zero during periods where carpenter shop particulate-generating equipment is not operating.

Carpenter shop operations will not exceed 50 hours per week, 52 weeks per year. This value was used to estimate the annual emissions from Stack TAN-606-005. Refer to Figure VII-2-3, the TAN-606 process flow diagram, for information pertaining to active processes occurring within the TAN-606 Carpenter Shop. The exhaust fan operates at a maximum flow rate of 3,500 cfm.

Particulate Cyclone Separator—The TAN-606 Carpenter Shop is equipped with a shop-wide negative pressure snorkel duct system. This system is ducted directly to a particulate removal cyclone separator device prior to discharge through Stack TAN-606-005. The cyclone has an estimated minimum airborne particulate collection efficiency of 84%. A total hours meter is installed on the TAN-606 Carpenter Shop cyclone separator fan motor. This meter records the actual time the cyclone fan motor operates on a running total basis.

The cyclone is periodically inspected according to existing fire hazard minimization procedures. When inspection or carpenter shop operations personnel discover the need for cyclone separator system maintenance, appropriate repairs are implemented before continued operation of woodworking equipment. Emission monitoring equipment is not required for this source.

2.1.2.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from TAN-606 Carpenter Shop operations. The quantities listed for PM/PM-10 represent maximum potential emission releases based on the operating capacity of equipment located within this shop. There are no radionuclides emitted from this source.

Pollutant	CAS	Annual maximum emission	Criteria pollutant
PM/PM-10	NA	4.38 ton/yr	X

2.1.2.3 Compliance Requirements.

2.1.2.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following data includes PTC limits for which this source must maintain compliance.

Pollutant	CAS	Permit limit
PM/PM-10	NA	4.38 ton/yr
Opacity	NA	20%

2.1.2.3.2 Existing Permit Requirements—TAN-606 Carpenter Shop particulate emissions are regulated by State of Idaho PTC conditions as specified in SMC PTC.

PTC requirements for TAN-606 Carpenter Shop are now as follows:

1. Emissions from Stack TAN-606-005 shall not exceed:

   4.38 ton/yr PM/PM-10

2. Visible emissions from Stack TAN-606-005 shall not exceed:

   20% Opacity for 3 min during any 60-min period

3. Carpenter Shop operations shall not exceed 50 hours per week, 52 weeks per year.

2.1.2.3.3 Other Enforceable Requirements—There are no other enforceable requirements for this source.

2.1.2.4 Compliance Methodology and Status.

2.1.2.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application through the duration of the Tier I operating permit or until such a time as the applicable requirements may change. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does contains a more detailed schedule, this source will comply with the requirement on the schedule specified in the requirement.

2.1.2.4.2 Compliance Methodology Forms—Refer to the attached compliance certification forms (Figure VII-2-4) for information pertaining to activities performed to maintain compliance with existing applicable requirements. For visible emission requirement, see compliance methodology form in Volume I, Section 5.1.

2.1.2.5 Emission Calculations. The following sections provide a description of calculation methodologies used to show compliance with permit limits.

2.1.2.5.1 Nonradionuclide Emissions—Emission calculations for particulates from this source were provided to the state in conjunction with the SMC PTC application (referenced above). Permit limits for this source were established as maximum emissions and are included in the regulated pollutant and permitted limits in Sections 2.1.2.2, 2.1.2.3.1, and 2.1.2.3.2, respectively. The calculation methodology for particulates from this source are as follows:

Calculation:

Total particulate collected/period $\times$ [(1 $\div$ filter efficiency) – 1] = PM/PM-10 emitted/period

Where:

Cyclone particulate collection filter efficiency = 84% or 0.84.

2.1.2.5.2 Radionuclide Emissions—Not required since there are no radionuclide emissions from this emission unit.

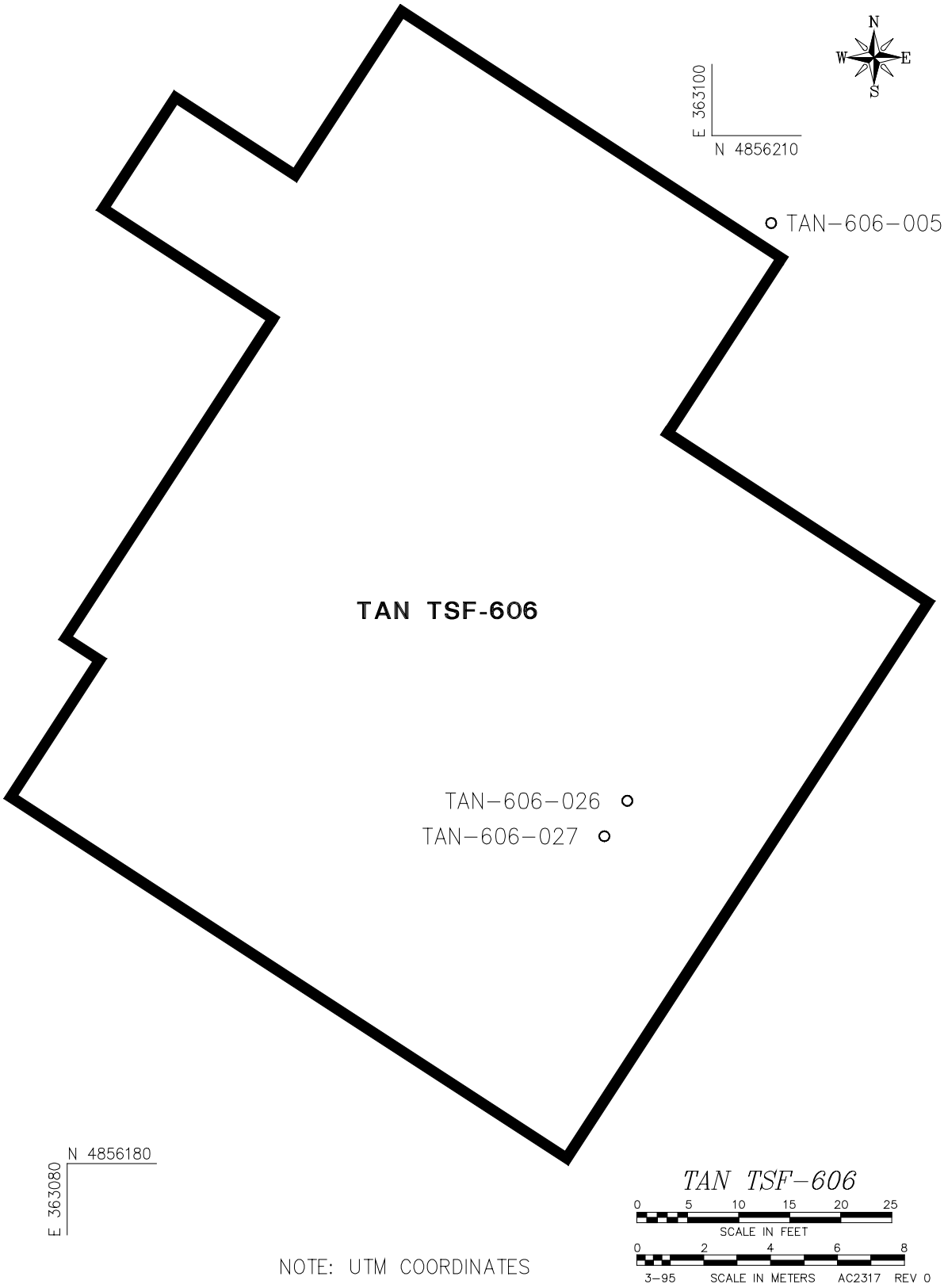

Figure VII-2-1. Plan view of TAN-606 building.

Figure VII-2-2. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	**DEQ PROCESS CODE**	**DEQ STACK ID CODE**	**DEQ BUILDING ID CODE**
PRIMARY SCC	**SECONDARY SCC**	**DEQ SEGMENT CODE**	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 606 - 005	TAN-606-005 Cyclone Dust Stack	TAN - 606	
MANUFACTURER	**MODEL**		**DATE INSTALLED OR LAST MODIFIED**
J. D. Brophy, Inc.	CYD2407		October 1992

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	Sawdust	Varies	Varies	Varies	—
PRODUCT OUTPUT	Sawdust	Varies	Varies	Varies	—
WASTE OUTPUT	Particulate	Varies	Varies	Varies	—
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-2. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
10	5	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Cyclone	NA
TYPE CODE (APPENDIX H)	075	—
MANUFACTURER	Sternvent	NA
MODEL NUMBER	CYD2407	NA
INLET TEMPERATURE (°F)	70°	—
PRESSURE DROP (INCHES H20)	—	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
13	86	45

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	363.10	4856.19	04

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (°F)
10.3	**10**	**3500**	**70**

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
PM/PM-10	NA	—	84%	NA	4.38 ton/yr	SMC PTC

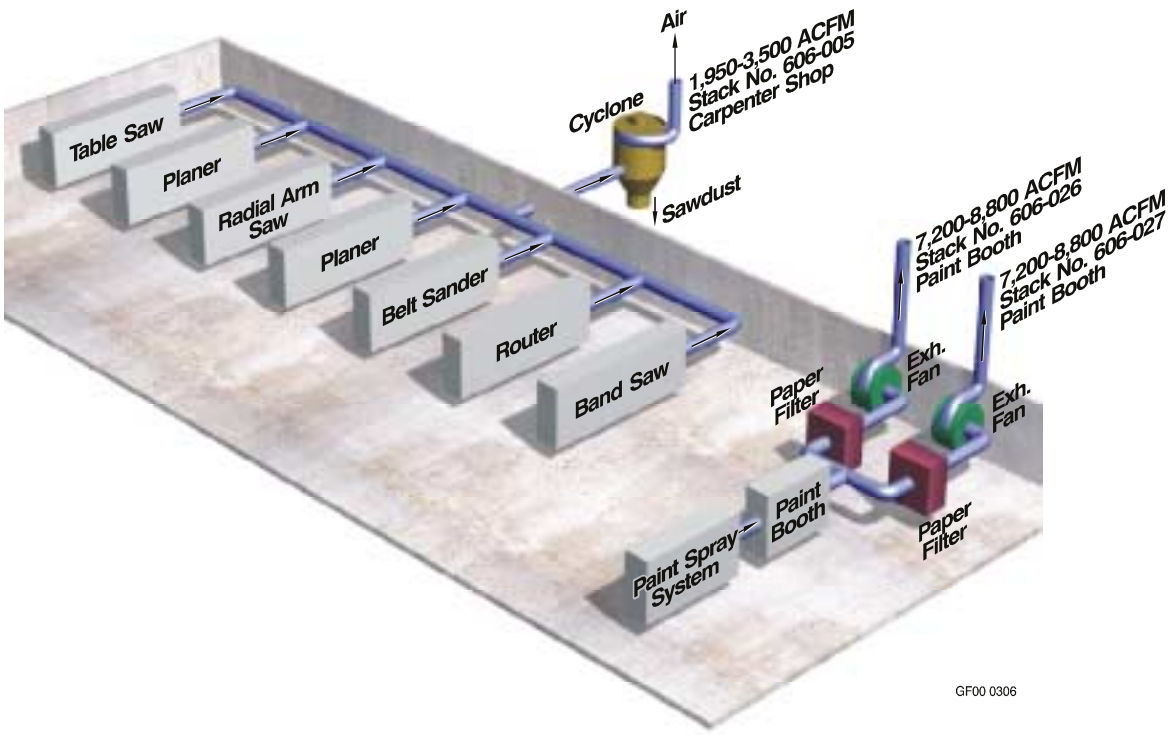

Figure VII-2-3. Process air emission flow diagram for TAN-606.

Emission Point Number TAN-606-005

REQUIREMENT 1

Requirement: Emissions from Stack TAN-606-005 shall not exceed: 4.38 tons/yr PM/PM-10.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: PM/PM-10

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Weight of collected sawdust and hours of cyclone operation.

Frequency of recordkeeping (how often data recorded): Periodic since equipment operations are periodic.

REPORTING

Generally describe what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-2-4. Compliance Certification Form (method of compliance).

Emission Point Number TAN-606-005

REQUIREMENT 2

Requirement: Carpenter shop operations shall not exceed 50 hours per week, 52 weeks per year.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: Total Operating Hour(s) Meter.

Monitor location description: NA

Regulated air pollutant being monitored: PM/PM-10

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Hours of cyclone operation

Frequency of recordkeeping (how often data recorded): Per operating event

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-4. (continued).

2.1.3 TAN-606-026, and -027 Specific Information

Painting operations are performed in building TAN-606 in support of SMC maintenance and Carpenter Shop activities. The TAN-606 Maintenance Paint Booth is a premanufactured enclosure that has been erected entirely within building TAN-606. Emissions attributable to paint booth operations are ducted through a bank of single series paper filters positioned around the bottom perimeter of the booth work area. The holders that contain these perimeter particulate filters are integral to the paint booth design and are not an add-on pollution control unit. All generated volatile organic compounds (VOCs) and that portion of PM/PM-10 that passes through the booth filters are vented to two identical stacks: Stack TAN-606-026 and Stack TAN-606-027.

Figure VII-2-1 provides a plan view of the TAN-606 building and associated emission stacks. Refer to the state operating permit application forms (Figures VII-2-5 and VII-2-6) found in the following pages for specific operational information about TAN-606 painting operations.

2.1.3.1 Process Description. Utility paint booths typically use a wide variety of commercially available paints, primers, coatings, solvents, thinners, and adhesives. The substances that may be used in the TAN-606 Maintenance Paint Booth can be categorized according to the following general surface treatment material categories: latex/water-based paints, latex/water-based primers, oil/enamel-based paints, oil/enamel-based primers, epoxies, varnishes, lacquer thinner, mineral spirits, adhesives, colorants, and paint preservatives. Approximately 50 different types of materials are currently on hand with the majority being paints and solvents; epoxies, adhesives, colorants, and preservatives are used in insignificant amounts compared to paints and solvents. The existing surface treatment material inventory may be expanded according to workload demands. See Figure VII-2-3 for the TAN-606 process flow diagram.

Because commercially acquired paint booth surface treatment material constituents frequently change during the permit term as a function of manufacturer reformulation, blending, or pigment addition, it is impossible to accurately and consistently characterize the species-specific emissions resulting from surface applications in utility paint booths. A listing of the most prevalent toxic materials contained in the current paint booth inventory are available upon request.

Toxic materials contained in the paints/solvents used in the paint booth are highly variable in concentration and are often present in only trace amounts. Paint/solvent hazardous air pollutant (HAP) species are considered not-significant within the context of IDAPA 58.01.01.317.01.b.i(30) (see Volume I.

Particulate Filters—The TAN-606 Maintenance Paint Booth utilizes a single series paper-based particulate filter to remove an estimated 87% of the total particulates produced by spray painting. Brush or roller paint applications generally do not produce airborne particulate material, so the particulate filters are considered necessary only for spray gun operations. The filter is open to observation by paint booth operations personnel and is often visually inspected for filter integrity during normal painting operations. No other emission controls are operational at this source.

No dedicated emissions monitoring equipment is located at this source.

2.1.3.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from TAN-606 Maintenance Paint Booth operations. The quantities listed for PM/PM-10 and VOC represent maximum potential emission releases based on permit limits. There are no radionuclides emitted from this source.

Pollutant	CAS	Annual maximum emission[a]	Criteria pollutant
PM/PM-10	NA	0.16 ton/yr	X
VOC	NA	6.24 ton/yr	X

a. Emissions are an aggregate of both Stacks TAN-606-026 and -027.

2.1.3.3 Compliance Requirements.

2.1.3.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following data includes PTC limits for which this source must maintain compliance.

Pollutant	CAS	Emission limit[a]
PM/PM-10	NA	0.16 ton/yr
VOC	NA	6.24 ton/yr
Opacity	NA	20%

a. Emissions are an aggregate of both Stacks TAN-606-026 and –027.

2.1.3.3.2 Existing Permit Requirements—TAN-606 Paint Booth emissions are regulated by State of Idaho PTC conditions as specified in SMC PTC.

Currently, PTC limitations for the TAN-606 Paint Booth are as follows:

1. Emissions from Stacks TAN-606-026 and TAN-606-027 (aggregate) shall not exceed:

   0.16 ton/yr PM/PM-10
   6.24 ton/yr VOC

2. Visible emissions from Stacks TAN-606-026 and TAN-606-027 shall not exceed:

   20% Opacity for 3 min during any 60-min period

3. Any contaminant toxic to human or animal life shall not be emitted in such quantities or concentrations as to injure or unreasonably affect human or animal life or vegetation as required by IDAPA 58.01.01.161.

4. The permittee shall perform a toxic emission analysis for any paint or solvent not included in the PTC permit application. If calculated toxic emission rates are greater than the screening level emission limits contained in IDAPA 58.01.01.585 or 58.01.01.586, the permittee must obtain DEQ approval prior to use.

5. The permittee shall be limited to 80 gallons of paint/solvent per week and 2,080 gallons of paint/solvent per calendar year.

6. The permittee shall maintain onsite copies of any toxic emission analysis performed. These analyses shall be made available to DEQ representatives upon request.

7. The permittee shall maintain a record of the amount of paint/solvent used per day. These records shall be maintained onsite for two years and shall be made available to DEQ representatives upon request.

2.1.3.3.3 Other Enforceable Requirements—There are no other enforceable requirements for this source.

2.1.3.4 Compliance Methodology and Status.

2.1.3.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application through the duration of the Tier I operating permit or until such time as the applicable requirements may change. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the requirement on the schedule specified in the requirement.

2.1.3.4.2 Compliance Methodology Forms—Refer to the compliance certification forms (Figure VII-2-7) for information pertaining to activities performed to maintain compliance with existing applicable requirements. See Volume I, Section 5.1 for the compliance methodology form for opacity.

2.1.3.5 Emission Calculations. The following section provides a description of calculation methodologies used to show compliance with permit limits.

2.1.3.5.1 Nonradionuclide Emission Calculations—Emission calculations for particulates and VOCs from this source were provided to the state in conjunction with the SMC PTC application (referenced above). Permit limits for this source were established as maximum emissions and are included in the regulated pollutant, and permitted limits in Sections 2.1.3.2, 2.1.3.3.1, and 2.1.3.3.2, respectively. The calculation methodology for particulate permit limits and VOC from this source is as follows:

Paint/solvent materials that may be used in the future are assumed to possess a composition similar to that described in this section. Density information from 45 material safety data sheets provides an average weight density of 9.38 lb/gal for those paints/solvents used in the TAN-606 Paint Booth. All volatile chemicals and 15% of particulate materials are assumed lost during spray operations. In addition, the maximum anticipated operational use of the paint booth is 1,040 hours/yr with an average paint/solvent application rate of 2 gal/hr and 4 gal/day. The particulate collection efficiency of the paint booth filter is conservatively estimated to be 87%. Each exhaust fan operates at a flow rate of 7,200 to 8,800 cfm.

PM/PM-10 Emissions Calculational Methodology:

Calculation:

Gallons of paint used per period × material loss × density × percent solids × filter breakthrough = lb PM/PM-10 per period.

Where:

Material loss	=	15%
Density	=	9.38 lb/gal
Percent solids	=	81%
Filter breakthrough	=	13%

VOC Emissions Calculational Methodology:

Calculation:

Gallons of paint used × density × weight % of VOCs = lb VOC per period.

Where:

Density	= 9.38 lb/gal
Weight % VOCs	= 64%

2.1.3.5.2 Radionuclide Emission Calculations—Not required since there are no radionuclide emissions from this emission unit.

Figure VII-2-5. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A

GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 606 - 026	Paint Spray Booth Stack	TAN - 606	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
Viking	—		July 1993

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	(See Process Description)	2 gal/hr	—	—	—
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-5. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Paper Filter	NA
TYPE CODE (APPENDIX H)	NA	—
MANUFACTURER	Viking	—
MODEL NUMBER	—	—
INLET TEMPERATURE (ºF)	70°	—
PRESSURE DROP (INCHES H20)	—	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
Y	05	7200	87

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
13	86	45

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	363.10	4856.21	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
20.2	33	8800	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
PM/PM-10	NA	NA	87%	NA	0.16 ton/yr[a]	SMC PTC
VOC	NA	NA	0%	NA	6.24 ton/yr[a]	SMC PTC

a. Allowable emissions are an aggregate of both stacks 606-026, -027.

Figure VII-2-6. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 606 - 027	Paint Spray Booth Stack	TAN - 606	
MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED	
Viking	—	July 1993	

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	(See Process Description)	2 gal/hr	—	—	gal
PRODUCT OUTPUT	—	—	—	—	—
WASTE OUTPUT	—	—	—	—	—
RECYCLE	—	—	—	—	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-6. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Paper Filter	NA
TYPE CODE (APPENDIX H)	NA	—
MANUFACTURER	Viking	—
MODEL NUMBER	—	—
INLET TEMPERATURE (ºF)	70°	—
PRESSURE DROP (INCHES H20)	—	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
Y	05	7200	87

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
13	86	45

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	363.10	4856.20	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
20.2	33	7200-8800	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
PM/PM-10	NA	NA	87%	—	0.16 ton/yr[a]	SMC PTC
VOC	NA	NA	0%	—	6.24 ton/yr[a]	SMC PTC

a. Allowable emissions are an aggregate of both Stacks 606-026 and -027.

Emission Point Number TAN-606-026 and -027

REQUIREMENT 1

Requirement: Emissions from Stacks TAN-606-026 and -027 shall not exceed 0.16 ton/yr PM/PM-10.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: PM/PM-10

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Gallons of paint. Calculated emissions.

Frequency of recordkeeping (how often data recorded): Daily/per event for gallons of paint, annually for calculated emissions.

REPORTING

Generally describe what is reported: Estimatd Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-7. Compliance Certification Form (method of compliance).

Emission Point Number TAN-606-026 and -027

REQUIREMENT 2

Requirement: The permittee shall be limited to 80 gallons of paint/solvent per week and 2,080 gallons of paint/solvent per calendar year.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: VOC, PM/PM-10, TAPs

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amount of paint/solvent used.

Frequency of recordkeeping (how often data recorded): Daily/per event, annually for total gallons used

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-7. (continued).

Emission Point Number TAN-606-026 and -027

REQUIREMENT 3

Requirement: Emissions from Stacks TAN-606-026 and -027 shall not exceed 6.24 ton/yr VOC.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: VOCs

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Gallons of paint and type of paint used. Calculated emissions.

Frequency of recordkeeping (how often data recorded): Daily/per event for gallons of paint and annually for calculated emissions.

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-7. (continued).

Emission Point Number TAN-606-026 and -027

REQUIREMENT 4

Requirement: Maintain a record of the amount of paint/solvent used per day. Maintain records on site for two years.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amount of paint/solvent usage per day.

Frequency of recordkeeping (how often data recorded): Per usage.

REPORTING

Generally describe what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-2-7. (continued).

Emission Point Number TAN-606-026 and -027

REQUIREMENT 5

Requirement: Permittee shall maintain on-site copies of any toxic emission analyses performed.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: TAPs

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Maintain copies of toxic emission analyses.

Frequency of recordkeeping (how often data recorded): Per analysis.

REPORTING

Generally describe what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-2-7. (continued).

Emission Point Number TAN-606-026 and -027

REQUIREMENT 6

Requirement: Any contaminant toxic to human or animal life shall not be emitted in such quantities or concentrations as to injure or unreasonably affect human or animal lif or vegetation as required by IDAPA 58.01.01.161. The permittee shall perform a toxic emission analysis for any paint or solvent not included in the PSD PTC application. If calculated emission rates are greater than the screening level emission limits contained in 58.01.01.585 or 58.01.01.586 the permit must obtain Department approval prior to use.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: TAPs

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Gallons of paint and type of paint used. Calculated emissions. Results of any toxic emission analyses performed.

Frequency of recordkeeping (how often data recorded): Daily/per event for gallons of paint and annually for calculated emissions. As performed for toxic analyses.

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-7. (continued).

2.2 TAN-629, Fabrication and Assembly Production Facility

2.2.1 General Description

SMC Project Fabrication and Assembly operations generally refer to areas and activities that occur within or adjacent to building TAN-629. Adjacent to building TAN-629 (and therefore associated directly with fabrication and assembly operations) are buildings TAN-677 and TAN-675. These buildings are used for maintenance, storage, offices, and multi-functional building support services. Operations that are conducted in the accessory buildings, as well as all fabrication and assembly and maintenance welding operations that have a potential to emit air pollutants, are described in this volume.

Building TAN-629 (Figure VII-2-8) houses the final fabrication and assembly manufacturing operations for SMC production. Some of the emissions resulting from production line operations are regulated by existing PTC conditions, while other production line operations are not as they emit little or no fugitive particulate emissions. Relatively small amounts of gas metal arc welding are necessary in final production activities. No regulatory limits have been established as such for this operation. The regulated emissions are fabrication and painting operations associated with depleted uranium (DU) and fabrication of organic composite materials.

2.2.2 TAN-629-013 Specific Information

This section contains information about the TAN-629, fabrication and assembly, production Line 2 that is divided into two (2) areas. Production operations in Line 2 include metal shearing, punching, and cutting of DU parts prior to entry into Line 2B for coating. In addition, Line 2 is used for material development. Operations include laser cutting of stainless steel, carbon steels, and depleted uranium. Pollutants of concern emanating from this source are PM/PM-10, VOC, and radionuclides. The entire Line 2 process is enclosed in a dedicated negative-pressure containment structure to control the potential spread of depleted uranium particulates.

In addition to providing the plot plan for TAN-629-013 Figure VII-2-8 identifies the associated emission stacks. Refer to the state operating permit application forms (Figure VII-2-9) for specific operational information about equipment used to vent emissions from Line 2 operations.

2.2.2.1 Process Description. DU is brought from rolling operations (in TAN-679) into Line 2 for fabrication. Semi-automated manufacturing systems on Line 2 are then used to punch, shear, and laser cut DU from the rolling operation into a desired physical configuration. After fabrication of the desired configuration, parts are inspected and forwarded to the Line 2B paint process for surface coating and preservation. All Line 2 process equipment and the TAN-629 Line 2 containment enclosure vent to a common dedicated duct for particulate removal by certified HEPA filtration and eventual discharge through Stack TAN-629-013. Refer to Figure VII-2-10 for a process flow diagram for this source.

Because Line 2A operations involve DU metal working, all production line emissions are vented through certified HEPA filters prior to discharge to the environment in order to minimize radionuclide particulate emissions. Line 2 emissions vent through Stack TAN-629-013 which is subject to various permit emission limitations. Radionuclide, PM-10, and VOC pollutants are regulated through PTC 023-00001, “Specific Manufacturing Capabilities Project (SMC),” July 28, 2000.

HEPA Filtration—HEPA filtration is considered to be an industry-wide best available control technology for the removal of airborne particulate material regardless of aerodynamic size. In order to minimize potential radionuclide emissions from facility stacks, the SMC Line 2 process utilizes a HEPA filtration system which consists of prefilters and a particulate collection efficiency-certified HEPA filter

connected in series to provide positive control of radionuclide particulate emissions from Line 2 operations. Line 2 also contains an additional set of inline filters. These equipment related filters serve to clean Line 2 exhaust air prior to the certified HEPA filtration system. The equipment related filters are an internal operational control and not currently subject to permit controls.

The TAN-629 building HEPA filtration system for Stack TAN-629-013 treats Line 2 exhaust air by ducting flow through two HEPA filter banks consisting of 16 prefilters and 16 certified HEPA filters per bank. The maximum volumetric flow rate through each filter bank is 16,000 cfm. The certified HEPA filtration system for Line 2 operations is the primary piece of equipment that ensures abatement of Line 2 particulate emissions from SMC Stack TAN-629-013. Air entering the filtration unit first passes through the prefilters where approximately 30% of the particulates are removed. Following the prefilters the air passes through banks of certified HEPA filters that remove 99.97% of particles with a diameter of 0.3 microns.

The operational flow rate for the Stack TAN-629-013 HEPA filtration system is 28,000-32,000 cfm (for two filter banks). The point of compliance determination for Line 2 emissions is the Stack TAN-629-013 HEPA filtration.

Annual Collection Efficiency Testing—In-place particulate collection efficiency testing is performed at least once every 12 months and within 90 days of filter replacement on the Stack TAN-629-013 certified HEPA filters. This testing ensures that HEPA filtration efficiency is maintained at or above 99.97%. If a testable HEPA filter falls below a 99.97% particulate removal efficiency, replacement of the filter occurs within 10 days.

Daily Pressure Drop Monitoring—SMC personnel read and record daily the pressure drop across the certified HEPA filter bank using installed pressure monitoring devices and the air flow readings of the associated HVAC fans. This monitoring is intended to detect breaches or loading of the HEPA filter that might adversely affect particulate collection performance. The certified HEPA filters operate within a specified range. If the pressure drop across the certified HEPA filter is outside of the specified range, the filter is replaced within 10 days.

The installed HEPA filter differential pressure instrumentation and exit flow velocity indicators are calibrated annually. Equipment causing abnormal calibration readings is repaired as soon as practicable.

Periodic Radiation Monitors—A continuous radionuclide emission monitor operates at Stack TAN-629-013 as an SMC best operating practice. Such a monitor, which is not required by any currently applicable regulation, standard, or permit conditions, would be operated nonisokinetically in general (but not necessarily strict) adherence with requirements such as those identified in 40 CFR 61.93 and ANSI N13.1. Because current monitoring is not isokinetic it cannot be used to demonstrate continuous compliance. Data collected by these monitors will be used comparatively with previously recorded stack emissions to detect general trends or periodic deviations in actual radionuclide emissions.

2.2.2.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from Stack TAN-629-013 that result from fabrication operations on Line 2. Radionuclide and nonradionuclide emissions from Line 2 are permitted by State of Idaho SMC PTC. The quantity listed for radionuclides represents all radionuclide sources emitting from the TAN-629 Fabrication and Assembly production facility.

Pollutant	CAS	Annual maximum emission	Criteria pollutants
Radionuclides	NA	10 mrem/yr[a]	—
Radionuclides	NA	0.1 mrem/yr[b]	—
PM/PM-10	NA	0.0063 ton/yr	X
VOC	NA	0.006 ton/yr	X

a. This is an aggregate limit for all radionuclide emission at the INEEL.
b. This is a combined limit for sources 629-013, 679-022, -023, and –024

2.2.2.3 Compliance Requirements.

2.2.2.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTCs as specified in SMC PTC. The following data includes PTC limits for which this source must maintain compliance.

Pollutant	CAS	Emission limit
Radionuclides	NA	0.1 mrem/yr[a]
Radionuclides	NA	10 mrem/yr[b]
PM/PM-10	NA	0.0063 ton/yr
VOC	NA	0.006 ton/yr

a. This is a combined limit for sources 629-013, 679-022, -023, -024
b. This is an aggregate limit for all radionuclides at the INEEL.

2.2.2.3.2 Existing Permit Requirements—SMC TAN-629 Line 2 emissions are regulated by State of Idaho PTC conditions specified in SMC PTC. This permit also contains the following permit requirements:

Currently, PTC limitations for Stack TAN-629-013 (Line 2) are as follows:

1. Emissions from Stack TAN-629-013 shall not exceed:

- 0.1 mrem/yr radionuclides (for Stacks TAN-629-013 and 679-022, -023, and -024 emission sources)
- 0.0063 ton/yr PM/PM-10
- 0.006 ton/yr VOC

2. This source shall be operated within the requirements of the EPA NESHAP emissions from Department of Energy facilities (40 CFR 61.90). Radionuclide emissions from Stack TAN-629-013 shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater than 10 mrem/yr EDE.

3. The permittee shall operate, monitor, and submit a report on the operation of the Stack TAN-629-013 HEPA filters (identified as F-AE-601 and F-AE-602) as specified below:

   a. The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter, the first within 90 days of startup and at least every 12 months thereafter. Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test." In addition, an in-place ASME N510 efficiency test shall be conducted within 90 days of the date that the certified HEPA filter is replaced or installed.

   b. A pressure monitoring device shall be maintained to enable monitoring of pressure drop across each bank of certified HEPA filters. The pressure drop monitoring equipment shall be maintained in good working order. Pressure drop shall be checked daily when the HEPA filter is in use.

   c. Certified HEPA filter efficiency shall be maintained at or above 99% (not 99.97%) removal efficiency as determined by the guidelines of ASME N510, Section 10.

   d. Certified HEPA filter elements shall be replaced within 10 days if the removal efficiency falls below 99% as determined by ASME N510, Section 10.

   e. Each certified HEPA filter shall be operated at pressure drop that is limited to less than 5.0 inches water column.

   f. If the pressure drop across the certified HEPA filter exceeds 5.0 inches water column, the filter shall be replaced within 10 days of the exceedance.

   g. Within 90 days of issuance, the permittee shall submit to DEQ an operating and maintenance manual which describes the procedures which will be followed to ensure compliance with the above permit conditions.

   h. Within 90 days of issuance, the permittee shall submit to the Department a quality assurance program, based on ASME N510 guidelines, which defines methods and procedures that will be used to ensure that quality and representative data is collected while performing in-place HEPA filter tests and while measuring pressure drops across HEPA filters.

   i. The results of the initial performance test of the HEPA filter shall be reported to the Department within 30 days of performing the test.

   j. The permittee shall submit to DEQ a quarterly report based on a quarter calendar year and due 30 days after the end of each quarter, stating that all the requirements of Appendix B of the SMC PTC have been met.

k. In addition, records of the following information shall be kept on site and shall be made available for DEQ upon request:

- The dates and results of all efficiency tests using the ASME N510 HEPA filter in place test method
- The dates of replacement of HEPA filter elements
- Daily pressure drop measurements across the certified HEPA filter.

2.2.2.3.3 Other Enforceable Requirements—Because select SMC Line 2 fabrication operations are potential emitters of radionuclides, EPA Region X approved a request to construct and operate this source under the National Emissions Standards for Hazardous Air Pollutants, on October 22, 1990. This approval allowed the SMC Project to operate Line 2 manufacturing in accordance with 40 CFR 61.07. Periodic confirmatory measurements must be conducted in accordance with 40 CFR Part 61.93 (b) to determine radionuclide emissions used to demonstrate compliance with emissions limit. All emissions from this source must be included in the facility-wide INEEL annual NESHAPS report (40 CFR Part 61.94) and records supporting the emissions measurements must be kept as stated in 40 CFR Part 61.95. See compliance methodology form in Volume I, Section 5.5.1.2.2.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.2.2.4 Compliance Methodology and Status.

2.2.2.4.1 Compliance Plan—This source is currently in compliance with, and will continue to comply with, all indicated applicable requirements as described in this application through the duration of the Tier I operating permit or until such a time as the applicable requirements may change. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the requirement on the schedule specified in the requirement.

2.2.2.4.2 Compliance Methodology Forms—SMC complies with the emission limit requirements from HEPA filters by operating their facilities according to the methods and procedures outlined in the listed permit regarding HEPA filter efficiency testing, daily pressure checking and logging, and reporting results of these activities. Compliance certification forms, as requested by the State of Idaho for demonstrating compliance with the above listed requirements, are included in Figure VII-2-11. The compliance methodology form for the NESHAP INEEL 10 mrem aggregate limit is in Volume I, Section 5.5.1.2.2.

2.2.2.5 Emission Calculations. The following section provides a description of calculation methodologies used to determine emissions found in the annual NESHAP report.

2.2.2.5.1 Nonradionuclide Emissions—Sources emitting nonradionuclide pollutants were transferred from PTC 023-00001, "TAN-607A R&D and Manufacturing Facility," and are included in permit PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC). Calculation methodologies for these materials are demonstrated below.

VOC Emissions Calculation Methodology:

VOC emissions from this source are calculated on a level-of-effort basis. They are determined by the amount of material processed annually during operations.

Assumptions:

Percentage of material released from operation into air.
100%/period of fume becomes VOC emission.

Calculation:

Material throughput/period × % of VOCs released/operation = total VOC emitted/period

PM/PM-10 Emissions Calculation Methodology:

PM/PM-10 emissions from this source are calculated on a level-of-effort basis. The following methodology is used to calculate PM/PM-10 emissions.

Determine amount of material processed during previous year operations.

Assumptions:

Percentage of material released from operation = particulate emission.
All particulates are emitted into air filtration system.
Percentage of particulate emissions escape HEPA filtration.

Calculation:

Particulate % of material × total material processed/period x mitigation factor = total PM/PM-10 emitted/period

Where:

Mitigation factor = (1-0.9997)

2.2.2.6 Radionuclide Emissions. Radionuclide emissions from this source are calculated on a level-of-effort basis identified as Method II: Possession Quantity Techniques found in Appendix E of Volume I.

Mitigation factor = (1- 0.9997)

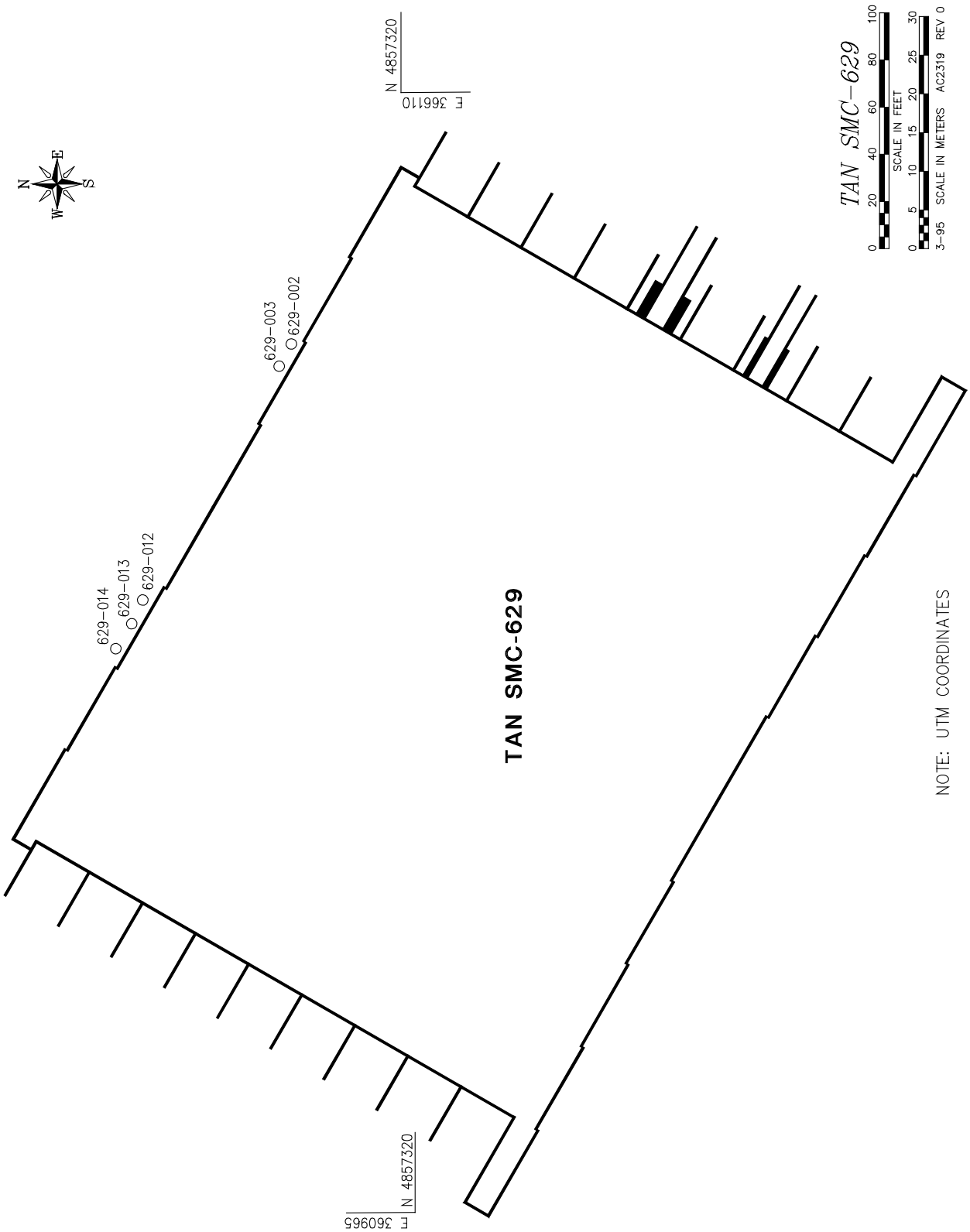

Figure VII-2-8. Plot plan for TAN-629 Fabrication and Assembly Building.

Figure VII-2-9. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 629 - 013	Line 2A Ventilation System	TAN - 629	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	NA		1985-1986

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	DU billets	Varies	Varies	Varies	—
PRODUCT OUTPUT	DU parts	Varies	Varies	Varies	—
WASTE OUTPUT	Du particulates	Varies	Varies	Varies	—
RECYCLE		—	—	—	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
—	—	—	—	—	—

Figure VII-2-9. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	NA
MANUFACTURER	Flanders or equivalent	NA
MODEL NUMBER	None	NA
INLET TEMPERATURE (ºF)	70	NA
PRESSURE DROP (INCHES H20)	5.0 max.	NA
WET SCRUBBER FLOW (GPM)	NA	NA
BAGHOUSE AIR/CLOTH RATIO (FPM)	NA	NA

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
102	330	225

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	361.04	4857.36	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
46	48	32,000	70

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide	—	—	99.97	—	0.1 mrem/yr[a]	SMC PTC
Radionuclide	—	—	99.97	—	10 mrem/yr[b]	SMC PTC

a. A combined limit for sources 629-013, 679-022, -023, and –024.

b. In aggregate with all other INEEL sources.

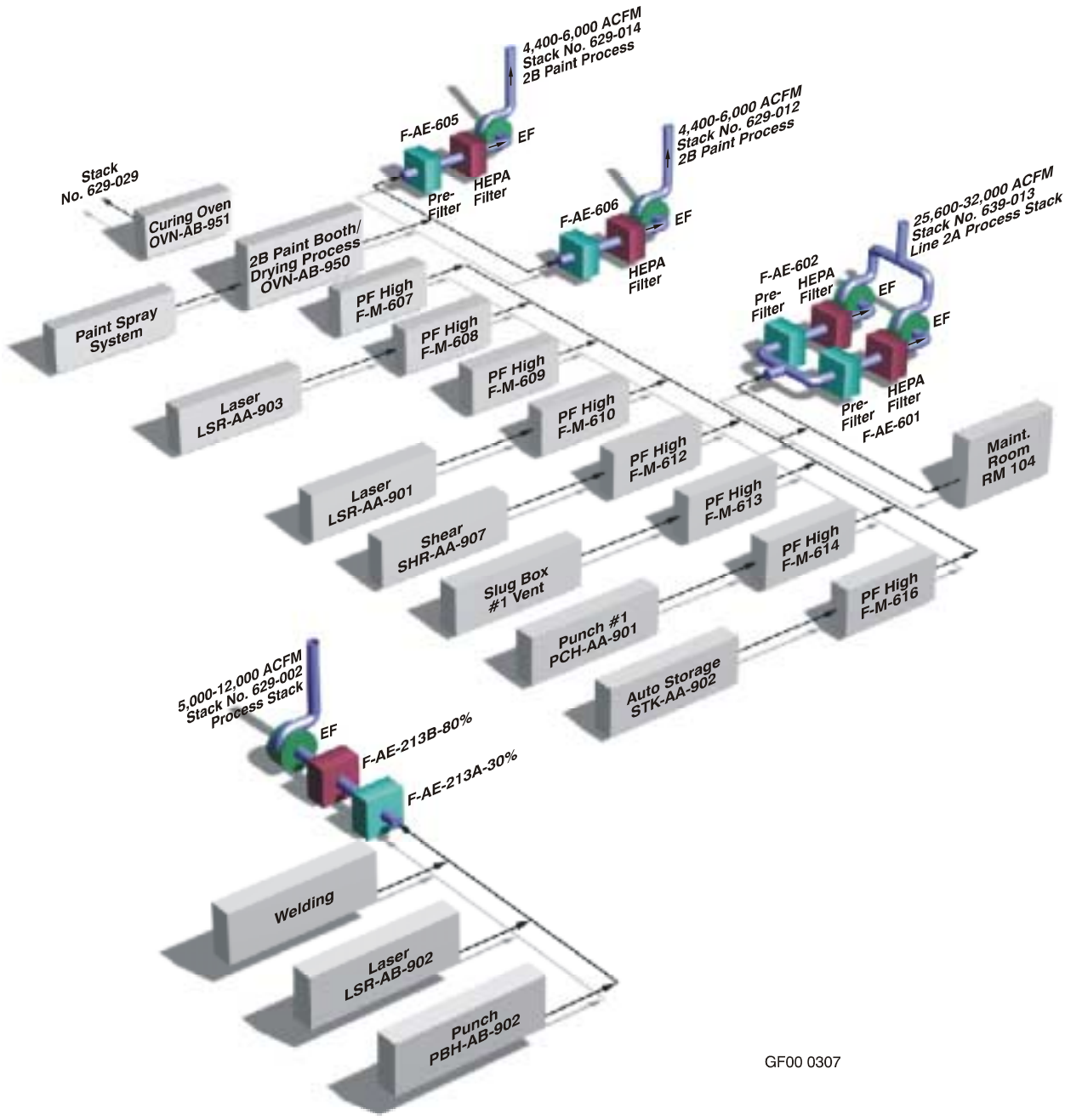

Figure VII-2-10. Process flow diagram for TAN-629.

Emission Point Number TAN-629-013

REQUIREMENT 1

Requirement: Install, operate, and/or maintain HEPA filtration units at an operational efficiency of no less than 99% in filtration of particulates.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Monitoring and Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: HEPA filter efficiency testing is done upon installation of a new unit, and at least annually thereafter, according to the standard test methods set forth in ASME N510, Sections 4 & 5. Certified HEPA filters are tested and shown to have removal efficiencies of no less than 99%. Those filters demonstrating efficiencies less than this are replaced within 10 days (as specified by permit requirements) or prior to restart of a nonoperating process. All newly installed filters are pretested and certified prior to installation. Procedures are maintained which specify the conditions requiring changeout of the HEPA filters.

Reference test method citation: ASME N510, Sections 4 and 5.

MONITORING

Monitoring device type: Pressure differential gauge or sensor.

Monitor location description: At filter stages.

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: All HEPA filters shall be monitored for pressure drop to ensure operation and maintenance of certified HEPA filter stages at a maximum pressure drop of 5.0 inches water column. All certified HEPA filter stages shown to have a pressure drop of greater than 5.0 inches water column are replaced within 10 working days or prior to restart of a nonoperating process.

RECORDKEEPING

Data (parameter) being recorded: The dates and results of all efficiency tests using the ASME N510 test method, the dates of replacement of HEPA filter elements, and daily pressure drop measurements across the certified HEPA filter.

Frequency of recordkeeping (how often data recorded): Daily or as required to maintain efficiency of HEPA filters.

REPORTING

Generally describe what is reported: Provide statement to DEQ that all requirements of Appendix B of SMC PTC permit have been met.

Frequency of reporting: Quarterly.

Beginning date: TBD

Figure VII-2-11. Compliance Certification Form (method of compliance).

Emission Point Number TAN-629-013

REQUIREMENT 2

Requirement: Emissions from Stack TAN-629-013 shall not exceed 0.1 mrem/yr combined with Stacks TAN-679-022, -023, and –024.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Units processed. Calculated emissions.

Frequency of recordkeeping (how often data recorded): Annually.

REPORTING

Generally describe what is reported: Effective dose equivalent to the INEEL maximally exposd individual from all INEEL radiological emission sources.

Frequency of reporting: NA

Beginning date: June 30, 1990

Figure VII-2-11. (continued).

Emission Point Number TAN-629-013

REQUIREMENT 3

Requirement: Emissions from Stack TAN-629-013 shall not exceed 0.0063 ton/yr PM/PM-10.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: PM/PM-10

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Material throughput.

Frequency of recordkeeping (how often data is recorded): As needed to record total amount of yearly throughput and calculate emissions.

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-11. (continued).

Emission Point Number TAN-629-013

REQUIREMENT 4

Requirement: Emissions from Stack TAN-629-013 shall not exceed 0.006 ton/yr VOC.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: VOCs

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amount of laser cutting operation during year.

Frequency of recordkeeping (how often data is recorded): As needed to record total amount of equipment usage and calculate annual emissions.

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-11. (continued).

2.2.3 TAN-629-012 and -014 Specific Information

This section contains information about the TAN-629, Fabrication and Assembly, Production Line 2B consisting of coating and protection operations. Painting operations in Line 2B are performed on DU parts fabricated in Line 2A. The purpose of painting is to protect the parts from corrosion through oxidation. The 2B paint process consists of an automated pressurized air paint spray system and a drying and curing oven. Airborne pollutants generated during the painting/drying operation are vented through Stacks TAN-629-012 and -014.

Figure VII-2-8 provides a plot plan of the TAN-629 building and associated emission stacks. Refer to the state application forms (Figures VII-2-12 and VII-2-13) for specific operational information about this source.

2.2.3.1 Process Description. The 2B paint process consists of an automated pressurized air paint spray system that applies a latex-based primer coating to depleted uranium parts within a paint spray booth. The coated parts are oven dried for no less than 10 minutes at temperatures which range from 150 to 210°F. After drying, the parts are placed in a ~100°F curing oven for several hours prior to storage. The curing oven is exhausted directly to atmosphere through Stack TAN-629-029 but is not considered a source of air emissions. The paint booth and drying oven are ventilated to remove volatile organic compounds, total suspended particulates, and particulate matter smaller than 10 microns (PM-10). See Figure VII-2-10 for the process flow diagram.

The 2B paint process uses a single type of latex primer (Rustoleum Acrylic Latex 5269), applied at a maximum rate of 3.2 gallons/hr. However, other brands of latex primers may also be introduced for use in the paint booth in the future. Because 2B painting operations may change during the permit term and/or primer composition may be reformulated by the manufacturer, the 2B Paint Booth is anticipated to use only water-based primer coatings during normal service.

Because Line 2B operations involve DU material, all emissions are vented through certified HEPA filters prior to discharge to the environment in order to minimize radionuclide particulate emissions. Line 2B emissions vent through Stacks TAN-629-012 and TAN-629-014 which are subject to various permit emission limitations. Radionuclide, PM-10, and VOC pollutants are regulated through PTC 023-00001, "Specific Manufacturing Capabilities (SMC) project," July 28, 2000 (SMC PTC).

HEPA Filtration—HEPA filtration is considered to be an industry-wide best available control technology for the removal of airborne particulate material regardless of aerodynamic size. In order to minimize potential radionuclide emissions from facility stacks, the Line 2B paint process utilizes a HEPA filtration system which consists of prefilters and a particulate collection efficiency-certified HEPA filter connected in series to provide positive control of radionuclide particulate emissions from Line 2B operations. Line 2B also contains an additional set of inline filters. These equipment related filters serve to clean Line 2B exhaust air prior to the certified HEPA filtration systems. The equipment related filters are an internal operational control and not currently subject to permit controls.

The TAN-629 building HEPA filtration system for Stacks TAN-629-012 and TAN-629-014 treats Line 2B exhaust air by ducting flow through two HEPA filter banks consisting of 6 prefilters and 6 certified HEPA filters per bank. The maximum volumetric flow rate through each filter bank is 6,000 cfm. The certified HEPA filtration system for Line 2B operations is the primary piece of equipment that ensures abatement of Line 2B particulate emissions from SMC Stacks TAN-629-012 and TAN-629-014. Air entering the filtration unit first passes through the prefilters where approximately 30% of the particulates are removed. Following the prefilters, the air passes through banks of certified HEPA filters that remove 99.97% of particles with a diameter of 0.3 microns.

The operational flow rate for the Stacks' (TAN-629-012 and TAN-629-014) HEPA filtration system is 4,600-6,000 cfm per stack. The point for compliance determination for Line 2B emissions is the Stacks' TAN-629-012 and TAN-629-014 HEPA filtration.

Annual Collection Efficiency Testing—In-place particulate collection efficiency testing is performed at least once every 12 months and within 90 days of filter replacement on the Stacks' (TAN-629-012 and TAN-629-014) certified HEPA filters. This testing ensures that HEPA filtration efficiency is maintained at or above 99.97%. If a testable HEPA filter falls below a 99.97% particulate removal efficiency, replacement of the filter occurs within 10 days.

Daily Pressure Drop Monitoring—SMC personnel daily read and record the pressure drop across the certified HEPA filter bank using installed pressure monitoring devices and the CFM air flow readings of the associated HVAC fans. This monitoring is intended to detect breaches or loading of the HEPA filter that might adversely affect particulate collection performance. The certified HEPA filters operate within a specified range. If the pressure drop across the certified HEPA filter is outside the specified range, the filter is replaced within ten days.

The installed HEPA filter differential pressure instrumentation and exit flow velocity indicators are calibrated annually. Equipment causing abnormal calibration readings is repaired as soon as practicable.

Periodic Radiation Monitors—A continuous radionuclide emission monitor operates at Stacks TAN-629-012 and TAN-629-014 as an SMC best operating practice. Such a monitor, which is not required by any currently applicable regulation, standard, or permit condition, would be operated nonisokinetically in general adherence with requirements such as those identified in 40 CFR 61.93 and ANSI N13.1. Because current monitoring is not isokinetic it cannot be used to demonstrate continuous compliance. Data collected by these monitors will be used comparatively with previously recorded stack emissions to detect general trends or periodic deviations in actual radionuclide emissions.

2.2.3.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from Stacks TAN-629-012 and TAN-629-014 which comprise painting operations from Line 2B. The quantities listed for PM/PM-10, VOC, and radionuclides represent maximum permitted release limits based on the operating capacity of equipment located within this paint booth. Radionuclide and nonradionuclide emissions from Line 2B are permitted by State of Idaho SMC PTC. The quantity listed for radionuclides represents a bubbled cap emission limit for all radionuclide sources emitting from the TAN-629 Fabrication and Assembly production facility.

Pollutant	CAS	Annual maximum emission	Criteria
PM/PM-10	NA	0.5 ton/yr	X
VOC	NA	4.1 ton/yr	X
Radionuclides	NA	10 mrem/yr[a]	—

a. This represents an aggregate limit for all INEEL sources.

2.2.3.3 Compliance Requirements.

2.2.3.3.1 Permitted Emission Limits—The source operates under comprehensive emission limitations and operational requirements identified in State of Idaho SMC PTC and EPA NESHAP requirements for Department of Energy Facilities (40 CFR 61 Subpart H). Estimated radionuclide emissions from TAN-629 have been reviewed by both the State of Idaho and the EPA. Measurement and monitoring of emissions are maintained in accordance with existing SMC PTC and NESHAP requirements as described in Section 5.5.1.2.4 of Volume I. Compliance with SMC PTC conditions and requirements will be demonstrated according to Section 2.2.3.4 below.

The following data includes SMC PTC limits for which this source must maintain compliance.

Pollutant	CAS	Emission limit
PM/ PM-10	NA	0.5 ton/yr
VOC	NA	4.1 ton/yr
Radionuclides	NA	10 mrem/yr[a]

a. This represents an aggregate limit for the INEEL.

2.2.3.3.2 Existing Permit Requirements—SMC TAN-629 Line 2B Paint Booth emissions are regulated by State of Idaho PTC conditions specified in SMC PTC.

PTC Conditions Applicable to Line 2B Paint Process

1. Emissions from the 2B paint process (aggregate of Stacks TAN-629-012 and TAN-629-014) shall not exceed:

   0.5 ton/yr PM/PM-10
   4.1 ton/yr VOC
   10 mrem/yr radionuclides (aggregate of all INEEL sources)

2. This source shall operate within the requirements of the EPA National Emission Standards for radionuclide emissions from Department of Energy Facilities (40 CFR 61.90). Radionuclides emissions from Stacks TAN-629-012 and TAN-629–014 shall not, by themselves or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater than 10 mrem/yr EDE.

3. The permittee shall operate, monitor, and submit a report on the operation of the Stacks' (TAN-629-012 and TAN-629-014) HEPA filters (identified as 629-F-AE-606 and 629-F-AE-605, respectively) as specified below:

   a. The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter, the first within 90 days of startup and at least every 12 months thereafter. Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test." In addition, an in-place ASME N510 efficiency test shall be conducted within 90 days of the date that the certified HEPA filter is replaced or installed.

b. A pressure monitoring device shall be maintained to enable monitoring of pressure drop across each bank of certified HEPA filters. The pressure drop monitoring equipment shall be maintained in good working order. Pressure drop shall be checked daily when the HEPA filter is in use.

c. Certified HEPA filter efficiency shall be maintained at or above 99.97% removal efficiency as determined by the guidelines of ASME N510, Section 10.

d. Certified HEPA filter elements shall be replaced within 10 days if the removal efficiency falls below 99% as determined by ASME N510, Section 10.

e. Each certified HEPA filter shall be operated at a pressure drop that is limited to less than 5.0 inches water column.

f. If the pressure drop across the certified HEPA filter exceeds 5.0 inches water column, the filter shall be replaced within 10 days of the exceedance.

g. Within 90 days of issuance the permittee shall submit to DEQ an operating and maintenance manual which describes the procedures which will be followed to ensure compliance with the above permit conditions.

h. Within 90 days of issuance, the permittee shall submit to DEQ a quality assurance program, based on ASME N510 guidelines, which defines methods and procedures that will be used to ensure that quality and representative data is collected while performing in-place HEPA filter tests and while measuring pressure drops across HEPA filters.

i. The results of the initial performance test of the HEPA filter shall be reported to DEQ within 30 days of performing the test.

j. The permittee shall submit to DEQ in a quarterly report based on a quarter calendar year and due 30 days after the end of each quarter, stating that all the requirements of Appendix A of the SMC PTC have been met.

In addition, records of the following information shall be kept on site and shall be made available for DEQ upon request:

- The dates and results of all efficiency tests using the ASME N510 HEPA filter in place test method

- The dates of replacement of HEPA filter elements

- Daily pressure drop measurements across the certified HEPA filter.

2.2.3.3.3 Other Enforceable Requirements—Because select SMC Line 2B Painting operations are potential emitters of radionuclides, the EPA Region X approved a request to construct and operate this source under NESHAP, on October 22, 1990. This approval allowed the SMC Project to operate Line 2B painting operations in accordance with 40 CFR 61.07, Periodic Confirmatory Measurements, which must be conducted in accordance with 40 CFR Part 61.93 (b) to determine radionuclide emissions used to demonstrate compliance with emissions limit. All emissions from this source must be included in the facility-wide INEEL annual NESHAPS report (40 CFR Part 61.94) and records supporting the emissions measurements must be kept as stated in 40 CFR Part 61.95. See compliance methodology form in Volume I, Section 5.5.1.2.2.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.2.3.4 Compliance Methodology and Status.

2.2.3.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application through the duration of the Tier I operating permit or until such a time as the applicable requirements may change. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the applicable requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the applicable requirement on the schedule specified in the requirement.

2.2.3.4.2 Compliance Methodology Forms—SMC complies with the emission limit requirements from HEPA filters by operating their facilities according to the methods and procedures outlined in the listed permit regarding HEPA filter efficiency testing, daily pressure checking and logging, and reporting results of these activities. VOC emissions are controlled by limiting the amount of production materials that can be painted on an annual basis. Annual emissions are accounted for by tracking individual parts painted and using this information to calculate VOC emissions. PM/PM-10 emission limits are also complied with by following the permit-listed requirements for HEPA filtration as mentioned above and limiting the production throughput through the 2B painting operation. Compliance certification forms , as requested by the State of Idaho for demonstrating compliance with the above-listed requirements, are shown in Figure VII-2-14. The compliance methodology form for the 10 mrem NESHAP aggregate limit is in Volume I, Section 5.5.1.2.2.

2.2.3.5 Emission Calculations. The following section provides a description of calculation methodologies used to show compliance with permit limits and to determine emissions for the NESHAPs annual report.

2.2.3.5.1 Nonradionuclide Emissions—The 2B paint process, as indicated above, has established permit limits identified in State of Idaho SMC PTC. Calculations that are used to demonstrate compliance are shown below.

VOC Emissions Calculation Methodology:

VOC emissions from this source are calculated on a level-of-effort basis. The following methodology is used to calculate VOC emissions.

Determine amount of parts processed during previous year operations.

Assumptions:

Percentage of material released into air.
100% of fume becomes VOC emission.

Calculation:

Parts/period × % of material released/part = total VOC emitted/period

PM/PM-10 Emissions Calculation Methodology:

PM/PM-10 emissions from this source are calculated on a level-of-effort basis. The following methodology is used to calculate PM/PM-10 emissions.

Determine amount of material processed during previous year operations.

Assumptions:

Percentage of material released from operation = particulate emission.
All particulates are emitted into air filtration system.
Percentage of particulate emissions escape HEPA filtration.

Calculation:

Particulate % of material × total material processed/period x mitigation factor = total PM/PM-10 emitted/period

Where:

Mitigation factor = (1-0.9997).

2.2.3.5.2 Radionuclide Emissions—Radionuclide emissions from this source are calculated on a level-of-effort basis identified as Method II: Possession Quantity Techniques found in Appendix E of Volume I.

Mitigation factor = (1- 0.9997)

Figure VII-2-12. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 629 - 012	Line 2B Paint Process	TAN - 629	
MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED	
Binks Paint Booth	—	March 1990	

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	Rustoleum Acrylic Latex	3.2	—	—	gal
PRODUCT OUTPUT	NA	NA	NA	NA	NA
WASTE OUTPUT	NA	NA	NA	NA	NA
RECYCLE	NA	NA	NA	NA	NA

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
—	—	—	—	—	—

Figure VII-2-12. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Dry Filters	HEPA Filter
TYPE CODE (APPENDIX H)	018	101
MANUFACTURER	NA	Flanders or equivalent
MODEL NUMBER	NA	None
INLET TEMPERATURE (°F)	70	70
PRESSURE DROP (INCHES H20)	NA	5.0 max.
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
Y	05	4400	100

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
102	330	225

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	361.05	4857.35	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GASFLOW RATE (ACFM)	STACK EXIT TEMP (°F)
27.4	20	6,000	80

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Particulate	—	—	99.97	—	0.5 ton/yr[a]	SMC PTC
Radionuclide	—	—	99.97	—	10 mrem/yr[b]	SMC PTC
VOC-nonmethane	—	—	—	—	4.1 ton/yr[a]	SMC PTC

a. This is the combined total of Stacks TAN-629-012 and TAN-629-014.

b. In aggregate with all other INEEL sources.

Figure VII-2-13. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 629 - 014	Line 2B Paint Process	TAN - 629	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
Binks Paint Booth	—		March 1990

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	Rustoleum Acrylic Latex	3.2	—	—	gal
PRODUCT OUTPUT	NA	NA	NA	NA	NA
WASTE OUTPUT	NA	NA	NA	NA	NA
RECYCLE	NA	NA	NA	NA	NA

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
—	—	—	—	—	—

Figure VII-2-13. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Dry Filters	HEPA Filter
TYPE CODE (APPENDIX H)	018	101
MANUFACTURER	NA	Flanders or equivalent
MODEL NUMBER	NA	None
INLET TEMPERATURE (ºF)	70	—
PRESSURE DROP (INCHES H20)	NA.	5.0
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
Y	05	4400	100

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
102	330	225

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	361.04	4857.36	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXITDIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
27.4	20	6,000	80

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Particulate	—	—	99.97	—	0.5 ton/yr[a]	SMC PTC
Radionuclide	—	—	99.97	—	10 mrem/yr[b]	SMC PTC
VOC-nonmethane	—	—	—	—	4.1 ton/yr[a]	SMC PTC

a. This is the combined total of Stacks TAN-629-012 and TAN-629-014.

b. In aggregate with all other INEEL sources.

Emission Point Number TAN-629-012 and -014

REQUIREMENT 1

Requirement: Install, operate, and/or maintain HEPA filtration units at an operational efficiency of no less than 99.97% in filtration of particulates.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Monitoring and Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: HEPA filter efficiency testing is done upon installation of a new unit, and at least annually thereafter, according to the standard test methods set forth in ASME N510, Sections 4 & 5. Certified HEPA filters are tested and shown to have removal efficiencies of no less than 99.97%. Those filters demonstrating efficiencies less than this are replaced within 10 days (as specified by permit requirements) or prior to restart of a nonoperating process. All newly installed filters are pretested and certified prior to installation. Procedures are maintained that specify the conditions requiring changeout of the HEPA filters.

Reference test method citation: ASME N510, Sections 10.4 and 10.5.

MONITORING

Monitoring device type: Pressure differential gauge or sensor.

Monitor location description: At filter stages.

Regulated air pollutant being monitored: Radiolnuclides

Generally describe the frequency and duration of sampling and how the data will be reported: All HEPA filters shall be monitored for pressure drop to ensure operation and maintenance of certified HEPA filter stages at a maximum pressure drop of 5.0 inches water column. All certified HEPA filter stages shown to have a pressure drop of greater than 5.0 inches water column are replaced within 10 working days or prior to restart of a nonoperating process.

RECORDKEEPING

Data (parameter) being recorded: The dates and results of all efficiency tests using the ASME N510 test method, the dates of replacement of HEPA filter elements, and daily pressure drop measurements across the certified HEPA filter.

Frequency of recordkeeping (how often data recorded): Daily or as required to maintain efficiency of HEPA filters.

REPORTING

Generally describe what is reported: Provide statement to DEQ that all requirements of Appendix B of permit have been met.

Frequency of reporting: Quarterly.

Beginning date: TBD

Figure VII-2-14. Compliance Certification Form (method of compliance).

Emission Point Number TAN-629-012 and -014

REQUIREMENT 2

Requirement: Emissions from Stacks TAN-629-012 and -014 shall not exceed 4.1ton/yr VOC.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: VOCs

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Gallons of paint and calculated emissions

Frequency of recordkeeping (how often data recorded): Daily/per event for gallons of paint and annually for calculated emissions

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-14. (continued).

Emission Point Number TAN-629-012 and -014

REQUIREMENT 3

Requirement: Emissions from Stacks TAN-629-012 and -014 shall not exceed 0.5 ton/yr PM/PM-10.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: PM/PM-10

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Material throughput and calculated emissions.

Frequency of recordkeeping (how often data recorded): As needed to record total amount of yearly material throughput.

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-14. (continued).

2.2.4 TAN-629-002 Specific Information

This section contains information about emissions from the TAN-629 Production Line 4 which vents to Stack TAN-629-002. Production operations on Line 4 generally include laser cutting, punching, storage, and stacking of stainless metals and organic composite materials. Line 4 is relatively open to the room atmosphere with particulate-collection filters located below the cutting table to draw particulates away from the work process and direct flow to duct systems. Stack TAN-629-002 is permitted by the PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC) for PM/PM-10, styrene, benzene, and VOC emissions, but not radionuclides.

Figure VII-2-8 shows a plot plan of the TAN-629 building and associated emission stacks. Refer to the state application forms (Figure VII-2-15) for specific operational information about this source.

2.2.4.1 Process Description. Line 4 production operations are commonly ducted through Stack TAN-629-002. Line 4 laser operations process both stainless steel and organic composite materials. Operations in Line 4 also include material storage, stacking and punching. Because the Line 4 laser cuts VOC-emitting organic materials, a dedicated air collection system has been installed to route Line 4 laser air away from the workplace and to outdoor air through Stack TAN-629-002. Four small production support welding hoods (an insignificant source of emissions) also vent into the same ductwork that serves the Line 4 laser, and these emissions are then vented through Stack TAN-629-002. The majority of the Line 4 laser exhaust must pass through a particulate-collection filter, which is integral to the laser unit, prior to routing to building air filters (uncertified filters), and discharge through Stack TAN-629-002. See Figure VII-2-10 for the process flow diagram for this source.

The Stack TAN-629-002 laser exhaust is currently regulated by SMC PTC conditions for the processing of organic composite materials. The laser processing of stainless steel on Line 4 is not regulated by existing SMC PTC conditions. Emissions from permitted Line 4 laser operations are controlled by monitoring material feed through-put, tracking hourly usage, and maintaining particulate collection filter integrity.

The Line 4 laser cutting operations at SMC employ a handling table equipped with a vacuum underdraft air system in the immediate vicinity of the cutting head. The underdraft air is filtered through an automobile-type canister air filter that is then ducted to building air filters. In-house testing of airflow particulate loading downstream of the underdraft filter during nominal operations demonstrated no measurable breakthrough of airborne particulate material. Consequently, the filtered underdraft air, that flows from the laser into building ductwork does not comprise a point of particulate emission discharge during normal operations.

The laser underdraft system does not abate nonparticulate pollutants; consequently, the underdraft vent does exhaust VOCs whenever organic materials are processed by the laser. Because some VOCs from organic composite materials emitted during laser processing are not adequately collected by the vacuum underdraft system, an induced draft air uptake shroud has been installed immediately above the Line 4 cutting area. This shroud collects small amounts of VOCs and particulates that are fugitive from the vacuum air underdraft system. The shroud air is not filtered by the filter integral to the laser unit but rather is ducted directly to the same discharge points as the underdraft duct prior to discharge. In-house testing of shroud duct air during organic composite material and steel laser processing indicated a small but measurable amount of particulate emission.

The laser cutting operation on Line 4 has a roughing filter (assumed efficiency of 30%) and a filter at an assumed 80% efficiency rate to remove process-generated particulates.

There is no existing emissions monitoring equipment associated with the laser cutting process.

SMC employs the use of welding rod logs to collect data pertaining to usage of welding rods. Both type and quantity (number of rods or weight of spool) are recorded in these logs. From these logs SMC has been able to determine the amount of rod used by type as well as calculate emissions from welding sources.

2.2.4.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from Stack TAN-629-002, which vents laser operations from Line 4 and welding operations from TAN-629. The quantities listed for PM/PM-10, styrene, benzene, and VOC emissions represent maximum permitted emissions in these areas. These nonradionuclide emissions from Line 4 are permitted by State of Idaho SMC PTC.

Substance	CAS	Annual maximum emission	Criteria pollutant
PM/PM-10	NA	0.007 ton/yr	X
Styrene	100-42-5	0.0085 ton/yr	—
Benzene	71-43-2	0.0085 ton/yr	—
VOC	NA	0.0403 ton/yr	X

2.2.4.3 Compliance Requirements.

2.2.4.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in the SMC PTC. The following data includes the SMC PTC limits for which this source must maintain compliance.

Pollutant	CAS	Emission limit
PM/PM-10	NA	0.007 ton/yr
Styrene	100-42-5	0.0085 ton/yr
Benzene	71-43-2	0.0085 ton/yr
VOC	NA	0.0403 ton/yr

2.2.4.3.2 Existing Permit Requirements—SMC TAN-629 Line 4 emissions through Stack TAN-629-002 are regulated by State of Idaho PTC conditions specified in the SMC PTC. Welding emissions from Line 1 and Line 6 are also regulated by State of Idaho PTC conditions specified in the SMC PTC. Requirements listed below are taken verbatim from SMC PTC as they pertain to emission sources from Lines 1, 4, and 6 through Stack TAN-629-002.

Emissions from Stack TAN-629-002 shall not exceed:

- 0.007 ton/yr PM/PM-10
- 0.0403 ton/yr VOC
- 0.0085 ton/yr styrene
- 0.0085 ton/yr benzene

2.2.4.3.3 Other Enforceable Requirements—The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.2.4.4 Compliance Methodology and Status.

2.2.4.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application through the duration of the Tier I operating permit or until such a time as the applicable requirements may change. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the requirement on the schedule specified in the requirement.

2.2.4.4.2 Compliance Methodology Forms—See compliance certification forms (Figure VII-2-16).

2.2.4.5 Emission Calculations. The following section provides a description of calculation methodologies used to calculate emissions on the regulated pollutant table.

2.2.4.5.1 Nonradionuclide Emissions—Stack TAN-629-002, as indicated above, has established permit limits identified in State of Idaho SMC PTC. Calculations of nonradionuclide emissions to show compliance with permit limits are demonstrated below.

VOC Emissions Calculation Methodology:

VOC emissions from this source are calculated on a level-of-effort basis, determined by the amount of material processed annually during operations.

Assumptions:

Percentage of material released from operation into air.
100 percentage of fume becomes VOC emission.

Calculation:

Material throughput/period × % of VOCs released/operation = total VOC emitted/period

Styrene Emissions Calculation Methodology:

Stack test information concerning the laser processing of organic composite materials (OCMs) was obtained from sources outside the SMC Project. These emissions are considered representative of VOC emissions resulting from MDF CO_2 laser processing of OCM. Since the Line 4 operation is equivalent based on materials and cutting configuration, results of this stack test also apply to Line 4 operations. The stack test information consists of:

Stack Test Conditions—Baseline conditions used to extrapolate emissions.

Flow rate = 2,475 acfm, or 2,361 dscfm at 1,550 ft above sea level
Laser cut rate = 0.86 $in.^3$/min

Procedure:

1. Calculate contribution of styrene in ft^3 to $in.^3$ of OCM replaced, see equation 1
2. Calculate emission rate of styrene (ft^3/min), see equation 2
3. Calculate hourly and yearly emission rate, see equations 3 and 4.

Stack Test Analytical Results (OCM)

Material	ppm (v/v)
phenolics	< 0.6
toluene	0.3
ethylene benzene	0.05
xylene	0.04
cyclohexane	1.6
benzene	1.0
ethynyl benzene	0.3
ethenyl benzene (styrene)	1.1
other	< 0.1

$$\frac{\text{conc. (v/v) of styrene}}{\text{1.0E + 06}} \text{ x } \frac{\text{flowrate}}{\text{laser cut rate}} = \frac{\text{ft}^3\text{ (styrene released)}}{\text{in.}^3\text{ (GRP displaced)}} \quad (1)$$

where:

conc. (v/v) of styrene = 1.1 ppm (v/v)

flowrate[a] = 2475 acfm

laser cut rate = 0.86 in.^{3}/min

$$\frac{\text{ft}^3\text{ (styrene released)}}{\text{in.}^3\text{ (GRP displaced)}} \text{ x GRP displacement rate} = \left(\frac{\text{ft}^3}{\text{min}}\right) \text{styrene emission rate} \quad (2)$$

OCM displace rate = 0.3024 in.^{3}/min.

$$\text{Conversion of styrene emission rate} \left(\frac{\text{ft}^3}{\text{min}}\right) \text{to} \left(\frac{\text{lb}}{\text{hr}}\right)$$

$$\text{styrene emission rate} \left(\frac{\text{ft}^3}{\text{min}}\right) \times \frac{(460 + 32)\text{R}}{(460 + 70)\text{R}} \times \frac{1\text{ lb - mol}}{359\text{ ft}^3} \times \frac{60\text{ min}}{1\text{ hr}} \times \frac{\text{mol - wt styrene}}{1\text{ lb - mol}} = \text{lb/hr} \quad (3)$$

where:

mol-wt styrene = 104.14

Conversion of lb/hr to ton/yr

Total hrs of operation H styrene emission rate (lb/hr) × 1 T/2000 lb = ton/yr (4)

Total hours of operation = 100 hr/yr.

Benzene Emissions Calculation Methodology:

Stack test information concerning the laser processing of OCMs was obtained from sources outside the SMC Project. These emissions are considered representative of VOC emissions resulting from MDF CO_2 laser processing of OCM. Since the Line 4 operation is equivalent based on materials and cutting configuration results of this stack test also apply to Line 4 operations. The stack test information consists of:

a. ACFM used here as in PSD/PTC application will represent a conservative estimate since stack analytical results are per dscf.

Stack Test Conditions—Baseline conditions used to extrapolate emissions.

Flow rate = 2475 acfm, or 2361 dscfm at 1550 ft above sea level
Laser cut rate = 0.86 $in.^3$/min

Procedure:

1. Calculate contribution of benzene in ft^3 to $in.^3$ of OCM replaced, see equation 2-1
2. Calculate emission rate of benzene (ft^3/min), see equation 2-2
3. Calculate hourly and yearly emission rate, see equations 2-3 and 2-4.

Stack Test Analytical Results (OCM)

Material	ppm (v/v)
phenolics	< 0.6
toluene	0.3
ethylene benzene	0.05
xylene	0.04
cyclohexane	1.6
benzene	1.0
ethynyl benzene	0.3
ethenyl benzene (styrene)	1.1
other	< 0.1

$$\frac{\text{conc.(v/v) of benzene}}{\text{1.0E + 06}} \times \frac{\text{flowrate}}{\text{laser cut rate}} = \frac{\text{ft}^3\text{(benzene released)}}{\text{in}^3\text{ (GRP displaced)}} \quad (5)$$

where:

conc. (v/v) of benzene = 1.1 ppm (v/v)
flowrate[a] = 2475 acfm
laser cut rate = 0.86 $in.^3$/min

$$\frac{\text{ft}^3\text{(benzene released)}}{\text{in}^3\text{ (GRP displaced)}} \times \text{GRP displacement rate} = \left(\frac{\text{ft}^3}{\text{min}}\right)\text{benzene emission rate} \quad (6)$$

OCM displace rate = 0.3024 $in.^3$/min.

$$\text{Conversion of benzene emission rate}\left(\frac{\text{ft}^3}{\text{min}}\right)\text{to}\left(\frac{\text{lb}}{\text{hr}}\right)$$

a. ACFM used here as in PSD/PTC application will represent a conservative estimate since stack analytical results are per dscf.

$$\text{benzene emission rate}\left(\frac{\text{ft}^3}{\text{min}}\right)\times\frac{(460+32)\text{R}}{(460+70)\text{R}}\times\frac{1\,\text{lb - mol}}{359\,\text{ft}^3}\times\frac{60\,\text{min}}{1\,\text{hr}}\times\frac{\text{Mol - wt benzene}}{1\,\text{lb - mol}} = \text{lb/hr} \quad (7)$$

where:

mol-wt benzene = 78.11

Conversion of lb/hr to ton/yr

Total hrs of operation x benzene emission rate (lb/hr) × 1 ton/2000 lb = ton/yr (8)

Total hours of operation = 100 hr/yr.

PM/PM-10 Emissions Calculation Methodology:

PM/PM-10 emissions from this source are calculated on a level-of-effort basis. The following methodology is used to calculate PM/PM-10 emissions.

Determine amount of material processed during previous year operations.

Assumptions:

Percentage of material released from operation = particulate emission.
All particulates are emitted into air filtration system.
Percentage of particulate emissions escape filtration.

Calculation:

Particulate % of material x total material processed x mitigation factor = total PM/PM-10 emitted

Where:

Mitigation factor = (1-0.80)

2.2.4.5.2 Radionuclide Emissions—There are no radionuclide emissions from the Line 4 laser cutting process.

Figure VII-2-15. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 629 - 002	Line 4 Production	TAN - 629	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	NA		1985

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	OCCM	18.14	—	—	in^3
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY VOLUME	FRACTION IN RECYCLE STREAM BY WEIGHT
Styrene	100-42-5	—	—	1% v/v	—
Benzene	71-43-2	—	—	19.6% v/v	—
Phenolics	—	—	—	11.8% v/v	—
Toluene	108-88-3	—	—	5.9% v/v	—
Ethenyl benzene	100-42-5	—	—	21.6%	—
Xylene	1330-20-7	—	—	0.8%	—
Cyclohexane	110-82-7	—	—	31.4%	—
Ethynyl benzene	536-74-3	—	—	5.9%	—

Figure VII-2-15. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Prefilter	Roughing filter
TYPE CODE (APPENDIX H)	—	—
MANUFACTURER	Farr	Farr
MODEL NUMBER	—	—
INLET TEMPERATURE (ºF)	70	70
PRESSURE DROP (INCHES H20)	—	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
Y	06	8000	100

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
102	330	225

STACK DATA

GROUND ELEVATION(FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	361.08	4857.34	02

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
30	26	18,500	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Particulate	NA	—	30/80	—	0.007 ton/yr	SMC PTC
VOC-nonmethane	NA	—	—	—	0.0403 ton/yr	SMC PTC
Styrene	100-42-5	—	—	—	0.0085 ton/yr	SMC PTC
Benzene	71-43-2	—	—	—	0.0085 ton/yr	SMC PTC

Emission Point Number TAN-629-002

REQUIREMENT

Requirement: Emissions from Stack TAN-629-002 shall not exceed 0.007 ton/yr PM/PM-10, 0.0403 ton/yr VOC, 0.0085 ton/yr benzene, and 0.085 ton/yr styrene.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: PM/PM-10, VOCs, benzene, styrene

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amount of laser cutting operation during year and calculated emissions.

Frequency of recordkeeping (how often data recorded): As needed to record total amount of yearly material throughput and annually for calculated emissions.

REPORTING

Generally describe what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-16. Compliance Certification Form (method of compliance).

2.3 TAN-677, Maintenance Welding, Production Plasma Arc Cutting, and Storage

2.3.1 General Description

The TAN-677 Maintenance Welding, Production Plasma-Arc Cutting, and Storage Facility is located at the south end of the TAN-629 manufacturing operations area (see Figure VII-2-17). TAN-677 was constructed adjacent to TAN-629 hanger building for the purpose of handling and storing both in-process and finished product from the TAN-629 manufacturing facility. In addition to storage of in-process production materials, TAN-677 is also used to perform maintenance welding and production plasma-arc metal cutting activities. The shop performs maintenance welding and other metal working activities in support of the SMC Project. Equipment typically located here are welders, lathes, and milling machines. Production plasma-arc metal cutting activities support the TAN-629 manufacturing operation by cutting steel plate to various shapes for later use in the assembly production line.

Emissions from the welding operations were permitted via the PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC) using the prevention of significant deterioration methodology. Volume I of this application identifies criteria for categorizing emissions from maintenance welding sources as not significant across the INEEL. Emissions from the production plasma-arc metal cutting is permitted through SMC PTC.

2.3.2 TAN-677-030 Specific Information

A maintenance support service area exists in TAN-677. The welding hood that is used in conjunction with the TAN-677 maintenance support area is vented through Stack TAN-677-30. Figures VII-2-18 and VII-2-19 are the State Operating Permit Application Forms and discussed in process description

The TAN-677 is operated in support of SMC Maintenance and Production Plasma-Arc Cutting processes. However, a wide variety of work may also be occasionally performed in support of INEEL-wide projects and initiatives amendable to SMC workloads and capabilities.

SMC employs the use of welding rod logs at the TAN-682 Tool Crib to collect data pertaining to the total usage of welding rods. Both the type and quantity (number of rods or weight of spool) of weld rod material are recorded in this log. If a spool of wire feed material is returned to the tool crib, the spool is weighted to account for its overall usage. This tracking mechanism was developed to meet requirements set forth in applicable SMC PTCs. From these logs SMC can determine the amount and type of weld rod material used and subsequently calculate emissions from welding sources.

2.3.2.1 Process Description. SMC uses two major types of welding operations: (a) shielded metal arc welding, and (b) gas metal arc welding (see process flow diagram in Figure VII-2-20). Of all the welding processes, shielded metal arc welding generates the majority of particulate matter and particulate-phase hazardous air pollutants. Typical inventory of welding materials at SMC tool cribs include heliarc rods, wire roll rods, and stick rods with external flux coating. There is no existing emission control equipment for the maintenance weld hood that vents to Stack TAN-677-030. Additionally, emissions from Stack TAN-677-030 are not monitored by any particular instrument or device. SMC personnel employ annual weld rod use information from each tool crib that distributes weld rod and uses these data to determine total emissions of particulate and gaseous-phase HAPs from this source. Because welding processes at SMC are limited in scope to that of maintenance and fabrication support operations, emissions from welding sources are very small.

Because maintenance welding operations at the INEEL are considered not-significant, and therefore are not permitted as a significant source, SMC is not including welding operations on state operating permit source information forms in this application.

2.3.2.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from this source (TAN-677-030).

Pollutant	CAS	Annual Maximum Emission	Criteria Pollutant
PM/PM-10	N/A	7.8 E-3 ton/yr[a]	X

a. Aggregate for maintenance welding and plasma-arc cutting operations

2.3.2.3 Compliance Requirements.

2.3.2.3.1 Permitted Emission Limits—Activities that are considered potential emitters of air pollution have been examined by the Idaho Department of Environmental Quality in the forms of PTC applications and permitted accordingly.

This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following data includes SMC PTC limits for which this source must maintain compliance.

Pollutant	CAS	Emission Limit
PM/PM-10	NA	7.8E-3 ton/yr[a]

a. Aggregate for maintenance welding and plasma-arc cutting operations

2.3.2.3.2 Existing Permit Requirements—SMC emission are regulated by State of Idaho PTC conditions specified in SMC PTC.

Existing permit conditions for the TAN-677 under the above referenced permit document, are as follows:

SMC PTC:

1. PM/PM-10 emissions from Stack TAN-677-030 shall not exceed any corresponding emission rate limit listed in Appendix A.

   Appendix A Limits: PM/PM-10 7.8 E-3 ton/yr

2. The permittee shall maintain a record of the amount of weld material used per calendar year. This record shall be maintained onsite for two years and shall be made available to DEQ personnel upon request.

2.3.2.3.3 Other Enforceable Requirements—The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.3.2.4 Compliance Methodology and Status.

2.3.2.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the requirement on the schedule specified.

Refer to the compliance certification forms (Figure VII-2-21) for information pertaining to activities performed to maintain compliance with existing applicable requirements.

2.3.2.5 Compliance Methodology Forms. See attached forms (Figure VII-2-21).

2.3.2.6 Emission Calculations. The following section provides a description of calculation methodologies used to calculate emissions for regulated pollutant tables.

2.3.2.6.1 Nonradionuclide Emissions—Welding operations as described above, have established permit limits identified in State of Idaho SMC PTC.

Calculation:

lb of weld rod used (by type) × AP-42 factor (by type) = total PM/PM-10 =emission of rod

2.3.2.6.2 Radionuclide Emissions—There are no radionuclide emissions from this source.

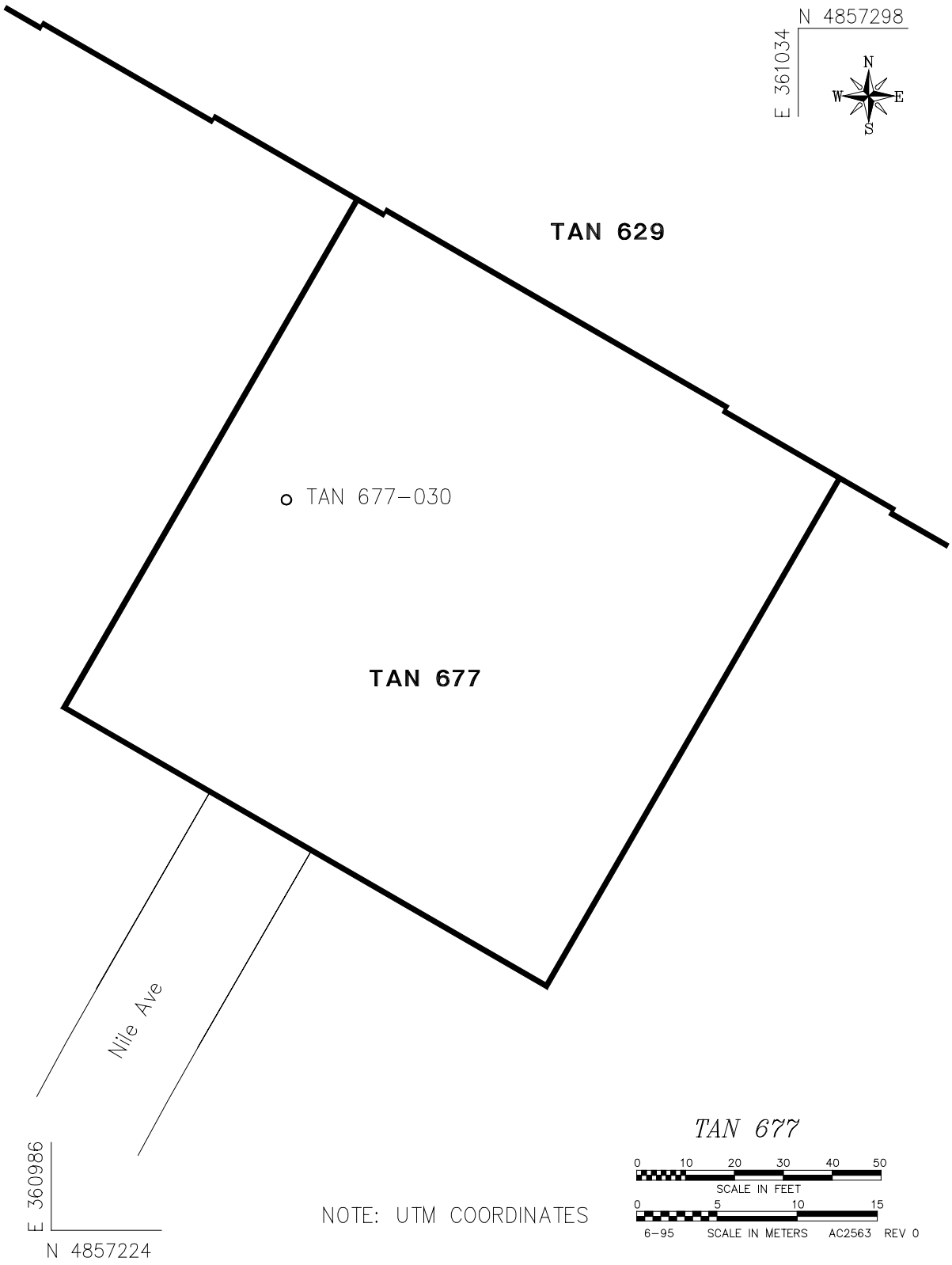

Figure VII-2-17. Plot plan for TAN-677 maintenance welding/storage facility/production plasma-arc cutting.

Figure VII-2-18. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 677 - 030	Maintenance welding	TAN - 677	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	NA		1998

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	NA	----	----	---	---
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-18. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	--	NA
TYPE CODE (APPENDIX H)	--	---
MANUFACTURER	--	---
MODEL NUMBER	--	---
INLET TEMPERATURE (ºF)	--	---
PRESSURE DROP (INCHES H20)	--	---
WET SCRUBBER FLOW (GPM)	--	---
BAGHOUSE AIR/CLOTH RATIO (FPM)	--	---

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
65	210	147

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	Plot Plan	Plot Plan[a]	02

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
58.7	24 X 24	12,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Particulate	NA	—	—	—	7.8E-3 ton/yr[a]	SMC PTC

a. This limit applies to maintenance welding and plasma-arc metal cutting.

Figure VII-2-19. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 677 - 030	Plasma-Arc Cutting	TAN - 677	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	NA		1998

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	NA	----	----	---	---
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-19. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Dust Hog	NA
TYPE CODE (APPENDIX H)	NA	---
MANUFACTURER	United Air Specialties, Inc.	---
MODEL NUMBER	FJH & 12-3-H55	---
INLET TEMPERATURE (ºF)	NA	---
PRESSURE DROP (INCHES H20)	NA	---
WET SCRUBBER FLOW (GPM)	NA	---
BAGHOUSE AIR/CLOTH RATIO (FPM)	NA	---

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
65	210	147

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	Plot Plan[a]	Plot Plan[a]	02

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
58.7	24 X 24	12,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
PM/PM-10	NA	—	99.93	—	7.8E-3 ton/yr[a]	SMC PTC

a. This limit applies to maintenance welding and plasma-arc metal cutting.

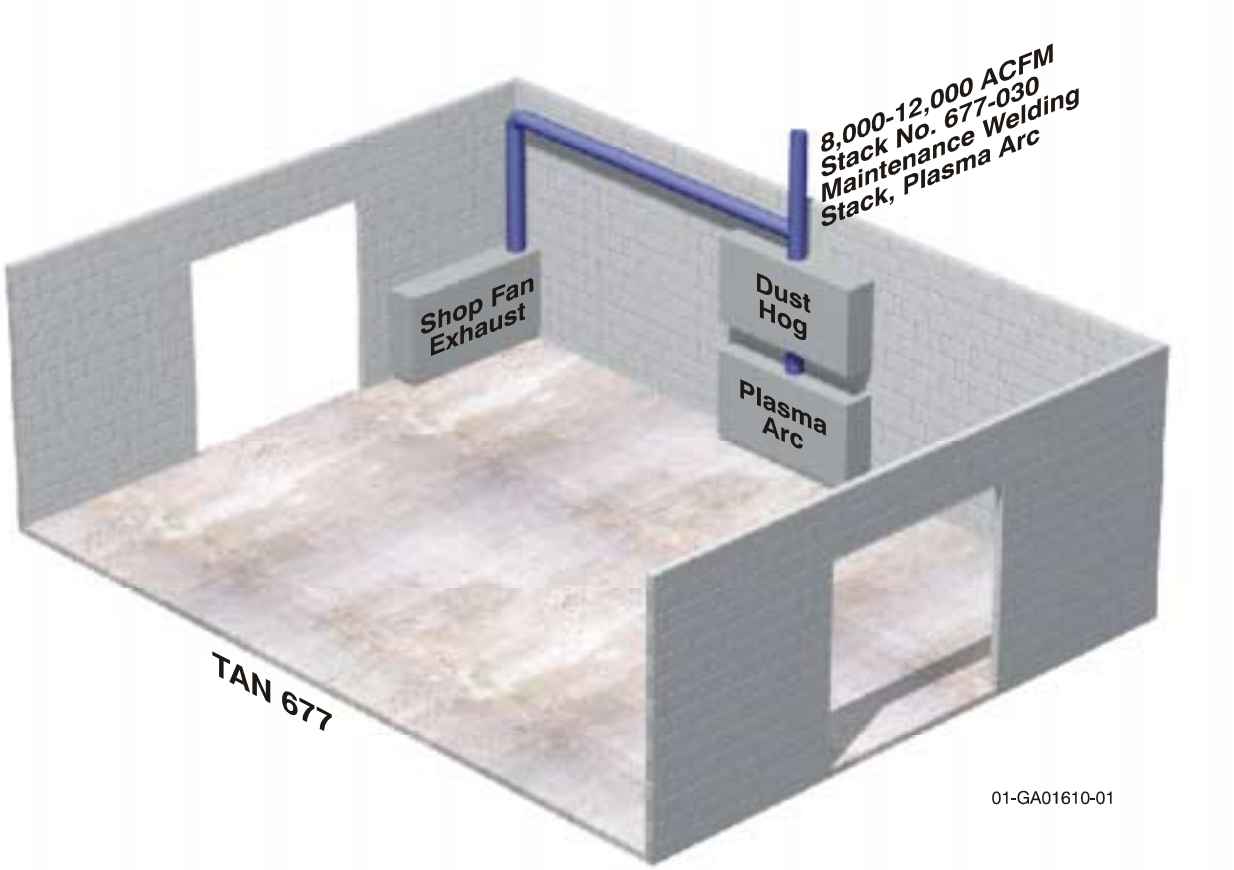

Figure VII-2-20. Process flow diagram for TAN-677.

Emission Point Number TAN-677-030

REQUIREMENT

Requirement: Emissions shall not exceed 7.8 E-03 ton/yr PM/PM-10.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: PM/PM-10

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: lb of weld rod materials used per calendar year.

Frequency of recordkeeping (how often are data recorded): As required to keep logs accurate and up to date and to calculate annual emissions. These records shall be maintained on-site for two years.

REPORTING

General description of what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-21. Compliance Certification Form (method of compliance).

2.3.3 TAN-677-030 Specific Information

A plasma-arc metal cutting machine that supports TAN-629 production operations is also housed in TAN-677 (see Figure VII-2-17). Emissions from this process are also vented to Stack TAN-677-030. The metal cutting system differs from oxy-fuel metal cutting in that an electrical arc is used as the cutting medium rather than oxygen and acetylene. Emissions from the plasma arc metal cutting machine are routed through a Dust Hog® with a manufacturers rated particulate removal efficiency of 99.93%.

Records are maintained at TAN-677 pertaining to the amount of linear inches of carbon and stainless steel that have been cut and the time the machine was operated. From this data the emissions from this process can be calculated annually.

2.3.3.1 Process Description. Carbon and stainless steel parts of various thicknesses are cut to shape using a computer controlled plasma-arc cutting machine. These parts are temporarily stored in TAN-677 awaiting further processing in TAN-629.

2.3.3.2 Maximum Permitted Regulated Pollutant Emissions. The following data addresses all regulated pollutants potentially emitted from this source (Stack TAN-677-030).

Pollutant	CAS	Annual Maximum Emission	Criteria Pollutant
PM/PM-10	N/A	7.8E-3 ton/yr[a]	X

a. Aggregate for maintenance welding and plasma-arc cutting operations

2.3.3.3 Compliance Requirement.

2.3.3.3.1 Permitted Emission Limits—Activities that are considered potential air pollution emitters or have been examined by the Idaho DEQ in the forms of PTC applications and permitted accordingly.

This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following data includes SMC PTC limits for which this source must maintain compliance.

Pollutant	CAS	Emission Limit
PM/PM-10	NA	7.8E-3 ton/yr[a]

a. Aggregate for maintenance welding and plasma-arc cutting operations

2.3.3.3.2 Existing Permit Requirements—SMC emissions are regulated by State of Idaho PTC conditions specified in SMC PTC.

Existing permit conditions for the TAN-677 under the above referenced permit document, are as follows:

- PM/PM-10 emissions from Stack TAN-677-030 shall not exceed any corresponding emission rate limit listed in Appendix A.

- Appendix A Limits: PM/PM-10 7.8E-03 ton/yr

2.3.3.3.3 Other Enforceable Requirements—The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.3.3.4 Compliance Methodology and Status Forms.

2.3.3.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the requirement on the schedule specified.

Refer to the compliance certification forms for information pertaining to activities performed to maintain compliance with existing applicable requirements.

2.3.3.5 Compliance Methodology Forms. See Figure VII-2-22.

2.3.3.6 Emission Calculations. The following section provides a description of calculation methodologies used to calculate emissions in the regulated pollutant data (see Section 2.3.3.3.1).

2.3.3.6.1 Nonradionuclide Emissions—Plasma-arc metal cutting operations as described above, have established permit limits identified in State of Idaho SMC PTC.

Calculation:

(Maximum Plasma Cut Rate) (Time) (Mass of material Volatized) (Mitigation Factor) =
PM/PM-10 emission

Where:

Mass of material volatilized = 0.0026 lb/in^3
Maximum plasma cut rate = 2.1 in^3/min.
Mitigation Factor = 1-0.9993

2.3.3.6.2 Radionuclide Emissions—There are no radionuclide emissions from this source.

Emission Point Number TAN-677-030

REQUIREMENT

Requirement: Emissions shall not exceed 7.8 E-03 ton/yr PM/PM-10.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” June 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: PM/PM-10

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Cut rate, time, and mass of material volatilized.

Frequency of recordkeeping (how often are data recorded): As required to keep logs accurate and up to date and to calculate annual emissions. These records shall be maintained onsite for two years.

REPORTING

General description of what is reported: Estimated emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-22. Compliance Certification Form (method of compliance).

2.4 TAN-679, Rolling Operations—Production Facility

2.4.1 General Description

TAN-679 was constructed as part of the SMC manufacturing facility complex to support rolling operations of depleted uranium (DU) billets. As a whole, Rolling Operations facilities consist of buildings TAN-679 (North and South Process manufacturing operations) and TAN-681 (Process Reclamation Facility). For purposes of this document, discussions of TAN-679 and TAN-681 are separated into two sections.

As previously mentioned, TAN-679 houses the north and south manufacturing process areas, a boiler room, and various maintenance support areas. All of these areas are contained on the main or first floor of the facility. The second floor of TAN-679 houses personnel facility areas, and administrative offices. The third floor contains air handling equipment and HEPA exhaust systems which support the north and south process manufacturing operations and TAN-681.

The South process area contains heavy industrial processing equipment such as salt bath heating equipment, a rolling mill, and a water quench. This equipment is primarily designed and configured for processing billets of depleted uranium, although other metal billet types could also be processed in this facility. Radionuclide materials are not used at this facility in quantities which require continuous monitoring under 40 CFR 61 Subpart H.

Figure VII-2-23 provides a plan view of the TAN-679 Rolling Operations Building and associated emission stacks. Ancillary building TAN-681 is included as part of overall rolling operations as a process support facility.

2.4.2 TAN-679-025, -026, -027, and -099 Specific Information

This section contains information about the TAN-679, Rolling Operations and Fabrication facility comprising the South Process production areas. See Figures VII-2-24, VII-2-25, VII-2-26, and VII-2-26 for the state operating permit application forms for these sources.

South process operations include a salt bath for preparing billets for rolling operations, a rolling mill, a water quench for cooling rolled materials prior to conveyance into the north process area, a horizontal mill for sawing DU, and an oxidation oven for processing DU chips and fines. South process operations are primarily designed for fabrication from depleted uranium billets but have the capability to work with other metal types as well. A welding hood, TAN-679-099, supports maintenance welding activities conducted at SMC. Permitted emission limits are in Section 2.4.2.3.1. Calculated methods are identified in Section 2.4.2.5.1.

2.4.2.1 Process Description. DU billets are received, stored, unpackaged, and moved to a laydown area adjacent to the salt bath heating station in the TAN-679 South Process. The molten salt bath is used for heating the DU billets prior to rolling operations. The salt bath typically uses a mix of K_2CO_3 (65%), Li_2CO_3 (25%), and Na_2CO_3 (10%) salts that are heated to a molten state using removable electrical heating elements. Salt baths may be cooled to ambient temperatures during prolonged process shutdown. The salt bath is not considered a source of volatile emissions or particulates and is not regulated by existing SMC PTC conditions. See Figure VII-2-28 for the process flow diagram of this facility.

A salt bath basket is used as a staging/transfer station after removing the billets from the salt bath and prior to moving to the rolling mill conveyor. Each billet passes through the rolling operation a

specified number of times to achieve the desired configuration. An air curtain and metal shield confine DU contaminated water within the quench process enclosure. The water is subsequently collected in a catch tank, filtered, and recirculated back into the process.

The rolling mill has been identified as a minor source of VOCs (from airborne suspensions of lubrication oil used in roller bearings on the rolling operation) and is regulated by an SMC PTC emission limit. Because the entire South Process is ventilated through common ductwork, these emissions are assumed to be evenly distributed through Stacks TAN-679-025, -026, and -027. The exhaust fans to all three stacks are normally operated simultaneously. Mill roller refurbishment and grinding equipment are located adjacent to the mill work area and may contribute insignificant amounts of particulate material to workplace atmospheres.

Because South Process operations involve DU material, all emissions are vented through certified HEPA filters prior to discharge to the environment in order to minimize radionuclide particulate emissions. South Process emissions vent through Stacks TAN-679-025, -026, and -027 which are subject to various permit emission limitations. Radionuclide, PM-10, and VOC pollutants are regulated through PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC).

HEPA Filtration—HEPA filtration is considered to be an industry-wide best available control technology for the removal of airborne particulate material regardless of aerodynamic size. In order to minimize potential radionuclide emissions from facility stacks, the TAN-679 South Process utilizes a HEPA filtration system for each stack, which consists of roughing filters, prefilters and a particulate collection efficiency-certified HEPA filter connected in series to provide positive control of radionuclide particulate emissions from South Process operations.

The HEPA filtration system for Stacks TAN-679-025, -026, and -027 treats South Process exhaust air by ducting flow through HEPA filter banks consisting of 12 roughing filters, 12 prefilters, and 12 certified HEPA filters per bank. The maximum volumetric flow rate through each filter bank is 12,000 cfm. The certified HEPA filtration system for South Process operations is the primary piece of equipment that ensures abatement of particulate emissions from SMC Stacks TAN-679-025, -026, -027. Air entering the filtration unit first passes through the roughing filters and prefilters where approximately 30% of the particulates are removed. Following the prefilters the air passes through banks of certified HEPA filters that remove 99.97% of particles with a diameter of 0.3 microns.

Annual Collection Efficiency Testing—In-place particulate collection efficiency testing is performed at least once every 12 months and within 90 days of filter replacement on the Stacks TAN-679-025, -026, and -027 certified HEPA filters. This testing ensures that HEPA filtration efficiency is maintained at or above 99.97%. If a testable HEPA filter falls below a 99.97% particulate removal efficiency, replacement of the filter occurs within 10 days.

Daily Pressure Drop Monitoring—SMC personnel read and record daily the pressure drop across the certified HEPA filter bank using installed pressure monitoring devices and the air flow readings of the associated HVAC fans. This monitoring is intended to detect breaches or loading of the HEPA filter that might adversely affect particulate collection performance. The certified HEPA filters operate within a specific range. If the pressure drop across the certified HEPA filter is outside the specified range, the filter is replaced within 10 days.

The installed HEPA filter differential pressure instrumentation and exit flow velocity indicators are calibrated annually. Equipment causing abnormal calibration readings is repaired as soon as practicable.

Periodic Radiation Monitors—A continuous radionuclide emission monitor operates at Stacks TAN-679-025, -026, and -027 as an SMC best operating practice. Such monitors, which are not required by any currently applicable regulation, standard, or permit conditions, would be operated nonisokinetically in general (but not necessarily strict) adherence with requirements such as those identified in 40 CFR 61.93 and ANSI N13.1. Data collected by these monitors will be used comparatively with previously recorded stack emissions to detect generator trends or periodic deviations in actual radionuclide emissions. Although monitors will not be operated in a manner appropriate for representative sampling (and will not be used for purposes of rigorous compliance certification), the collected monitoring data may be used to provide estimated actual Stacks TAN-679-025, -026, and -027 emissions input to INEEL-wide radiation dose calculations (see Volume I).

2.4.2.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from Stacks TAN-679-025, -026, and -027, which comprise rolling operations in the TAN-679 South Process area and maintenance welding hood 679-099. The quantities listed for VOCs and radionuclides represent maximum release limits based on the operating capacity of equipment located within this processing area. Radionuclide and nonradionuclide emissions from the TAN-679 South Process are permitted by State of Idaho SMC PTC.

Pollutant	CAS	Maximum annual emission	Criteria pollutant
VOC	NA	0.048 ton/yr[a]	X
Radionuclides	NA	10 mrem/yr[b]	—
PM/PM-10	NA	0.001 ton/yr[c]	X

a. Not including 679-099.
b. This represents the aggregate emission limit for all INEEL radiological emission sources.
c. Not including 679-025, -026, -027.

2.4.2.3 Compliance Requirements.

2.4.2.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following data includes PTC limits with which this source must maintain compliance.

Pollutant	CAS	Permit limit or cap
VOC	NA	0.048 ton/yr[a]
Radionuclides	NA	10 mrem/yr[b]
PM/PM-10	NA	0.001 ton/yr[c]

a. Not including TAN-679-099.
b. This represents an aggregate emission limit for all INEEL radiological emission sources.
c. Not including 679-025, -026, and -027.

2.4.2.3.2 Existing Permit Requirements—SMC TAN-679 South Process Line emissions are regulated by State of Idaho PTC conditions specified in SMC PTC. Emissions from the South Process area are initially processed through a set of prefilter banks before transmitting to a set of certified

HEPA filters (99.97%) prior to being released to the atmosphere. This permit also contains the following additional permit requirements:

Currently, SMC PTC limitations for Stacks TAN-679-025, -026, -027 and TAN-679-099 are:

1. Emissions from Stacks TAN-679-025, -026, and -027 shall not exceed:

   0.001 ton/yr PM/PM-10 (Stack TAN-679-099 only)
   0.048 ton/yr VOC (Stack TAN-679-025, -026, and –027 only)

2. This source shall operate within the requirements of the EPA National Emission Standards for radionuclide emissions from Department of Energy Facilities (40 CFR 61.90).

3. Radionuclide emissions from Stacks TAN-679-025, -026, and -027 shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater then 10 millirems per year effective dose equivalent.

4. The permittee shall monitor the Stacks TAN-679-025, TAN-679-026, and TAN-679-027 HEPA filters as specified below.

   a. The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter, the first within 90 days of startup and at least every 12 months thereafter. Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test." In addition, an in-place ASME N510 efficiency test shall be conducted within 90 days of the date that the certified HEPA filter is replaced or installed.

   b. A pressure monitoring device shall be maintained to enable monitoring of pressure drop across each bank of certified HEPA filter bank. The pressure drop monitoring equipment shall be maintained in good working order. Pressure drop shall be checked daily when the HEPA filter is in use.

   c. Certified HEPA filter efficiency shall be maintained at or above 99.97% removal efficiency as determined by the guidelines of ASME N510, Section 10.

   d. Certified HEPA filter elements shall be replaced within 10 days if the removal efficiency falls below 99.97% as determined by ASME N510, Section 10.

   e. Each certified HEPA filter shall be operated at a pressure drop that is limited to less than 5.0 inches of water column.

   f. If the pressure drop across the certified HEPA filter exceeds 5.0 inches water column, the filter shall be replaced within 10 days of the exceedance.

   g. Within 90 days of issuance, the permittee shall submit to DEQ an operating and maintenance manual which describes the procedures that will be followed to ensure compliance with the above permit conditions.

   h. Within 90 days of issuance, the permittee shall submit to DEQ a quality assurance program, based on ASME N510 guidelines, which defines methods and procedures that will be used to ensure that quality and representative data is collected while

performing ASME N510 HEPA filter tests and while measuring pressure drops across in-place HEPA filters.

i. The permittee shall not process more than 54 parts per 10-hour shift for research and development production or 125 parts per 10-hour shift for regular production.

j. The results of the initial performance test of the HEPA filter shall be reported to DEQ within 30 days of performing the test.

k. The permittee shall submit the following information to DEQ in a quarterly report based on a quarter calendar year and due 30 days after the end of each quarter, stating that all the requirements of Appendix A of the SMC PTC have been met.

In addition, records of the following in format shall be kept on site and shall be made available for DEQ upon request:

- The dates and results of all efficiency tests using the ASME N510 test method
- The dates of replacement of HEPA filter elements
- Daily pressure drop measurements across the certified HEPA filter.

2.4.2.3.3 Other Enforceable Requirements—Because SMC South Process Rolling Mill operations are potential emitters of radionuclides, the EPA Region X approved a request to construct and operate this source under NESHAP, on October 22, 1990. This approval allowed the SMC Project to operate South Process manufacturing in accordance with 40 CFR 61.07. Periodic confirmatory measurements must be conducted in accordance with 40 CFR Part 61.93 (b) to determine radionuclide emissions used to demonstrate compliance with emissions limit. All emissions from this source must be included in the facility-wide INEEL annual NESHAPS report (40 CFR Part 61.94) and records supporting the emissions measurements must be kept as stated in 40 CFR Part 61.95. See compliance methodology form in Volume I, Section 5.5.1.2.2.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.4.2.4 Compliance Methodology and Status.

2.4.2.4.1 Compliance Plan—This source is in compliance, and will continue to comply, with the indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the applicable requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the applicable requirement on the schedule provided in the applicable requirement.

2.4.2.4.2 Compliance Methodology Forms—SMC complies with the emission limit requirements from HEPA filters by operating their facilities according to the methods and procedures outlined in the listed permit regarding HEPA filter efficiency testing, daily pressure checking and logging, and reporting results of these activities see Figures VII-2-29 and VII-2-30. VOC emissions are controlled by limiting the amount of units that can be produced on an annual basis. Annual emissions are accounted

for by tracking individual units processed in the South Process area and using this information to calculate VOC emissions. PM/PM-10 emissions are complied with by following the permit listed requirements for HEPA filtration as mentioned above and tracked by accounting for the weight of rod used in the welding process. Compliance certification forms, as requested by the State of Idaho for demonstrating compliance with the above-listed requirements, are included in the following pages. The compliance methodology form for the INEEL 10 mrem NESHAP aggregate limit is in Volume I, Section 5.5.1.2.2.

2.4.2.5 Emission Calculations. The following section provides a description of calculation methodologies used to show compliance with permit limits (see Section 2.4.2.3).

2.4.2.5.1 Nonradionuclide Emissions—Stack TAN-679-099 and Stacks TAN-679-025, -026, and -027, as indicated above, have established permit limits identified in the SMC PTC. Nonradionuclide emission calculations from this source are demonstrated below. Stack TAN-679-099 maintenance welding operations are also included here.

VOC Emissions Calculation Methodology:

Nonradionuclide emissions: VOC Source Calculation.

The source of VOC emissions from Stacks TAN-679-025, -026, and -027 are from Soluble Oil D-0786 used on the Rolling Mill in rolling operations.

Assumptions:

1. One pint oil used per 10-hr shift (worst case)
2. Equal emission distribution between stacks 679-025, -026, -027
3. Two 10 hr shifts/day, 5 days/wk, 52 wks/yr at maximum operation.

Calculation:

$$\frac{G_L\,(Re)}{hr} \times D_L = G_A\ (lb/hr)$$

Where:

1. G_L = gallons of lube oil used
2. R_e = resuspension factor of lube oil ~20%
3. G_A = gallons of airborne VOL
4. D_L = density of lube oil — 7.437 lb/gal
5. h_r = hours of operation

Equation:

G_a (h_y) × W_c = T_y (ton/yr)

Where:

1. G_a = lb/hr of VOC emission
2. h_y = hr/yr of operation
3. W_c = weight conversion (T/2000 lbs)
4. T_y = ton/yr of VOC emission

PM/PM-10 Emissions Calculation Methodology (maintenance welding in Stack TAN-679-099):

Calculation:

lb of weld rod used (by type) × AP-42 Factor (by type) = total PM/PM-10 emission of rod.

2.4.2.5.2 Radionuclide Emissions—Radionuclide emissions from this source are calculated on a level-of-effort basis identified as Method II: Possession Quantity Techniques found in Appendix E of Volume I.

Mitigation factor = (1- 0.9997)

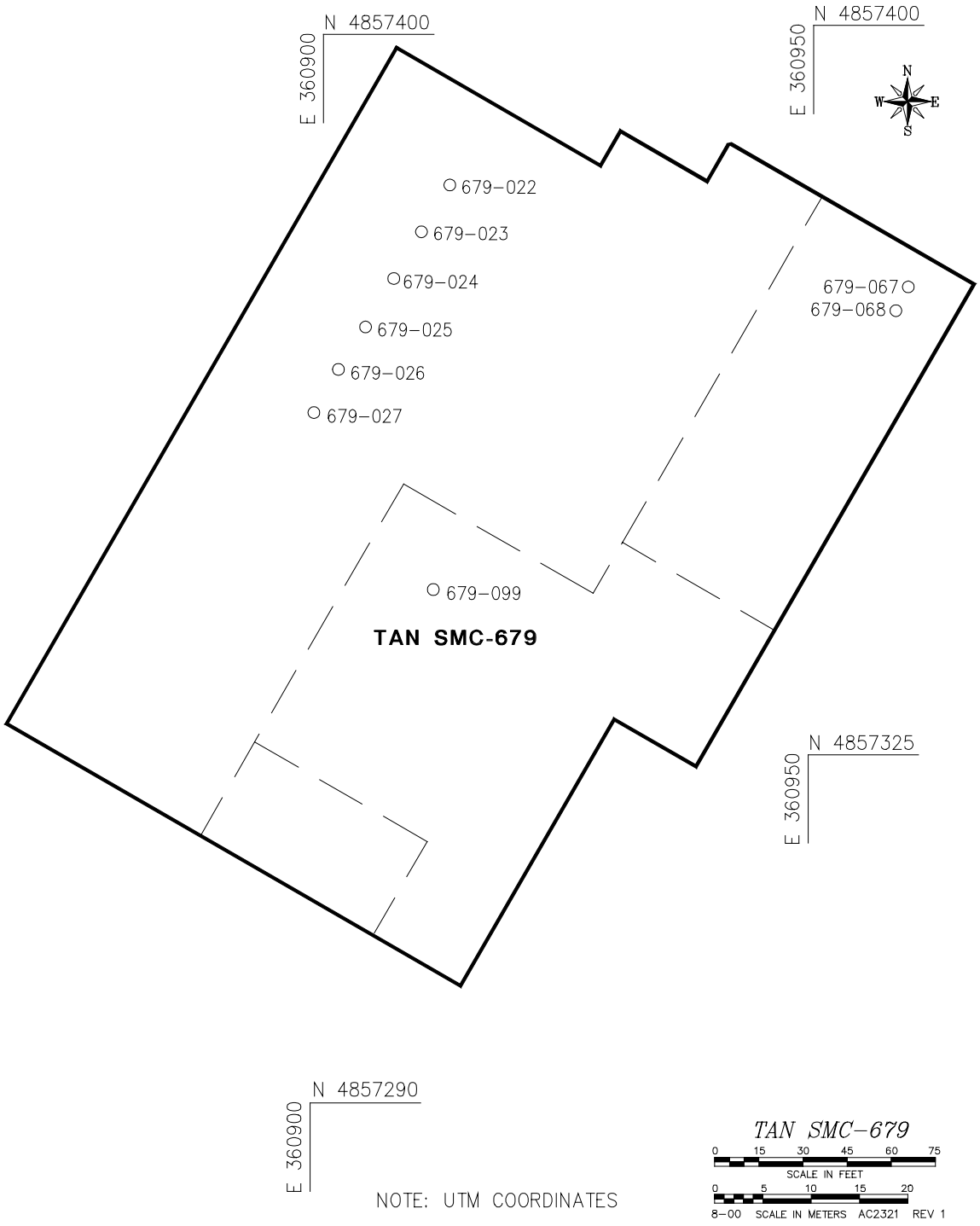

Figure VII-2-23. Plan view for TAN-679, rolling operations.

Figure VII-2-24. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 679 - 025	South Process Area	TAN - 679	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	—		1986-1987

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	DU Billets	Varies	Varies	Varies	—
PRODUCT OUTPUT	DU Parts	Varies	Varies	Varies	—
WASTE OUTPUT	DU Particulates	Varies	Varies	Varies	—
RECYCLE	—	Varies	Varies	Varies	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-24. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	None	—
INLET TEMPERATURE (°F)	70	—
PRESSURE DROP (INCHES H20)	5.0 max.	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.90	4857.37	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (°F)
57	30	12,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide[a]	NA	—	99.97	NA	10 mrem/yr	SMC PTC
VOC[b]	NA	—	—	NA	0.048 ton/yr	SMC PTC

a. Total radionuclide emissioning aggregate with all other INEEL sources must not exceed 10- mrem/yr.

b. VOC emission limit is aggregate for Stacks TAN-679-025, -026, and -027.

Figure VIII-2-25. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 679 - 026	South Process Area	TAN - 679	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	NA		1986-1987

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	DU Billets	Varies	Varies	Varies	—
PRODUCT OUTPUT	DU Parts	Varies	Varies	Varies	—
WASTE OUTPUT	DU Particulates	Varies	Varies	Varies	—
RECYCLE	—	Varies	Varies	Varies	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-25. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	None	—
INLET TEMPERATURE (ºF)	70	—
PRESSURE DROP (INCHES H20)	5.0 max.	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.90	4857.37	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
57	30	12,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide[a]	NA	—	99.97	NA	10 mrem/yr	SMC PTC
VOC[b]	NA	—	—	NA	0.048 ton/yr	SMC PTC

a. Total radionuclide emission in aggregate with all other INEEL sources must not exceed 10 mrem/yr.

b. VOC emission limit is aggregate for stacks 679-025, -026, and -027.

Figure VIII-2-26. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 679 - 027	South Process Area	TAN - 679	
MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED	
NA	NA	1986-1987	

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	DU Billets	Varies	Varies	Varies	—
PRODUCT OUTPUT	DU Parts	Varies	Varies	Varies	—
WASTE OUTPUT	DU Particulates	Varies	Varies	Varies	—
RECYCLE	—	Varies	Varies	Varies	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-26. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	None	—
INLET TEMPERATURE (°F)	70	—
PRESSURE DROP (INCHES H20)	5.0 max.	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.90	4857.36	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GASFLOW RATE (ACFM)	STACK EXIT TEMP (°F)
57	30	12,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide[a]	NA	—	99.97	NA	10 mrem/yr	SMC PTC
VOC[b]	NA	—	—	NA	0.048 ton/yr	SMC PTC

a. Total radionuclide emission in aggregate with all other sources must not exceed 10 mrem/yr.

b. VOC emission limit is aggregate for Stacks TAN-679-025, -026, and -027.

Figure VII-2-27. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A

GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 679 - 099	Welding Operations	TAN - 679	
MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED	
NA	NA	1985-1986	

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	NA	----	----	---	---
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-27. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	NA	NA
TYPE CODE (APPENDIX H)	---	---
MANUFACTURER	---	---
MODEL NUMBER	---	---
INLET TEMPERATURE (ºF)	---	---
PRESSURE DROP (INCHES H20)	---	---
WET SCRUBBER FLOW (GPM)	---	---
BAGHOUSE AIR/CLOTH RATIO (FPM)	---	---

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.96	4857.37	02

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
53	24	11,000	370

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Particulate	NA	—	—	—	0.001 ton/yr	SMC PTC

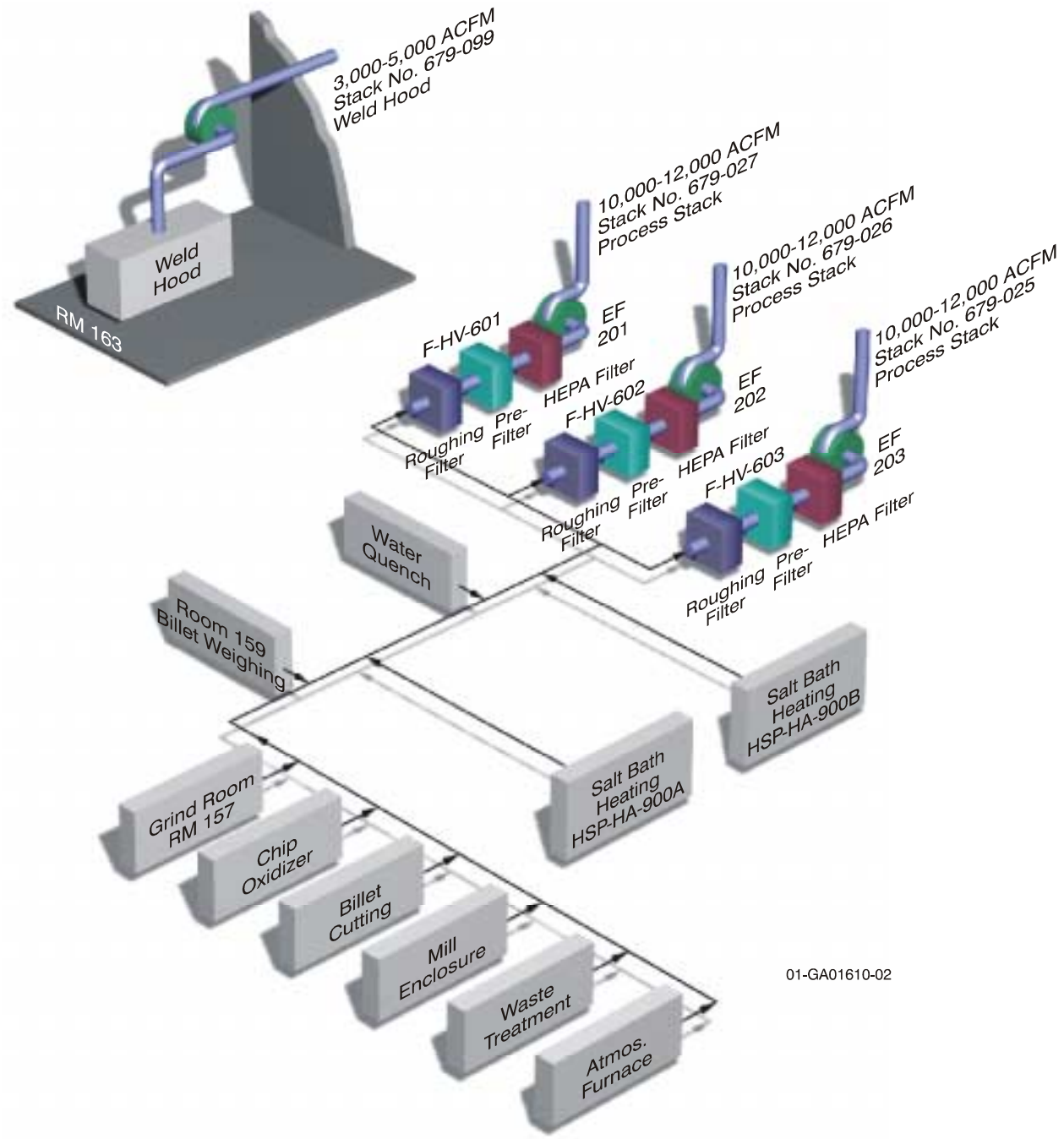

Figure VII-2-28. Process flow diagram for the rolling operations South Process.

Emission Point Number TAN-679-025, -026, and –027

REQUIREMENT 1

Requirement: Emissions from Stacks TAN-679-025, -026, -027 shall not exceed 10 mrem/yr.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Units processed. Calculated emissions.

Frequency of recordkeeping (how often data recorded): Annually.

REPORTING

Generally describe what is reported: Effective dose equivalent to the INEEL maximally exposed individual from all INEEL radiological emission sources.

Frequency of reporting: Annually

Beginning date: June 30, 1990

Figure VII-2-29. Compliance Certification Form (method of compliance).

Emission Point Number TAN-679-025, -026, and –027

REQUIREMENT 2

Requirement: Install, operate, and/or maintain HEPA filtration units at an operational efficiency of no less than 99.97% in filtration of particulates.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Monitoring and Recordkeeping

REFERENCE TEST METHOD

Reference test method description: HEPA filter efficiency testing is done upon installation of a new unit, and at least annually thereafter, according to the standard test methods set forth in ANSI N510-89, sections 10.4 & 10.5. Certified HEPA filters are tested and shown to have removal efficiencies of no less than 99.97%. Those filters demonstrating efficiencies less than this are replaced within 10 days (as specified by permit requirements) or prior to restart of a nonoperating process. All newly installed filters are pretested and certified prior to installation. Procedures are maintained that specify the conditions requiring changeout of the HEPA filters.

Reference test method citation: ANSI N510, Sections 10.4 & 10.5

MONITORING

Monitoring device type: Pressure differential gauge or sensor

Monitor location description: At filter stages

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: All HEPA filters shall be monitored for pressure drop to ensure operation and maintenance of certified HEPA filter stages at a maximum pressure drop of 5.0 inches water column. All certified HEPA filter stages shown to have a pressure drop of greater than 5.0 inches water column are replaced within 10 working days or prior to restart of a nonoperating process.

RECORDKEEPING

Data (parameter) being recorded: The dates and results of all efficiency tests using the ASME N510 test method, the dates of replacement of HEPA filter elements, and daily pressure drop measurements across the certified HEPA filter.

Frequency of recordkeeping (how often data recorded): Daily or as required to maintain efficiency of HEPA filters.

REPORTING

Generally describe what is reported: Provide statement to DEQ that all requirements of Appendix B of SMC PTC have been met.

Frequency of reporting: Quarterly.

Beginning date: TBD

Figure VII-2-29. (continued).

emission Point Number TAN-679-025, -026, and –027

REQUIREMENT 3

Requirement: Emissions from Stacks TAN-679-025, -026, and -027 shall not exceed 0.048 ton/yr VOC.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping and calculations

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: VOCs

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Number of units processed during year. Hours of operation. Calculated emissions.

Frequency of recordkeeping (how often data recorded): As needed to record throughput and calculate emissions on an annual basis.

REPORTING

Generally describe what is reported: Estimated emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-29. (continued).

Emission Point Number TAN-679-025, -026, and –027

REQUIREMENT 4

Requirement: Process less than 54 parts per 10-hour shift for research and development production or 125 parts per 10-hour shift for regular production.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Number of units processed. Hours of operation.

Frequency of recordkeeping (how often data recorded): Once per shift.

REPORTING

Generally describe what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-2-29. (continued).

Emission Point Number TAN-679-099

REQUIREMENT

Requirement: Emissions shall not exceed 1 E-03 ton/yr PM/PM-10.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: PM/PM-10

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amount (lbs.) of weld rod materials used per calendar year.

Frequency of recordkeeping (how often are data recorded): As required to keep logs accurate and up to date and to calculate annual emissions. These records shall be maintained on-site for two years.

REPORTING

General description of what is reported: Estimated Emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-30. Compliance Certification Form (method of compliance).

2.4.3 TAN-679 North Process Specific Information

The North Process is a continuation of the rolling mill operations in the South Process area. A continuous automated roller conveyor system transfers material from one area into the next. The material is sheared to size, heated, leveled, cleaned with high pressure water jet system and inspected.

Excess DU material is collected in containers and stored in sealed containers at SMC warehouses until shipment for recycling. See Figures VII-2-31, VII-2-32, and VII-2-33 for the State Operating Permit Application Forms.

2.4.3.1 Process Description. The rolled material from the TAN-679 South Process are moved to the North Process shearing station by an automated conveyor system. Figure VII-2-34 is a process flow diagram for TAN-679. The parts are sheared to size, heated, leveled, cleaned with high pressure water jet system and inspected. In addition a production laser is located within the North Process Area to support operations. This laser is used to cut carbon and stainless steel only.

Because North Process operations involve DU material, all emissions are vented through certified HEPA filters prior to discharge to the environment in order to minimize radionuclide particulate emissions. North Process emissions vent through Stacks TAN-679-022, -023, and -024 which are subject to various permit emission limitations. The exhaust fans to all three stacks are normally operated simultaneously. Radionuclide, PM-10, and VOC pollutants are regulated through PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC).

HEPA Filtration—HEPA filtration is considered to be an industry-wide best available control technology for the removal of airborne particulate material regardless of aerodynamic size. In order to minimize potential radionuclide emissions from facility stacks, the TAN-679 North Process utilizes a HEPA filtration system for each stack, which consists of roughing filters, prefilters and a particulate collection efficiency-certified HEPA filter connected in series to provide positive control of radionuclide particulate emissions from North Process operations.

The HEPA filtration system for Stacks TAN-679-022, -023, and -024 treats North Process exhaust air by ducting flow through HEPA filter banks consisting of 16 roughing filters, 16 prefilters and 16 certified HEPA filters per bank. The maximum volumetric flow rate through each filter bank is 16,000 cfm. The certified HEPA filtration system for North Process operations is the primary piece of equipment that ensures abatement of particulate emissions from SMC Stacks TAN-679-022, -023, and -024. Air entering the filtration unit first passes through the roughing filters and prefilters where approximately 30% of the particulates are removed. Following the prefilters the air passes through banks of certified HEPA filters that remove 99.97% of particles with a diameter of 0.3 microns.

The operational flow rate for the Stacks TAN-679-022, -023, and -024 HEPA filtration system is 11,200 to 16,000 cfm per stack. The point for compliance determination for North Process emissions is Stacks TAN-679-022, -023, and –024 HEPA filtration.

Annual Collection Efficiency Testing—In-place particulate collection efficiency testing is performed at least once every 12 months and within 90 days following filter replacement of the certified HEPA filters on Stacks TAN-679-022, -023, and -024. This testing ensures that HEPA filtration efficiency is maintained at or above 99.97%. If a testable HEPA filter falls below a 99.97% particulate removal efficiency, replacement of the filter occurs within 10 days.

Daily Pressure Drop Monitoring—SMC personnel read and record the pressure drop across the certified HEPA filter bank daily using installed pressure monitoring devices and the air flow readings of

the associated HVAC fans. This monitoring is intended to detect breaches or loading of the HEPA filter that might adversely affect particulate collection performance. The certified HEPA filters operate within a specific range. If the pressure drop across the certified HEPA filter is outside the specified range, the filter is replaced within 10 days.

The installed HEPA filter differential pressure instrumentation and exit flow velocity indicators are calibrated annually. Abnormal calibration readings are repaired as soon as practicable.

Periodic Radiation Monitors—A continuous radionuclide emission monitor operates at Stacks TAN-679-022, -023, and -024 as an SMC best operating practice. Such monitors, which are not required by any currently applicable regulation, standard, or permit conditions, would be operated nonisokinetically in general (but not necessarily strict) adherence with requirements such as those identified in 40 CFR 61.93 and ASME N13.1. Because current monitoring is not isokinetic it cannot be used to demonstrate continuous compliance. Data collected by these monitors will be used comparatively with previously recorded stack emissions to detect general trends or periodic deviations in actual radionuclide emissions.

2.4.3.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from Stacks TAN-679-022, -023, and -024, which comprise Shearing Operations, Leveling, and Cleaning in the TAN-679 North Process area. The quantities listed for radionuclides represent maximum release limits based on the operating capacity of equipment located within this processing area. Radionuclide emissions from the TAN-679 North Process area are permitted by State of Idaho SMC PTC. The quantity listed for radionuclides represents a maximum bubbled cap permit emission limit for all radionuclide sources emitting from the Stacks TAN-679-022, -023, and -024 operations including Stack TAN-629-013.

Pollutant	CAS	Maximum annual emission	Criteria pollutant
Radionuclides	NA	0.1 mrem/yr[a]	—
Radionuclides	NA	10 mrem/yr[b]	—
PM/PM-10	NA	3.3E-09 ton/yr[c]	—
VOC	NA	0.004 ton/yr[c]	—

a. This source in aggregate with sources Stacks TAN-679-022, -023, -024, and TAN-629-013 are limited by the bubbled emission cap.
b. In aggregate with all other INEEL radiological emission sources.
c. Sources Stacks TAN-679-022, -023, and -024.

2.4.3.3 Compliance Requirements.

2.4.3.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following data includes SMC PTC limits with which this source must maintain compliance.

Pollutant	CAS	Permit limit or cap
Radionuclides	NA	0.1 mrem/yr[a]
Radionuclides	NA	10 mrem/yr[b]
PM/PM-10	NA	3.3E-09 ton/yr[c]
VOC	NA	0.004 ton/yr[c]

a. This source in aggregate with sources Stacks TAN-679-022, -023, -024, and TAN-629-013.
b. In aggregate with all other INEEL radiological emission sources.
c. Sources Stacks TAN-679-022, -023, and -024

2.4.3.3.2 Existing Permit Requirements—SMC TAN-679 North Process Line emissions are regulated by State of Idaho PTC conditions specified in SMC PTC. Emissions from the North Process area are initially processed through a set of prefilter banks before transmitting to a set of certified HEPA filters (99.97%) prior to being released to the atmosphere. This permit also contains the following additional permit requirements:

Currently, SMC PTC limitations for Stacks TAN-679-022, -023, -024 and TAN-629-013 are:

1. Emissions from Stacks TAN-679-022, -023, and -024 shall not exceed:

Radionuclides	0.1 mrem/yr (includes Stack TAN-629-013 emissions)
PM/PM-10	3.3 E-09 ton/yr
VOC	0.004 ton/yr.

2. These sources shall operate within the requirements of the EPA National Emission Standards for radionuclide emissions from DOE Facilities (40 CFR 61.90).

3. Radionuclide emissions from Stacks TAN-679-022, -023, -024 and TAN-629-013 shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater then 10 millirems per year effective dose equivalent.

4. The permittee shall monitor the Stacks TAN-679-022, TAN-679-023, and TAN-679-024 HEPA filters as specified below.

   a. The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter, the first within 90 days of startup and at least every 12 months thereafter. Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test." In addition, an in-place ASME N510 efficiency test shall be conducted within 90 days of the date that the certified HEPA filter is replaced or installed.

   b. A pressure monitoring device shall be maintained to enable monitoring of pressure drop across each certified HEPA filter bank. The pressure drop monitoring equipment

shall be maintained in good working order. Pressure drop shall be checked daily when the HEPA filter is in use.

c. Certified HEPA filter efficiency shall be maintained at or above 99.97% removal efficiency as determined by the guidelines of ASME N510, Section 10.

d. Certified HEPA filter elements shall be replaced within 10 days if the removal efficiency falls below 99.97% as determined by ASME N510, Section 10.

e. Each certified HEPA filter shall be operated at a pressure drop that is limited to less than 5.0 inches of water column. The total pressure drop shall never exceed 5.0 inches of water column.

f. If the pressure drop across the certified HEPA filter exceeds 5.0 inches water column, the filter shall be replaced within 10 days of the exceedance.

g. Within 90 days of issuance, the permittee shall submit to DEQ an operating and maintenance manual which describes the procedures which will be followed to ensure compliance with the above permit conditions.

h. Within 90 days of issuance, the permittee shall submit to DEQ a quality assurance program which defines methods and procedures that will be used to ensure that quality and representative data is collected while performing in-place HEPA filter tests and while measuring pressure drops across HEPA filters.

i. The permittee shall not process more than 54 parts per 10-hour shift for research and development production or 125 parts per 10-hour shift for regular production.

j. The results of the initial performance test of the HEPA filter shall be reported to DEQ within 30 days of performing the test.

k. The permittee shall submit to DEQ a quarterly report based on a quarter calendar year and due 30 days after the end of each quarter, stating that all the requirements of Appendix A of the SMC PTC have been met.

In addition, records of the following information shall be kept on site and shall be made available for DEQ upon request:

- The dates and results of all efficiency tests using the ASME N510 test method
- The dates of replacement of HEPA filter elements
- Daily pressure drop measurements across the certified HEPA filter.

2.4.3.3.3 Other Enforceable Requirements—Because SMC North Process rolling mill operations are potential emitters of radionuclides, the EPA Region X approved a request to construct and operate this source under NESHAP, on October 22, 1990. This approval allowed the SMC Project to operate North Process manufacturing in accordance with 40 CFR 61.07. Periodic confirmatory measurements must be conducted in accordance with 40 CFR Part 61.93 (b) to determine radionuclide emissions used to demonstrate compliance with emissions limits. All emissions from this source must be included in the facility-wide INEEL annual NESHAPS report (40 CFR Part 61.94) and records supporting

the emissions measurements must be kept as stated in 40 CFR Part 61.95. See compliance methodology form in Volume I, Section 5.5.1.2.2.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.4.3.4 Compliance Methodology and Status.

2.4.3.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit that does not contain a more detailed schedule, this source will meet the applicable requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit that contains a more detailed schedule, this source will comply with the applicable requirement on the schedule specified in the requirement.

2.4.3.4.2 Compliance Methodology Forms—SMC complies with the emission limit requirements from HEPA filters by operating their facilities according to the methods and procedures outlined in the listed permit regarding HEPA filter efficiency testing, daily pressure checking and logging, and reporting results of these activities. The compliance methodology form, as requested by the State of Idaho for demonstrating compliance with the above-listed HEPA requirements, is included in Figure VII-2-35. The compliance methodology form for the NESHAP 10-mrem aggregate limit is in Volume I, Section 5.5.1.2.2.

2.4.3.5 Emission Calculations. This section provides a description of calculation methodologies used to show compliance with permit limits and to determine emissions in the annual NESHAP report.

2.4.3.5.1 Nonradionuclide Emissions—

VOC Emission Calculations Methodology:

Calculation:

Resuspension factor × Amount of acetone and ethanol used = VOC emissions

Where:

Resuspension factor is from PSD/PTC (100%)

PM/PM-10 Emission Calculations Methodology:

PM/PM-10 emissions are primarily a result of analytical processes using heating. Ash is the primary source of PM/PM-10. Emissions are calculated using the following equation:

Calculation:

$$\frac{\text{Resuspension factor} \times \text{Amount of Aluminum oxide used}}{\text{Annual hours of operation}} = \text{PM/PM} - 10 \text{ emission rate}$$

Where:

Resuspension factors from PSD/PTC (100%)

Total annual PM/PM-10 is determined by total of all Aluminum oxide used during year.

2.4.3.5.2 Radionuclide Emissions—Radionuclide emissions from this source are calculated on a level-of-effort basis identified as Method II: Possession Quantity Techniques found in Appendix E of Volume I.

Mitigation factor = (1- 0.9997)

Figure VII-2-31. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A

GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 679 - 022	North Process Area	TAN - 679	
MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED	
NA	NA	1986-1987	

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	DU Billets	Varies	Varies	Varies	—
PRODUCT OUTPUT	DU Parts	Varies	Varies	Varies	—
WASTE OUTPUT	DU Particulates	Varies	Varies	Varies	—
RECYCLE	—	Varies	Varies	Varies	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-31. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	None	—
INLET TEMPERATURE (ºF)	70	—
PRESSURE DROP (INCHES H20)	5.0 max.	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.91	4857.38	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
57	30	16,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide	NA	—	99.97	NA	10 mrem/yr[a]	SMC PTC
VOC[b]	NA	—	—	NA	0.004 ton/yr	SMC PTC
PM/PM-10[b]	NA	—	99.97	NA	3.3 E-09 ton/yr	SMC PTC
Radionuclide	NA	—	99.97	NA	0.1 mrem/yr[c]	SMC PTC

a. This source in aggregate with all other INEEL radiological sources must not exceed 10 mrem/yr.

b. PM/PM-10 and VOC emissions are aggregate for Stacks TAN-679-022, -023, and -024.

c. Emissions are aggregate for Stacks TAN 679-022, -023, -024, and Tan 629-013.

Figure VII-2-32. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 679 - 023	North Process Area Exhaust	TAN - 679	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	NA		1986-1987

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	DU Billets	Varies	Varies	Varies	—
PRODUCT OUTPUT	DU Parts	Varies	Varies	Varies	—
WASTE OUTPUT	DU Particulates	Varies	Varies	Varies	—
RECYCLE		Varies	Varies	Varies	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-32. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	None	—
INLET TEMPERATURE (°F)	70	—
PRESSURE DROP (INCHES H20)	5.0 max.	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.91	4857.38	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (°F)
57	30	16,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide	NA	—	99.97	—	10 mrem/yr[a]	SMC PTC
VOC[b]	NA	—	—	—	0.004 ton/yr	SMC PTC
PM/PM-10[b]	NA	—	99.97	—	3.3 E-09 ton/yr	SMC PTC
Radionuclide	NA	—	99.97	—	0.1 mrem/yr[c]	SMC PTC

a. This source in aggregate with all other INEEL radiological sources must not exceed 10 mrem/yr.

b. PM/PM-10 and VOC emission limit are aggregate for Stacks TAN-679-022, -023, and -024.

c. Emissions are aggregate for Stacks TAN 679-022, -023, -024, and Tan 629-013.

Figure VII-2-33. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 679 - 024	North Process Area Exhaust	TAN - 679	
MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED	
NA	NA	1986-1987	

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	DU Billets	Varies	Varies	Varies	—
PRODUCT OUTPUT	DU Parts	Varies	Varies	Varies	—
WASTE OUTPUT	DU Particulates	Varies	Varies	Varies	—
RECYCLE	—	Varies	Varies	Varies	—

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-33. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	None	—
INLET TEMPERATURE (°F)	70	—
PRESSURE DROP (INCHES H20)	5.0 max.	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.91	4857.37	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (°F)
57	30	16,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide	NA	—	99.97	NA	10 mrem/yr[a]	SMC PTC
VOC[b]	NA	—	—	NA	0.004 ton/yr	SMC PTC
PM/PM-10[b]	NA	—	99.97	NA	3.3 E-09 ton/yr	SMC PTC
Radionuclide	NA	—	99.97	NA	0.1 mrem/yr[c]	SMC PTC

a. This source in aggregate with all other INEEL radiological sources must not exceed 10 mrem/yr.

b. PM/PM-10 and VOC emission limits are aggregate for Stacks TAN-679-022, -023, and -024.

c. Emissions are aggregate for Stacks TAN 679-022, -023, -024, and Tan 629-013.

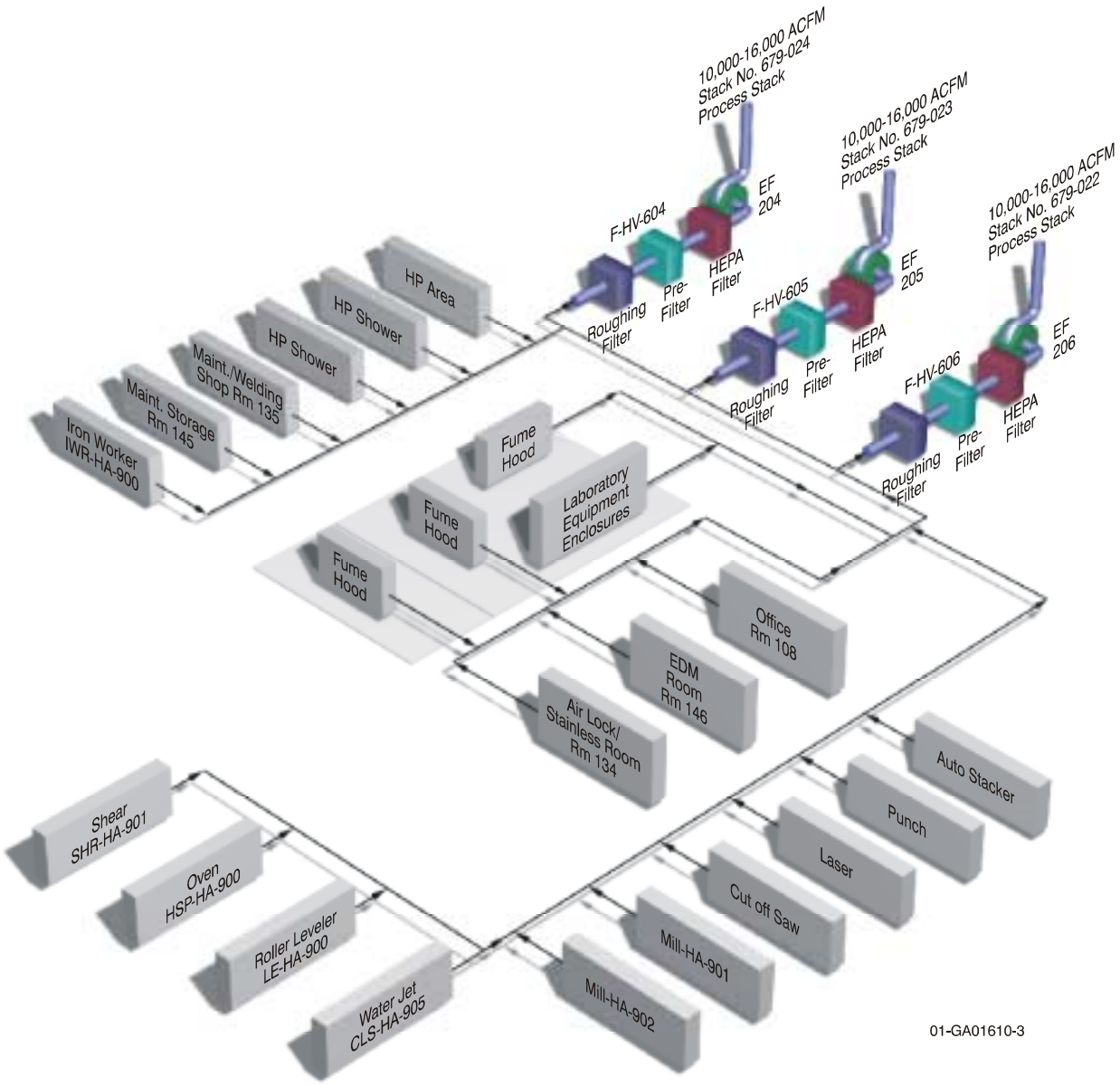

Figure VII-2-34. Process flow diagram for the rolling operations North Process.

Emission Point Number TAN-679-022, -023, and –024

REQUIREMENT 1

Requirement: Emissions from Stacks TAN-679-022, -023, -024, and TAN-629-013 shall not exceed 0.1 mrem/yr.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Units processed. Calculated emissions.

Frequency of recordkeeping (how often data recorded): Annually.

REPORTING

Generally describe what is reported: Effective dose equivalent to the INEEL maximally exposed individual from all INEEL radiological emission sources.

Frequency of reporting: Annually

Beginning date: June 30, 1990

Figure VII-2-35. Compliance Certification Form (method of compliance).

Emission Point Number TAN-679-022, -023, and –024

REQUIREMENT 2

Requirement: Install, operate, and/or maintain HEPA filtration units at an operational efficiency of no less than 99.97% in filtration of particulates.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Monitoring and Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: HEPA filter efficiency testing is done upon installation of a new unit, and at least annually thereafter, according to the standard test methods set forth in ASME N510-89, Sections 10.4 & 10.5. Certified HEPA filters are tested and shown to have removal efficiencies of no less than 99.97%. Those filters demonstrating efficiencies less than this are replaced within 10 days (as specified by permit requirements) or prior to restart of a nonoperating process. All newly installed filters are pretested and certified prior to installation. Procedures are maintained that specify the conditions requiring changeout of the HEPA filters.

Reference test method citation: ASME N510-89, Sections 10.4 & 10.5.

MONITORING

Monitoring device type: Pressure differential gauge or sensor.

Monitor location description: At filter stages.

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: All HEPA filters shall be monitored for pressure drop to ensure operation and maintenance of certified HEPA filter stages at a maximum pressure drop of 5.0 inches water column. All certified HEPA filter stages shown to have a pressure drop of greater than 5.0 inches water column are replaced within 10 working days or prior to restart of a nonoperating process.

RECORDKEEPING

Data (parameter) being recorded: The dates and results of all efficiency tests using the ASME N510 test method, the dates of replacement of HEPA filter elements, and daily pressure drop measurements across the certified HEPA filter.

Frequency of recordkeeping (how often data recorded): Daily or as required to maintain efficiency of HEPA filters.

REPORTING

Generally describe what is reported: Provide statement to DEQ that all requirements of Appendix B of permit have been met.

Frequency of reporting: Quarterly.

Beginning date: TBD

Figure VII-2-35. (continued).

Emission Point Number TAN-679-022, -023, and –024

REQUIREMENT 3

Requirement: Shall not exceed 54 parts per 10-hour shift for research and development production or 125 parts per 10-hour shift for regular production.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Parts produced.

Frequency of recordkeeping (how often data recorded): Monthly.

REPORTING

Generally describe what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-2-35. (continued).

2.4.4 TAN-679-067and -068 Specific Information

This section contains information on the TAN-679-067 and TAN-679-068 boiler room exhaust stacks. See Figure VII-2-36 and VII-2-37 for the state operating permit application forms for this source.

The TAN-679 boiler room is located adjacent to the TAN-679 Rolling Operations Facility on the north end. The TAN-679 boiler room houses all of the utility operations equipment for the TAN-679 manufacturing complex. Operational equipment primarily consists of boilers, standby power generators, soft water systems, and compressors for plant air systems. Emissions from these units are regulated through PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC).

2.4.4.1 Process Description. Two identical boilers, located in TAN-679, have a rated maximum heat input capacity of 25 million Btu/hr and operate as necessary to supply building heat and process steam to SMC fabrication and manufacturing facilities. Another small boiler with a 60 hp rating is normally operated during summer months only. The large boilers are each equipped with oxygen trim sensors to increase combustion efficiency. See process flow diagram (Figure VII-2-38) for these sources.

Each large boiler exhausts combustion gases through individually dedicated stacks. These stacks are identified as TAN-679-067 and TAN-679-068. Additionally, the small 60 hp boiler vents to Stack TAN-679-067. Emissions contain combustion by-products of No. 2 distillate fuel oil, which is the fuel currently used exclusively to fire the boilers at SMC. Emissions due to No. 2 distillate combustion includes NO_x, particulates, oxides of sulfur, and VOCs. Nominal air flow discharge rates from each of these stacks vary between 7,408 to 11,112 acfm at temperatures of 330–365°C, depending upon the level of boiler operations. No emissions are attributable to individual stacks when the respective boiler is not in service.

The No. 2 distillate fuel used by these boilers is stored in underground storage tanks and is pumped through piping to day tanks for subsequent use by the boilers. Because No. 2 distillate has a low vapor pressure, the fugitive emissions from the fuel transfer system are considered insignificant.

The following subsections discusses the controls used to limit emissions from these boilers.

2.4.4.1.1 Oxygen Trim (low excess air)—In the large SMC heating boilers, the fuel-air ratio is controlled by a microprocessor-based oxygen trim and annunciation system. The complete system includes equipment that senses several boiler operating parameters, an actuator system that trims either the air or fuel flow, and a console that is used to display information and generate control output.

The level to which the excess air can be reduced is usually limited by the onset of excessive carbon monoxide and smoke formation as a result of incomplete combustion. The oil-fired boilers at the SMC Project currently use the oxygen trim system for NO_x emission control. The manufacturer of the system guarantees a NO_x emission rate of 0.1225 lb/10^6 Btu based on a 30-day rolling average. This amounts to an 11% reduction of NO_x emissions relative to uncontrolled rates listed in EPA 625/5-86-020, July 1986, page 40.

2.4.4.1.2 Combustion of Low Sulfur No. 2 Fuel Oil—The No. 2 distillate fuel oil used in the SMC's boilers and standby generators is guaranteed by the contracted supplier to contain less than 0.5% sulfur by weight. The uncontrolled SO_2 emission rate resulting from the combustion of fuel oil with 0.5% sulfur is 0.50 lb/10^6 Btu for boiler operations.

Emissions from the TAN-679 boilers are calculated based on fuel throughput to the boiler combustion process. Throughput is measured using oil fuel flow meters. Readings are recorded twice per 12-hour shift for the active boiler. Readings are averaged over every month. These data are then used to calculate boiler emissions based on AP-42 emission factors.

2.4.4.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from Stacks TAN-679-067 and -068 as allowed under existing SMC PTC conditions. Please note that these emissions represent aggregate emissions from a total of two SMC Stacks, TAN-679-067 and -068.

Pollutant[a]	CAS	Maximum annual emission[b]	Criteria pollutant
PM/PM-10	—	2.21 tons/yr	X
SO_2	7446-09-5	79.33 tons/yr	X
CO	630-08-0	5.52 tons/yr	X
NO_x	—	22.13 tons/yr	X
VOC	—	0.223 ton/yr	X

a. All other nonradiological emissions from this source are addressed in Volume I as not- significant.
b. Emissions are an aggregate of both Stacks TAN-679-067 and –068.

2.4.4.3 Compliance Requirements.

2.4.4.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following data includes SMC PTC limits for which this source must maintain compliance.

All pollutants listed have existing permit limits.

Pollutant[a]	CAS	Emission limit[b]
PM/PM-10	—	2.21 tons/yr
SO_2	7446-09-5	79.33 tons/yr
CO	630-08-0	5.52 tons/yr
NO_x	—	22.13 tons/yr
VOC	—	0.223 ton/yr
Opacity	—	20%

a. All other nonradiological emissions from this source are addressed in Volume I, as not-significant.
b. Emissions are an aggregate of both Stacks TAN-679-067 and –068.

2.4.4.3.2 Existing Permit Requirements. The TAN SMC heating boilers are regulated by State of Idaho PTC conditions specified in SMC PTC.

1. Visible emissions from each boiler stack shall not exceed:

   20% opacity for 3 min during any 60-min period

2. The sulfur content of the Grade 2 fuel oil shall not exceed 0.5% by weight.

3. The permittee shall conduct a performance test, in accordance with the General Provision F of this (SMC PTC) permit, to measure sulfur dioxide emissions from one of the three boilers using EPA Reference Method 6 (40 CFR 60, Appendix A) or an equivalent method approved by the Department. The sulfur content of the fuel burned in the test shall be reported with the performance test results. Compliance testing was performed November 1992.

4. The performance test data and results as required in No. 3 above shall be reported to the Department within 30 days of performing the test. Test data was submitted to DEQ December 1992.

2.4.4.3.3 Other Enforceable Requirements—There are no other applicable requirements for this source.

2.4.4.4 Compliance Methodology and Status.

2.4.4.4.1 Compliance Plan—This source is in compliance, and will continue to comply, with the indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit that does not contain a more detailed schedule, this source will meet the applicable requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the applicable requirement on the schedule provided in the applicable requirement.

2.4.4.4.2 Compliance Methodology Forms—SMC complies with the emission limit requirements for this source by operating their facilities according to the methods and procedures outlined in the listed permit. VOC, PM/PM-10, NO_x, SO_2, and CO emissions are controlled by regulating the amount of fuel throughput into the boilers. Fuel throughput is metered during use and usage amounts are recorded during standard equipment checks. Data from these records are used to calculate emissions on an annual basis. Compliance certification forms , as requested by the State of Idaho for demonstrating compliance with the above-listed requirements, are included in Figure VII-2-39. For the opacity compliance methodology form, see Volume I, Section 5.1. For % sulfur in fuel requirement, see Volume I, Section 3.13.

2.4.4.5 Emission Calculations. The following section provides a description of calculation methodologies used to show compliance with permit limits.

2.4.4.5.1 Nonradionuclide Emissions—Nonradionuclide permitted emissions from SMC boilers consist of PM/PM-10, SO_2, CO, NO_x, and VOCs. Permitted limits for these constituents are stated above in Section 2.4.4.3.1. Calculation methodologies for these constituents are discussed in Volume I,

Appendix C. SMC has adopted these methodologies as the basis for calculating their boiler emissions. The Volume I methodologies are consistent with those methods previously and currently used by SMC to establish the bases for their boiler operation emissions sources.

Once the maximum fuel consumption has been determined, the annual emission may be calculated using the following equation:

Calculation:

Gal/yr(fuel) × AP-42 emission factor × Wc = yearly constituent emission (ton/yr).

Wc = Weight conversion (ton/2000 lbs)

2.4.4.5.2 Radionuclide Emissions—Not applicable; SMC boiler operations and associated equipment/systems are not a source of radionuclide emissions.

Figure VII-2-36. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION
TAN - 679 - 067	Boiler Stack	TAN - 679
MANUFACTURER	**MODEL**	**DATE INSTALLED OR LAST MODIFIED**
Cleaver Brooks	CB-500(100)600-150	April 1987

RATED CAPACITY (CHOOSE APPROPRIATE UNITS)

MILLION BTU/HOUR	OR	THOUSAND LBS/HR STEAM	OR	KILOWATTS	OR	HORSEPOWER
25.1						

BURNER TYPE	PERCENT USED FOR PROCESS	PERCENT USED FOR SPACE HEAT
10	10	90

(1) BURNER TYPES: 01) SPREADER STOKER, 02) CHAIN OR TRAVELING GRATE, 03) HAND FIRED, 04) CYLONE FURNACE, 05) WET BOTTOM (PULVERIZED COAL), 06) DRY BOTTOM (PULVERIZED COAL), 07) UNDERFEED STOKER, 08) TANGENTIALLY FIRED, 09) HORIZONTALLY FIRED, 10) AXIALLY FIRED, 11) OTHER (SPECIFY TO THE RIGHT):

FUEL DATA

PARAMETER	PRIMARY FUEL	UNITS	SECONDARY FUEL	UNITS
FUEL CODE (2)	02		—	
PERCENT SULFUR	0.5		—	
PERCENT ASH	—		—	
PERCENT NITROGEN	—		—	
PERCENT CARBON	—		—	
PERCENT HYDROGEN	—		—	
PERCENT MOISTURE	—		—	
HEAT CONTENT (BTU/UNIT)	140,000	Btu/gal	—	—
MAXIMUM HOURLY COMBUSTION RATE (UNITS/HR)	167.5	gallons/hr	—	—
NORMAL ANNUAL COMBUSTION RATE (UNITS/YR)	2.1E+06	gallons/yr	—	—

(2) FUEL CODES 01) NATURAL GAS, 02) #1 OR #2 FUEL OIL, 03) #4 FUEL OIL, 04) #5 FUEL OIL, 05) USED OIL, 06) WOOD CHIPS, 07) WOOD BARK, 08) WOOD SHAVINGS, 09) SANDER DUST, 10) SUBBITUMINOUS COAL, 11) BITUMINOUS COAL, 12) ANTHRACITE COAL, 13) LIGNITE COAL, 14) PROPANE, 15) OTHER (SPECIFY TO THE RIGHT):

a. The total fuel throughput for the two 25.1 Mbtu boilers was back calculated from the permitted emission limit for VOC-NM, less the contribution of VOC-NM emissions from the 60 HP boiler's potential to emit. This annual throughput represents the total estimated fuel consumption for the two 25.1 Mbtu boilers and the 60 HP boiler in aggregate.

Figure VII-2-36. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
41	27	5	27

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	39

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Oxygen Trim Sensor	NA
TYPE CODE (APPENDIX H)	033	—
MANUFACTURER	Cleaver Brooks	—
MODEL NUMBER	Data 1, System 2	—
INLET TEMPERATURE (ºF)	NA	—
PRESSURE DROP (INCHES H20)	NA	—
WET SCRUBBER FLOW (GPM)	NA	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	NA	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.96	4857.37	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
53	24	11,000	370

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	PERMITTED EMISSIONS[a] (LBS/HR)	PERMITTED EMISSIONS[a] (TONS/YR)	REFERENCE
Carbon monoxide	630-08-0	5 lb/1000 gal	—	NA	1.39	5.52	SMC PTC
Nitrogen oxides	NA	20 lb/1000 gal	—	NA	5.53	22.13	SMC PTC
PM/PM-10	NA	2 lb/1000 gal	—	NA	0.57	2.21	SMC PTC
Sulfur dioxide	7446-09-5	72 lb/1000 gal	—	NA	19.83	79.33	SMC PTC
VOC-nonmethane	NA	0.2 lb/1000 gal[b]	—	NA	0.056	0.22	SMC PTC

a. Emission limits are an aggregate of both Stacks TAN-679-067 and –068 and account for all three boilers.

b. 0.2 lb/1000 gal emission factor used 25 MBtu and 0.34 lb/1000 gal for the 60 hp boiler.

NOTE: The normal INEEL heating season is 39 weeks. The maximum schedule shown allows for flexibility for unusual weather and off-season maintenance.

Figure VII-2-37. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION
TAN - 679 - 068	Boiler Stack	TAN - 679
MANUFACTURER	**MODEL**	**DATE INSTALLED OR LAST MODIFIED**
Cleaver Brooks	CB-500(100)600-150	April 1987

RATED CAPACITY (CHOOSE APPROPRIATE UNITS)

MILLION BTU/HOUR	OR	THOUSAND LBS/HR STEAM	OR	KILOWATTS	OR	HORSEPOWER
25.1						

BURNER TYPE	PERCENT USED FOR PROCESS	PERCENT USED FOR SPACE HEAT
10	10	90

(1) BURNER TYPES: 01) SPREADER STOKER, 02) CHAIN OR TRAVELING GRATE, 03) HAND FIRED, 04) CYLONE FURNACE, 05) WET BOTTOM (PULVERIZED COAL), 06) DRY BOTTOM (PULVERIZED COAL), 07) UNDERFEED STOKER, 08) TANGENTIALLY FIRED, 09) HORIZONTALLY FIRED, 10) AXIALLY FIRED, 11) OTHER (SPECIFY TO THE RIGHT):

FUEL DATA

PARAMETER	PRIMARY FUEL	UNITS	SECONDARY FUEL	UNITS
FUEL CODE (2)	02		—	
PERCENT SULFUR	0.5		—	
PERCENT ASH	—		—	
PERCENT NITROGEN	—		—	
PERCENT CARBON	—		—	
PERCENT HYDROGEN	—		—	
PERCENT MOISTURE	—		—	
HEAT CONTENT (BTU/UNIT)	140,000	Btu/gal	—	—
MAXIMUM HOURLY COMBUSTION RATE (UNITS/HR)	167.5	gallons/hr	—	—
NORMAL ANNUAL COMBUSTION RATE (UNITS/YR)	2.1E+06	gallons/yr	—	—

(2) FUEL CODES 01) NATURAL GAS, 02) #1 OR #2 FUEL OIL, 03) #4 FUEL OIL, 04) #5 FUEL OIL, 05) USED OIL, 06) WOOD CHIPS, 07) WOOD BARK, 08) WOOD SHAVINGS, 09) SANDER DUST, 10) SUBBITUMINOUS COAL, 11) BITUMINOUS COAL, 12) ANTHRACITE COAL, 13) LIGNITE COAL, 14) PROPANE, 15) OTHER (SPECIFY TO THE RIGHT):

a. The total fuel throughput for the two 25.1 Mbtu boilers was back calculated from the permitted emission limit for VOC-NM, less the contribution of VOC-NM emissions from the 60 HP boiler's potential to emit. This annual throughput represents the total estimated fuel consumption for the two 25.1 Mbtu boilers and the 60 HP boiler in aggregate.

Figure VII-2-37. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
41	27	5	27

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	39

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	Oxygen Trim Sensor	NA
TYPE CODE (APPENDIX H)	033	—
MANUFACTURER	Cleaver Brooks	—
MODEL NUMBER	Data 1, System 2	—
INLET TEMPERATURE (ºF)	NA	—
PRESSURE DROP (INCHES H20)	NA	—
WET SCRUBBER FLOW (GPM)	NA	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	NA	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT(FEET)	BUILDING/AREALENGTH (FEET)	BUILDING/AREAWIDTH (FEET)
44	264	208

STACK DATA

GROUND ELEVATION(FT)	UTM XCOORDINATE (KM)	UTM YCOORDINATE (KM)	STACK[a] TYPE
4780	360.96	4857.37	03

STACK EXIT HEIGHTFROM GROUND LEVEL (FT)	STACK EXITDIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXITTEMP (ºF)
53	24	11,000	370

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	PERMITTED EMISSIONS[a] (LBS/HR)	PERMITTED EMISSIONS[a] (TONS/YR)	REFERENCE
Carbon monoxide	630-08-0	5 lb/1000 gal	—	NA	1.39	5.52	SMC PTC
Nitrogen oxides	NA	20 lb/1000 gal	—	NA	5.53	22.13	SMC PTC
PM/PM-10	NA	2 lb/1000 gal	—	NA	0.57	2.21	SMC PTC
Sulfur dioxide	7446-09-5	72 lb/1000 gal	—	NA	19.83	79.33	SMC PTC
VOC-nonmethane	NA	0.2 lb/1000 gal	—	NA	0.056	0.22	SMC PTC

a. Emission limits are an aggregate of both Stacks TAN-679-067 and –068 and account for all three boilers.

NOTE: The normal INEEL heating season is 39 weeks. The maximum schedule shown allows for flexibility for unusual weather and off-season maintenance.

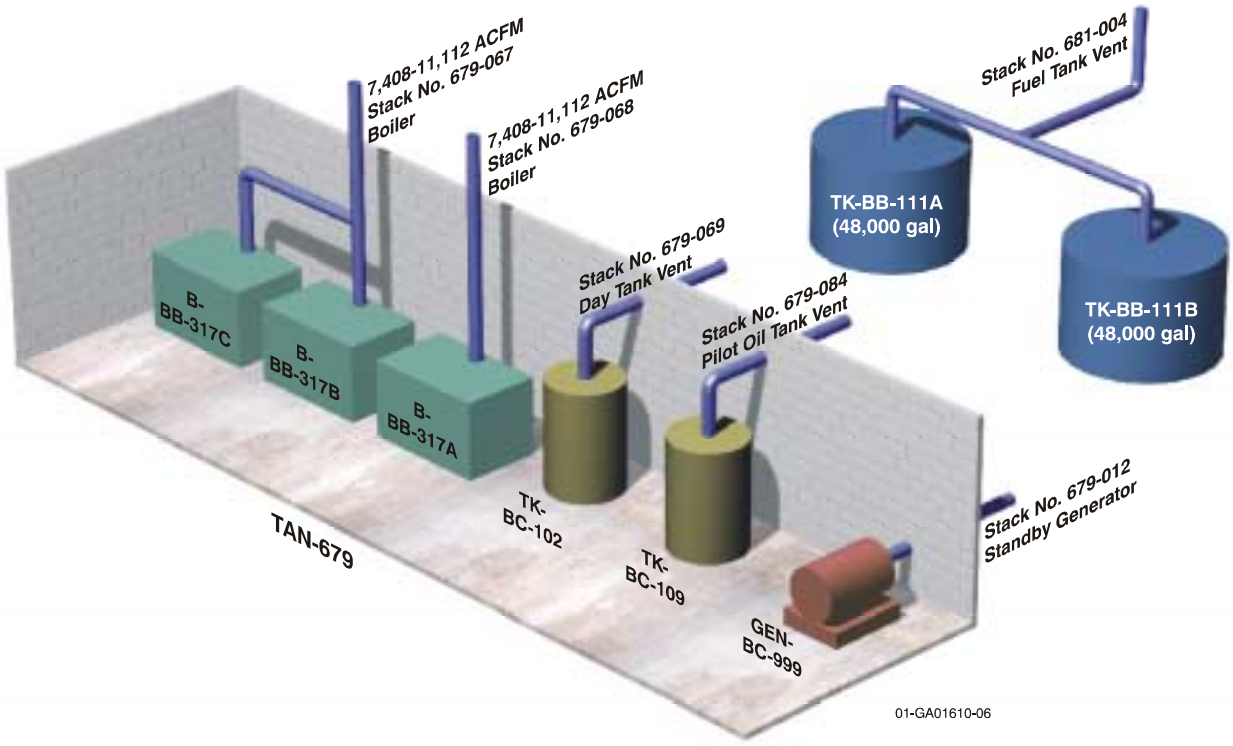

Figure VII-2-38. Process flow diagram for TAN-679.

Emission Point Number TAN-679-067 and –068

REQUIREMENT 1

Requirement: The sulfur content of the Grade 2 fuel oil shall not exceed 0.5% by weight.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Certification of sulfur content of fuel oil by vendor.

Frequency of recordkeeping (how often data recorded): Per batch basis.

REPORTING

Generally describe what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-2-39. Compliance Certification Form (method of compliance).

Emission Point Number TAN-679-067 and –068

REQUIREMENT 2

Requirement: Emissions from three boilers venting through Stacks TAN-679-067 and TAN-679-068 shall not exceed 0.056 lb/hr and 0.22 ton/yr VOC, 19.83 lb/hr and 79.22 ton/yr SO_2, 1.39 lb/hr and 5.52 ton/yr CO, 5.53 lb/hr and 22.13 ton/yr NO_x, and 0.57 lb/hr and 2.21 ton/yr PM/PM-10.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities Project," July 28, 2000.

Compliance method type: Recordkeeping and calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: VOCx, SO_2, CO, NO_x, and PM/PM-10

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amount of No. 2 fuel throughput during boiler operations.

Frequency of recordkeeping (how often data recorded): As needed to record fuel throughput and calculate emissions monthly.

REPORTING

Generally describe what is reported: Estimated emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-39. (continued).

2.5 TAN-681, Process Reclamation Facility

2.5.1 General Description

The TAN-681 Process Reclamation Facility (PRF) is located on the north end of the TAN-679 manufacturing operations area (Figure VII-2-40). TAN-681 processing facilities are ancillary to rolling and fabricating operations in TAN-679.

2.5.2 TAN-681 Specific Information

This section contains information about the TAN-681 Process Reclamation Facility. See Figures VIII-2-41 and VIII-2-41 for the State Operating Permit Application Form.

2.5.2.1 Process Description. Process wastewater from the north manufacturing area processes is diverted to the TAN-681-PRF for separation of wastes and reprocessing. Emission sources emanate from TAN-681, Stacks TAN-681-018 and TAN-681-020 (see Figure VII-2-43). These two stacks are primarily used to collect and filter ambient room process air. Emissions from TAN-681 PRF are regulated through PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC).

HEPA Filtration—HEPA filtration is considered to be an industry-wide best available control technology for the removal of airborne particulate material regardless of aerodynamic size. In order to minimize potential radionuclide emissions from facility stacks, the TAN-681 PRF utilizes a HEPA filtration system which consists of roughing filters, prefilters and a particulate collection efficiency-certified HEPA filter connected in series to provide positive control of radionuclide particulate emissions from TAN-681 PRF operations.

The HEPA filtration system for Stacks TAN-681-018 and -020 treats TAN-681 PRF exhaust air by ducting flow through HEPA filter banks consisting of 16 roughing filters, 16 prefilters, and 16 certified HEPA filters per bank. The maximum volumetric flow rate through each filter bank is 16,000 cfm. The certified HEPA filtration system for TAN-681 PRF operations is the primary piece of equipment that ensures abatement of particulate emissions from SMC Stacks TAN-691-018 and -020. Air entering the filtration unit first passes through the roughing filters and prefilters, where approximately 30% of the particulates are removed. Following the prefilters, the air passes through banks of certified HEPA filters that remove 99.97% of particles with a diameter of 0.3 microns.

The operational flow rate for the Stacks TAN-681-018 and -020 HEPA filtration system is 11,200 to 16,000 cfm per stack. The point for compliance determination for TAN-681 PRF emissions is Stacks TAN-681-018 and -020 HEPA filtration.

Annual Collection Efficiency Testing—In-place particulate collection efficiency testing is performed at least once every 12 months and within 90 days following filter replacement on the certified HEPA filters for Stacks TAN-681-018 and -020. This testing ensures that HEPA filtration efficiency is maintained at or above 99.97%. If a testable HEPA filter falls below a 99.97% particulate removal efficiency, replacement of the filter occurs within 10 days.

Daily Pressure Drop Monitoring—SMC personnel read and record the pressure drop across the certified HEPA filter bank daily using installed pressure monitoring devices and the air flow readings of the associated HVAC fans. This monitoring is intended to detect breaches or loading of the HEPA filter that might adversely affect particulate collection performance. The certified HEPA filters operate within a specified range. If the pressure drop across the certified HEPA filter is outside of the specified range, the filter is replaced within 10 days.

The installed HEPA filter differential pressure instrumentation and exit flow velocity indicators are calibrated annually. Equipment causing abnormal calibration readings is repaired as soon as practicable.

Periodic Radiation Monitors—A continuous radionuclide emission monitor operates at Stacks TAN-681-018 and -020 as an SMC best operating practice. Such monitors, which are not required by any currently applicable regulation, standard, or permit conditions, would be operated nonisokinetically in general (but not necessarily strict) adherence with requirements such as those identified in 40 CFR 61.93 and ANSI N13.1. Data collected by these monitors will be used comparatively with previously recorded stack emissions to detect general trends or periodic deviations in actual radionuclide emissions. Because current monitoring is not isokinetic it cannot be used to demonstrate continous compliance.

2.5.2.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from Stacks TAN-681-018, and -020, which comprise the emission units in the TAN-681 Process Reclamation Facility. The quantities listed for radionuclides represent maximum release limits based on the operating capacity of equipment located within this processing area. Radionuclide emissions from the TAN-681 PRF are permitted by State of Idaho SMC PTC. The quantity listed for radionuclides represents a maximum bubbled cap emission limit for all radionuclide sources at the INEEL.

Pollutant	CAS	Annual Maximum Emission	Criteria Pollutant
Radionuclides	N/A	10 mrem/yr[a]	—

a. This represents an aggregate emission limit for INEEL.

2.5.2.3 Compliance Requirements.

2.5.2.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho SMC PTC as specified in SMC PTC. The following data includes SMC PTC limits for which this source must maintain compliance.

Pollutant	CAS	Limit
Radionuclides	NA	10 mrem/yr[a]

a. This represents an aggregate emission limit for INEEL.

2.5.2.3.2 Existing Permit Requirements—SMC TAN-681 emissions are regulated by State of Idaho SMC PTC conditions specified in SMC PTC. Emissions from TAN-681 stacks are processed through a set of prefilter banks before entering into a set of certified HEPA filters (99.97%) prior to being released to the atmosphere. This permit contains the following additional permit requirements:

Currently, SMC PTC limitations for Stacks TAN-681-018, and -020 are:

1. This source shall operate within the requirements of the EPA National Emission Standards for radionuclide emissions from Department of Energy Facilities (40 CFR 61.90).

2. Radionuclide emissions from Stacks TAN-681-018, and -020 shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater then 10 millirems per year effective dose equivalent.

3. The permittee shall monitor the Stacks TAN-681-018 and -020 HEPA filters as specified below.

    a. The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter, the first within 90 days of startup and at least every 12 months thereafter. Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test." In addition, an in-place ASME N510 efficiency test shall be conducted within 90 days of the date that the certified HEPA filter is replaced or installed.

    b. A pressure monitoring device shall be maintained to enable monitoring of pressure drop across each bank of certified HEPA filters. The pressure drop monitoring equipment shall be maintained in good working order. Pressure drop shall be checked daily when the HEPA filter is in use.

    c. Certified HEPA filter efficiency shall be maintained at or above 99.97% removal efficiency as determined by the guidelines of ASME N510, Section 10.

    d. Certified HEPA filter elements shall be replaced within 10 days if the removal efficiency falls below 99.97% as determined by ASME N510, Section 10.

    e. Each certified HEPA filter shall be operated at a pressure drop that is limited to less than 5.0 inches of water column.

    f. Within 90 days of issuance the permittee shall submit to DEQ an operating and maintenance manual which describes the procedures which will be followed to assure compliance with the above permit conditions.

    g. Within 90 days of issuance, the permittee shall submit to the DEQ a quality assurance program that defines methods and procedures that will be used to ensure that quality and representative data is collected while performing in-place HEPA filter tests and while measuring pressure drops across HEPA filters.

    h. The results of the initial performance test of the HEPA filter shall be reported to the DEQ within 30 days of performing the test.

    i. The permittee shall submit to the DEQ a quarterly report based on a quarter calendar year and due 30 days after the end of each quarter, stating that all the requirements of Appendix B of the SMC PTC have been met.

j. In addition, records of the following information shall be kept on site and shall be made available for DEQ upon request:

- The dates and results of all efficiency tests using the ASME N510 HEPA Filter in-place test method
- The dates of replacement of HEPA filter elements
- Daily pressure drop measurements across the certified HEPA filter.

2.5.2.3.3 Other Enforceable Requirements—Because select SMC fabrication and processing operations are potential emitters of radionuclides, the EPA Region X approved a request to construct and operate this source under NESHAP, on October 22, 1990. This approval allowed the SMC Project to operate their manufacturing and processing systems in accordance with 40 CFR 61.07. Periodic confirmatory measurements must be conducted in accordance with 40 CFR Part 61.93 (b) to determine radionuclide emissions used to demonstrate compliance with emissions limit. All emissions from this source must be included in the facility-wide INEEL annual NESHAPS report (40 CFR Part 61.94) and records supporting the emissions measurements must be kept as stated in 40 CFR Part 61.95. See compliance methodology form in Volume I, Section 5.5.1.2.2.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.5.2.4 Compliance Methodology and Status.

2.5.2.4.1 Compliance Plan—This source is in compliance, and will continue to comply, with the indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the applicable requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the applicable requirement on the schedule provided in the applicable requirement.

2.5.2.4.2 Compliance Methodology Forms—SMC complies with the emission limit requirements from HEPA filters by operating their facilities according to the methods and procedures outlined in the listed permit regarding HEPA filter efficiency testing, daily pressure checking and logging, and reporting results of these activities. Compliance certification forms , as requested by the State of Idaho for demonstrating compliance with the above-listed requirements, are shown in Figure VII-2-44. The compliance methodology form for the NESHAP 10-mrem aggregate limit is in Volume I, Section 5.5.1.2.2.

2.5.2.4.3 Nonradionuclide Emissions—There are no nonradionuclide emissions from this source.

2.5.2.4.4 Radionuclide Emissions—Radionuclide emissions from this source are calculated on a level-of-effort basis identified as Method II: Possession Quantity Techniques found in Appendix E of Volume I.

Mitigation factor = (1- 0.9997)

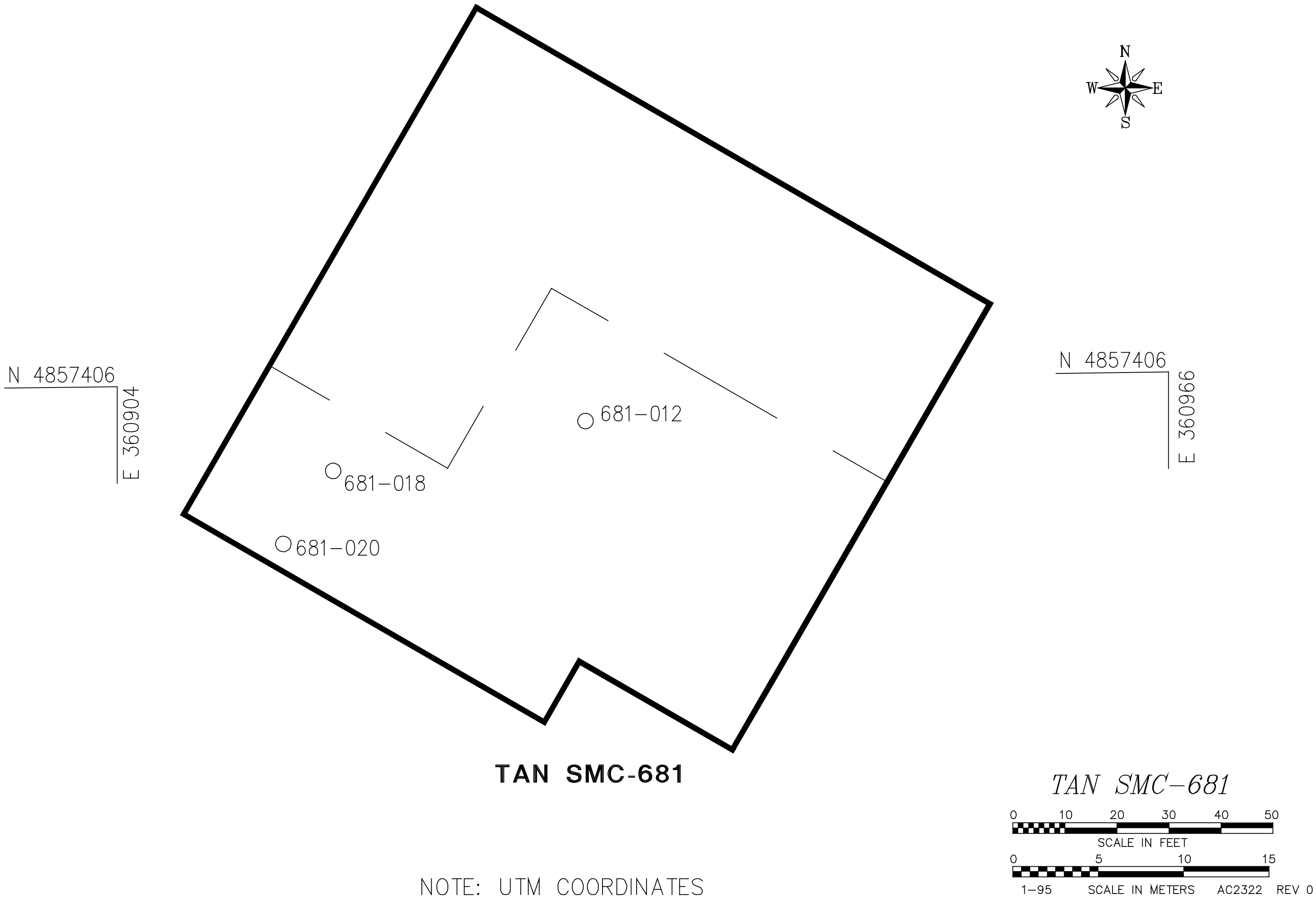

Figure VII-2-40. Building plan for TAN-681, Process Reclamation Facility.

Figure VII-2-41. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A

GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 681 - 018	TAN-681 Fugitive Emission Stack	TAN - 681	
MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED	
NA	NA	1986-1987	

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	Fugitive Emissions	—	—	—	—
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-41. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	—	—
INLET TEMPERATURE (ºF)	70	—
PRESSURE DROP (INCHES H20)	5.0 max.	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	112	112

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.91	4857.40	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
57	30	16,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide	NA	—	99.97	—	10 mrem/yr[a]	SMC PTC

a. Total radionuclide emissions from TAN-681 in aggregate with all other INEEL sources must not exceed 10 mr/yr.

Figure VII-2-42. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A

GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION
TAN - 681 - 020	TAN-681 Fugitive Emission Stack	TAN - 681
MANUFACTURER	**MODEL**	**DATE INSTALLED OR LAST MODIFIED**
NA	NA	1986-1987

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	Fugitive Emissions	—	—	—	—
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-2-42. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filters	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	—	—
INLET TEMPERATURE (°F)	70	—
PRESSURE DROP (INCHES H20)	5.0	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
44	112	112

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4780	360.91	4857.40	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (°F)
57	30	16,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide	NA	—	99.97	—	10 mrem/yr[a]	SMC PTC

a. Total radionuclide emissions from TAN-681 in aggregate with all other INEEL sources must not exceed 10 mr/yr.

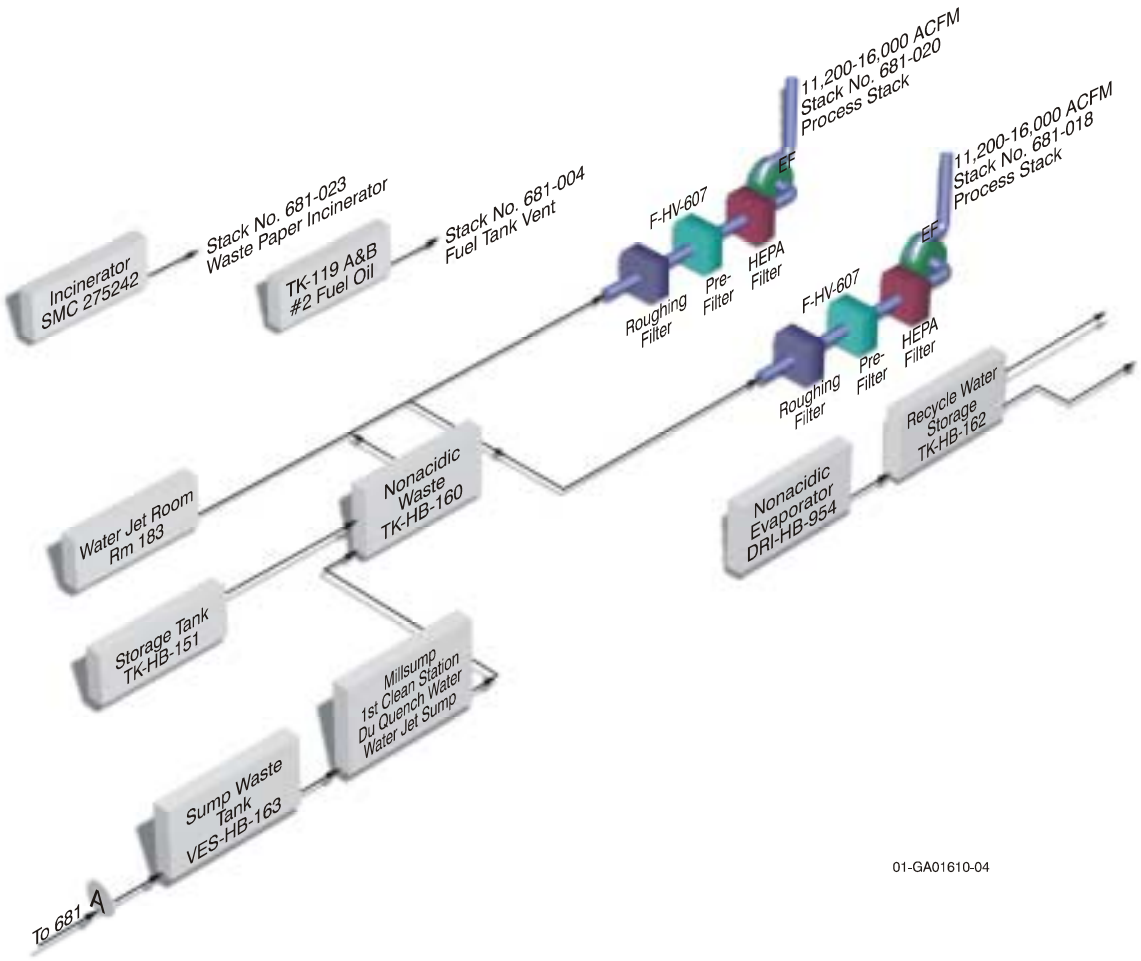

Figure VII-2-43. Process flow diagram for TAN-681.

Emission Point Number TAN-681-018 and -020

REQUIREMENT

Requirement: Install, operate, and/or maintain HEPA filtration units at an operational efficiency of no less than 99.97% in filtration of particulates.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Monitoring and recordkeeping.

REFERENCE TEST METHOD

Reference test method description: HEPA filter efficiency testing is done upon installation of a new unit, and at least annually thereafter, according to the standard test methods set forth in ASME N510-89, Sections 10.4 and 10.5. Certified HEPA filters are tested and shown to have removal efficiencies of no less than 99.97%. Those filters demonstrating efficiencies less than this are replaced within 10 days (as specified by permit requirements) or prior to restart of a nonoperating process. All newly installed filters are pretested and certified prior to installation. Procedures are maintained that specify the conditions requiring changeout of the HEPA filters.

Reference test method citation: ASME N510-89, Sections 10.4 and 10.5.

MONITORING

Monitoring device type: Pressure differential gauge or sensor.

Monitor location description: At filter stages.

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: All HEPA filters shall be monitored for pressure drop to ensure operation and maintenance of certified HEPA filter stages at a maximum pressure drop of 5.0 inches water column. All certified HEPA filter stages shown to have a pressure drop of greater than 5.0 inches water column are replaced within 10 working days or prior to restart of a nonoperating process.

RECORDKEEPING

Data (parameter) being recorded: The dates and results of all efficiency tests using the ASME N510 test method, the dates of replacement of HEPA filter elements, and daily pressure drop measurements across the certified HEPA filter.

Frequency of recordkeeping (how often data recorded): Daily or as required to maintain efficiency of HEPA filters.

REPORTING

Generally describe what is reported: Provide statement to DEQ that all requirements of Appendix B of permit have been met.

Frequency of reporting: Quarterly.

Beginning date: TBD

Figure VII-2-44. Compliance Certification Form (method of compliance).

Emission Point Number TAN-681-018 and –020

REQUIREMENT 2

Requirement: Emissions from Stacks TAN-681-018 and -020 shall not exceed 10 mrem/yr in aggregate with all other INEEL radiological emission sources.

Requirement basis: PTC 023-00001, “Specific Manufacturing Capabilities Project,” July 28, 2000.

Compliance method type: Recordkeeping calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: NA

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Units processed. Calculated emissions.

Frequency of recordkeeping (how often data recorded): Annually.

REPORTING

Generally describe what is reported: Effective dose equivalent to the INEEL maximally exposed individual from all INEL radiological emission sources.

Frequency of reporting: Annually

Beginning date: June 30, 1990

Figure VII-2-44. (continued).

2.6 SMC Incinerator Operations

2.6.1 General Description

SMC utilizes a small, multiple-chamber waste incinerator as part of its waste handling operations. This incinerator was permitted for operation by the State of Idaho on March 11, 1986. This incinerator was installed by SMC to destroy classified cold waste such as classified documents, typewriter ribbons, and computer diskettes. The location of the incinerator is identified in the overall site/facility plot in Section I (Figure VII-1-4) of this volume. Figure VII-2-45 is a plan view for this source. The incinerator is located northwest of the TAN-675 building at the Contained Test Facility where the main SMC production facilities are located.

2.6.2 Incinerator Specific Information

The small package waste incinerator, manufactured by Advanced Combustion Systems, is operated as a stand-alone treatment unit within the SMC facility and is not associated with SMC production operations. The waste incinerator is used to destroy paper, typewriter ribbons, and computer disks that contain classified or otherwise sensitive information. The types of wastes burned in this incinerator are designated as Type 0 (trash) and Type 1 (rubbish) waste. The incinerator has a dedicated discharge stack identified as TAN-681-023. See Figure VII-2-46 for the state operating permit application forms for this source.

The incinerator has a 18 ft 4 1/2 in. stack height with a 1 ft diameter. Expected HAPS associated with this unit include lead, arsenic and polycyclic aromatic hydrocarbons (PAHs).

2.6.2.1 Process Description. A small commercially-procured package incinerator is located outdoors on the SMC Program property approximately 20 meters northeast of building TAN-681. The purpose of the incinerator is to destroy classified paper, typewriter ribbons, and computer software, which are considered as Type 0 (trash) and Type 1 (rubbish) waste at SMC. The incinerator, a Model CAI-100-D, manufactured by Advanced Combustion Systems, Inc., has a rated capacity of 67 lb/hour for Type 0 waste and 100 lb/hour for Type 1 waste. The maximum single waste material charge is approximately 1 cubic yard. Liquefied petroleum gas is the primary fuel used to supplement incineration operations.

The incinerator consists of a primary chamber, which utilizes a combustion air blower, burner and reset air damper. A 500-gallon fuel tank provides liquid petroleum gas as auxiliary burner fuel for the incineration process. The efficiency of the incinerator is increased by a secondary chamber, which utilizes a blower and burner to serve as an afterburner. The incinerator has a dedicated discharge stack identified as TAN-681-023 with a nominal air flow rate range of 1160-1740 acfm.

The combustor is located on a permanent on-grade cement slab within the fenced perimeter of the SMC facility. The known emissions attributable to the SMC Waste Paper Incinerator and Stack TAN-681-023 are identified below.

State and federally permitted/controlled pollutants emitting from the SMC incinerator include PM/PM-10, SO_2, CO, VOC, and NO_x.

The basic flow of combustion gases is from the primary chamber of the incinerator to the ambient air and thus a flow diagram would not provide any additional valuable information, therefore one is not included in this document.

This is a starved air incineration unit; no dedicated operational pollution control equipment is associated with this incinerator. No dedicated emission monitoring equipment is operational on the incinerator unit.

2.6.2.2 Maximum Regulated Pollutant Emissions. The following regulated pollutants are potentially emitted from Stack TAN-681-023. The quantity listed for PM/PM-10 represent maximum release limits based on the emission rate limit of the incinerator. Nonradionuclide emissions from the TAN-681-023 stack are permitted by State of Idaho PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000 (SMC PTC).

Pollutant	CAS	Maximum annual emission[a]	Criteria pollutant
CO_x	630-08-3	0.15 ton/yr	X
NO_x	NA	1.07 tons/yr	X
PM-10	NA	0.91 ton/yr	X
SO_x	744-09-5	0.12 ton/yr	X
VOC	NA	0.04 ton/yr	X

a. Based on a total maximum heat input of 1,600,000 Btu/hr and maximum waste throughput

2.6.2.3 Compliance Requirements.

2.6.2.3.1 Permitted Emission Limits—This source operates under comprehensive emission limitations and operational requirements identified in State of Idaho PTC as specified in SMC PTC. The following table includes SMC PTC limits for which this source must maintain compliance.

Pollutant	CAS	Permit limit or cap
PM/PM-10	NA	0.2 lb/100 lb of refuse
Opacity	NA	20%

2.6.2.3.2 Existing Permit Requirements—SMC Stack TAN-681-023 incinerator emissions are regulated by State of Idaho SMC PTC conditions specified in SMC PTC. Emissions from the incinerator are released directly to the atmosphere. This permit also contains the following additional permit requirements.

SMC PTC limitations for Stack TAN-681-023 are as follows:

1. Emissions from Stack TAN-681-023 shall not exceed:

   – 0.2 lb particulate/100 lb refuse burned determined in accordance with EPA Reference Methods 1 through 5 upon request of the Department

   – 20% opacity for three minutes within one hour of operation.

2. This incinerator shall be operated and maintained as specified in the permit application package.

3. All personnel authorized to operate and/or maintain this incinerator shall be thoroughly trained and knowledgeable to perform their respective functions correctly as specified in the operating and maintenance section of the permit application package.

2.6.2.3.3 Other Enforceable Requirements—The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

2.6.2.4 Compliance Methodology and Status.

2.6.2.4.1 Compliance Plan—This source is currently in compliance and will continue to comply with all indicated applicable requirements as described in this application through the duration of the Tier I operating permit or until such a time as the applicable requirements may change. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the requirement on the schedule specified in the requirement.

2.6.2.4.2 Compliance Methodology Forms—PM/PM-10 emissions are complied with by following the permit requirements as noted above. Compliance certification forms , as requested by the State of Idaho for demonstrating compliance with the above-listed requirements, are included in the following pages. See Figure VII-2-47. The compliance methodology form for opacity is in Volume I, Section 5.1.

2.6.2.5 Emission Calculations. The following section provides a description of calculation methodologies used to demonstrate compliance with the permit limit.

2.6.2.5.1 Nonradionuclide Emissions—Stack TAN-681-023, as indicated above, has established permit limits identified in the SMC PTC. Nonradionuclide emission calculations from this source are demonstrated below.

PM/PM-10 Emissions Calculation Methodology:

Emission factor = 1.2 lb/T (based on source test in 1986 Incinerator PTC Application)

The method for calculating maximum emissions from fuel burning equipment was presented in Appendix C of Volume I

2.6.2.5.2 Radionuclide Emissions—There are no radionuclide emissions from this source.

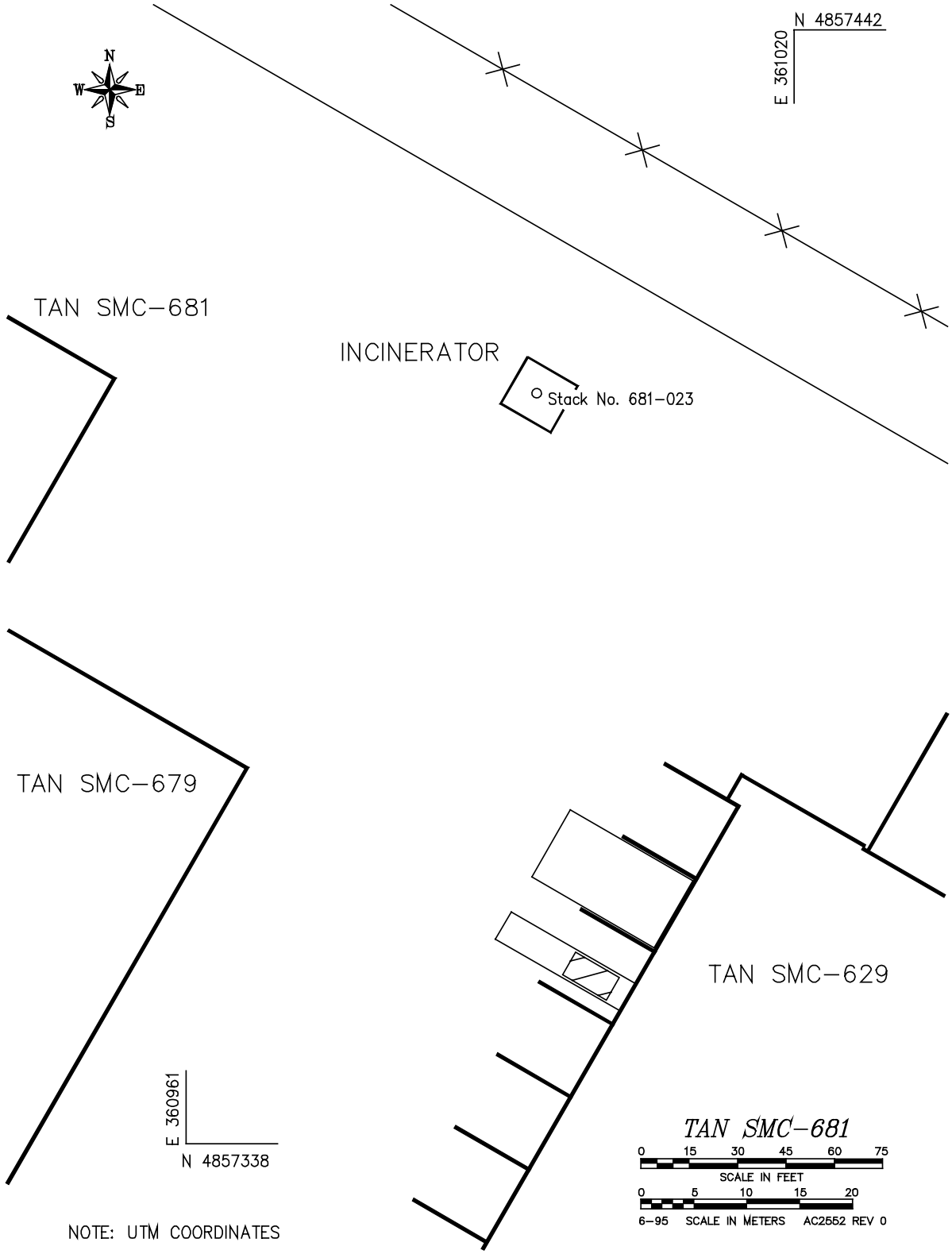

Figure VII-2-45. SMC Incinerator Plot Plan.

Figure VII-2-46. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	**DEQ PROCESS CODE**	**DEQ STACK ID CODE**	**DEQ BUILDING ID CODE**
PRIMARY SCC	**SECONDARY SCC**	**DEQ SEGMENT CODE**	

PART A

GENERAL INFOMATION

PROCESS CODE OR DESCRIPTION	**STACK DESCRIPTION**	**BUILDING DESCRIPTION**
TAN - 681 - 023	Incinerator Stack	**TAN - 681**
MANUFACTURER	**MODEL**	**DATE INSTALLED OR LAST MODIFIED**
Advanced Combustion Systems	CA-100-D	March 1986
INCINERATOR TYPE	**RATED HEATING CAPACITY MILLION BTU**	
05	0.8	

(1) INCINERATOR TYPES: 01) SINGLE CHAMBER, 02) MULTIPLE HEARTH, 03) ROTARY KILN, 04) FLUIDIZED BED, 05) OTHER (SPECIFY TO RIGHT): MULTIPLE CHAMBER

PRIMARY COMBUSTION CHAMBER DATA

WASTE RETENTION TIME (MINUTES)	**MINIMUM TEMPERATURE (DEG F)**	**COMBUSTION AIR FEED RATE (SCFM)**	**PERCENT OVERFIRE AIR**	**PERCENT UNDERFIRE AIR**	**GAUGE PRESSURE (INCHES H2O)**	BURNER TYPE (2)
120	800	291	NA	50	-0.15	02

(2) BURNER TYPES: 01) AXIAL FIRING, 02) RADIAL FIRING, 03) TANGENTIAL FIRING 04) OTHER (SPECIFY TO RIGHT):

PRIMARY CHAMBER FUEL DATA

PARAMETER	PRIMARY FUEL	UNITS	SECONDARY FUEL	UNITS
FUEL CODE (2)	05		NA	
PERCENT SULFUR	NA		NA	
PERCENT ASH	NA		NA	
PERCENT NITROGEN	NA		NA	
PERCENT CARBON	NA		NA	
PERCENT HYDROGEN	NA		NA	
PERCENT MOISTURE	NA		NA	
HEAT CONTENT (BTU.UNIT)	91,500	BTU/gal	NA	NA
MAXIMUM HOURLY COMBUSTION RATE (UNITS/HR)	1,600	cu ft/hr	NA	NA
NORMAL ANNUAL COMBUSTION RATE (UNITS/YR)	NA	—	NA	NA

(2) FUEL CODES 01) NATURAL GAS, 02) #1 OR #2 FUEL OIL, 03) #4 FUEL OIL, 04) #5 OR #6 FUEL OIL, 05) PROPANE, 06) OTHER (SPECIFY TO RIGHT):

Figure VII-2-46. (continued).

SECONDARY COMBUSTION CHAMBER DATA

COMBUSTION VOLUME CHAMBER (CUBIC FEET)	MINIMUM TEMPERATURE (DEG F)	COMBUSTION AIR FEED RATE (SCFM)	GAUGE PRESSURE (INCHES H2O)	BURNER TYPE (4)
3	1400	985	-0.15	02

(4) BURNER TYPES: 01) AXIAL FIRING, 02) RADIAL FIRING, 03) TANGENTIAL FIRING, 04) OTHER (SPECIFY TO RIGHT):

SECONDARY CHAMBER FUEL DATA

PARAMETER	PRIMARY FUEL	UNITS	SECONDARY FUEL	UNITS
FUEL CODE (2)	05		NA	
PERCENT SULFUR	NA		NA	
PERCENT ASH	NA		NA	
PERCENT NITROGEN	NA		NA	
PERCENT CARBON	NA		NA	
PERCENT HYDROGEN	NA		NA	
PERCENT MOISTURE	NA		NA	
HEAT CONTENT (BTU.UNIT)	91,500	Btu/gal	NA	NA
MAXIMUM HOURLY COMBUSTION RATE (UNITS/HR)	500	cu ft/hr	NA	NA
NORMAL ANNUAL COMBUSTION RATE (UNITS/YR)	NA	—	NA	NA

(2) FUEL CODES 01) NATURAL GAS, 02) #1 OR #2 FUEL OIL, 03) #4 FUEL OIL, 04) #5 OR #6 FUEL OIL, 05) PROPANE, 06) OTHER (SPECIFY TO RIGHT):

PRIMARY CHAMBER MONITORING AND COMBUSTION CONTROLS

Model CA-100D has a timer-controlled burner, which limits burn time to 2 hours for primary chamber.

SECONDARY CHAMBER MONITORING AND COMBUSTION CONTROLS

Model CA-100D has a timer-controlled burner, which limits burn time to 3 hours for secondary chamber.

Figure VII-2-46. (continued).

WASTE CHARACTERIZATION AND COMBUSTION RATES

PARAMETER	WASTE 1	UNITS	WASTE 2	UNITS
WASTE DESCRIPTION	Type 0		Type 1	
PERCENT SULFUR	—		—	
PERCENT ASH	5		10	
PERCENT NITROGEN	—		—	
PERCENT CARBON	—		—	
PERCENT HYDROGEN	—		—	
PERCENT OXYGEN	—		—	
PERCENT CHLORINE	—		—	
PERCENT MOISTURE	10		20	
HEAT CONTENT (BTU/UNIT)	8500	Btu/Lb	6500	Btu/lb
MAXIMUM HOURLY COMBUSTION RATE (UNITS/HR)	67	lb/hr	100	lb/hr
MAXIMUM DAILY COMBUSTION RATE (UNITS/DAY)	—	lb/day	—	lb/day
NORMAL ANNUAL COMBUSTION RATE (RATE/YR)	—	lb/yr	—	lb/yr
METHOD OF DISPOSAL:				

POTENTIAL HAPS IN WASTES

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN WASTE	FRACTION BOTTOM ASH	FRACTION IN FLY ASH
NA	NA	NA	NA	NA

Emission Point Number TAN-681-023

REQUIREMENT

Requirement: PM/PM-10 emissions from Stack TAN-681-023 shall not exceed 0.2 pound particulate per 100 pound refuse burned.

Requirement basis: PTC 023-00001, "Specific Manufacturing Capabilities (SMC) Project," July 28, 2000, and IDAPA 58.01.01.785.

Compliance method type: Recordkeeping and calculation.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated air pollutant being monitored: PM/PM-10

Generally describe the frequency and duration of sampling and how the data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amount of refuse burned/lb. Calculated emission.

Frequency of recordkeeping (how often data recorded): Record amount of refuse burned for each event and calculate emissions annually.

REPORTING

Generally describe what is reported: Estimated emissions

Frequency of reporting: Annual Air Emissions Inventory

Beginning date: NA

Figure VII-2-47. Compliance Certification Form (method of compliance).

3. SOURCE-SPECIFIC INFORMATION FOR OTHER TAN FACILITIES

3.1 TAN-603 Boilers

3.1.1 General Description

TAN-603 is a 10,045-ft^2, one-story pumice block building constructed in 1956, that houses the TAN facility medical dispensary, TSF-area boilers, a standby diesel generator (see Section 3.5) and associated underground fuel tank, soft water tanks, janitorial supplies, and material storage. The boiler room contains two boilers that are fueled by No. 2 fuel oil from bulk storage tanks at the TSF Tank Farm. The boilers provide steam heat to TSF facilities.

TAN-603 houses two identical 20.9 million Btu/hr boilers (Stacks TAN-603-027 and TAN-603-028) that were installed in 1992. Both boilers use No. 2 fuel oil supplied by tank TAN-704. Each boiler exhausts combustion gases through a dedicated stack.

The boilers are operated according to the facility heat demand. When the demand is high, all of the boilers may operate simultaneously. When the demand is low, the operation of one of the boilers is turned down or shut off to conserve fuel. The boilers do not operate continuously or at one set rate throughout the entire heating season. However, to provide operating flexibility, this operating permit conservatively estimates maximum emissions based on capacity boiler operations throughout the heating season.

The two 20.9 million Btu/hr boilers are regulated by PTC 023-00001, "Oil Fired Boilers #4 and #5, TAN-603 Building," May 14, 1998 (TAN Boilers PTC). The permit allows both boilers to operate at limited capacity. Figure VII-3-1 shows a plan view of TAN-603.

3.1.2 TAN-603-027 and -028 Specific Information

This section includes two identical boilers housed in TAN-603. They are combined in this section because they are both regulated by a single Idaho PTC 023-00001, "Oil Fired Boilers #4 and #5, TAN-603 Building," May 14, 1998. See Figures VII-3-2 and VII-3-3 for the state operating permit application forms for this source.

3.1.2.1 Process Description. TAN-603-027 and TAN-603-028 are the stack designations for two 20.9 million Btu/hr heat input boilers located in TAN-603. Both boilers were installed in 1992 and are covered by the same TAN Boilers PTC. Each boiler obtains No. 2 fuel oil from the TAN-704 tank and exhausts emissions through a dedicated stack. Each of the boilers may be operated alone, or both may be operated simultaneously depending upon the heating demands of the TSF area.

Figures VII-3-4 and VII-3-5 show the process flow diagrams for these sources. No emission monitoring equipment is required for the TAN-603 boilers. However, TAN Boilers PTC required the permittee to conduct a performance test on one of the boiler stacks to measure sulfur dioxide and visible emissions. The test was conducted and results demonstrating compliance with the permit emission limits were reported to the State on July 26, 1993.

Each of the TAN-603 boilers is equipped with a flow meter to enable operators to monitor fuel use.

3.1.2.2 Maximum Regulated Pollutant Emissions. The following data shows regulated pollutants potentially emitted from either the TAN-603-027 or TAN-603-028 boiler stacks. The quantities listed represent emission releases based on normal operating capacity associated with these emission points. These quantities are not enforceable limits, but merely an accounting of the potential pollutants associated with this source.

Pollutant[a]	CAS	Annual maximum emissions[b]	Criteria pollutant
CO_x	630-08-0	2.8 ton/yr	X
NO_x	NA	11.2 ton/yr	X
PM-10	NA	0.6 ton/yr	X
SO_x	7446-09-5	39.9 ton/yr	X
VOC	NA	0.1 ton/yr	X

a. All other nonradiological emissions from this source are addressed in Volume I as not-significant emissions.
b. Aggregate for both boilers.

3.1.2.3 Compliance Requirements.

3.1.2.3.1 Permitted Emission Limits—Emissions for Stacks TAN-603-027 and TAN-603-028 are regulated by State of Idaho TAN Boilers PTC. The following section shows the limits and conditions specified in the permit.

The following data is a listing of State of Idaho emission limits for Stacks TAN-603-027 and TAN-603-028 boilers that are specified in TAN Boilers PTC. Emission limits and monitoring, operating, and recordkeeping requirements specified in the TAN Boilers PTC are provided below.

Pollutant	CAS	Limit
Sulfur dioxide[a]	NA	39.9 ton/yr

a. Aggregate for both boilers.

3.1.2.3.2 Existing Permit Requirements

1. Visible emissions from the TAN-603-027 and TAN-603-028 boiler stacks shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period each as required in IDAPA 58.01.01201.

2. The sulfur content of the Grade 2 fuel oil shall not exceed 0.5% by weight as required by IDAPA 58.01.01.728 and 40 CFR 60.42c.

3. The permittees must require the vendor of the fuel oil to certify that each load has 0.5 weight percent or less of sulfur in accordance with 40 CFR Part 60, Subpart Dc.

4. No more than ninety-three thousand, three hundred thirty-three gallons per month (93,333 gal/mo) or one million, one hundred twenty thousand gallons per consecutive 12-month period (1,120,000 gal/yr) of fuel oil shall be burned in the boilers.

5. The permittee shall maintain records of the amount of fuel combusted in the boilers monthly and annually in gallons. These records shall be kept on-site for a two-year period and made available to DEQ representatives upon request.

3.1.2.3.3 Other Enforceable Requirements—State and federally enforceable requirements contained in 40 CFR Part 60, Subpart Dc, are not included in the TAN Boilers PTC requirements listed above.

Records of fuel supplier certifications are used to demonstrate compliance, and include: (1) The name of the oil supplier; and (2) A statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in §60.41c. In addition to records of fuel supplier certification, the report shall include a certified statement, signed by the owner or operator of the affected facility, that the records of fuel supplier certification submitted represent all of the fuel combusted during the reporting period. The reporting period for the reports required under this subpart is every six months. All reports shall be submitted to the EPA Region 10 Administrator and shall be postmarked by the 30th day following the end of the reporting period beginning October 31, 2000.

The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I, Section 5.1.

3.1.2.4 Compliance Methodology and Status

3.1.2.4.1 Compliance Plan—This source is in compliance and will continue to comply with the indicated applicable requirements as described in this application through the duration of the Tier 1 operating permit or until such a time as the applicable requirements may change. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the requirement on the schedule provided in the requirement.

3.1.2.4.2 Compliance Methodology Forms—See Figure VII-3-6.

3.1.2.5 Emission Calculations. The following section provides a qualitative description of calculations used to show compliance with permit limits.

3.1.2.5.1 Nonradionuclide Emissions—The method for calculating maximum emissions from boilers was presented in Appendix C of Volume I.

3.1.2.5.2 Radionuclide Emissions—There are no radionuclide emission sources at TAN-603.

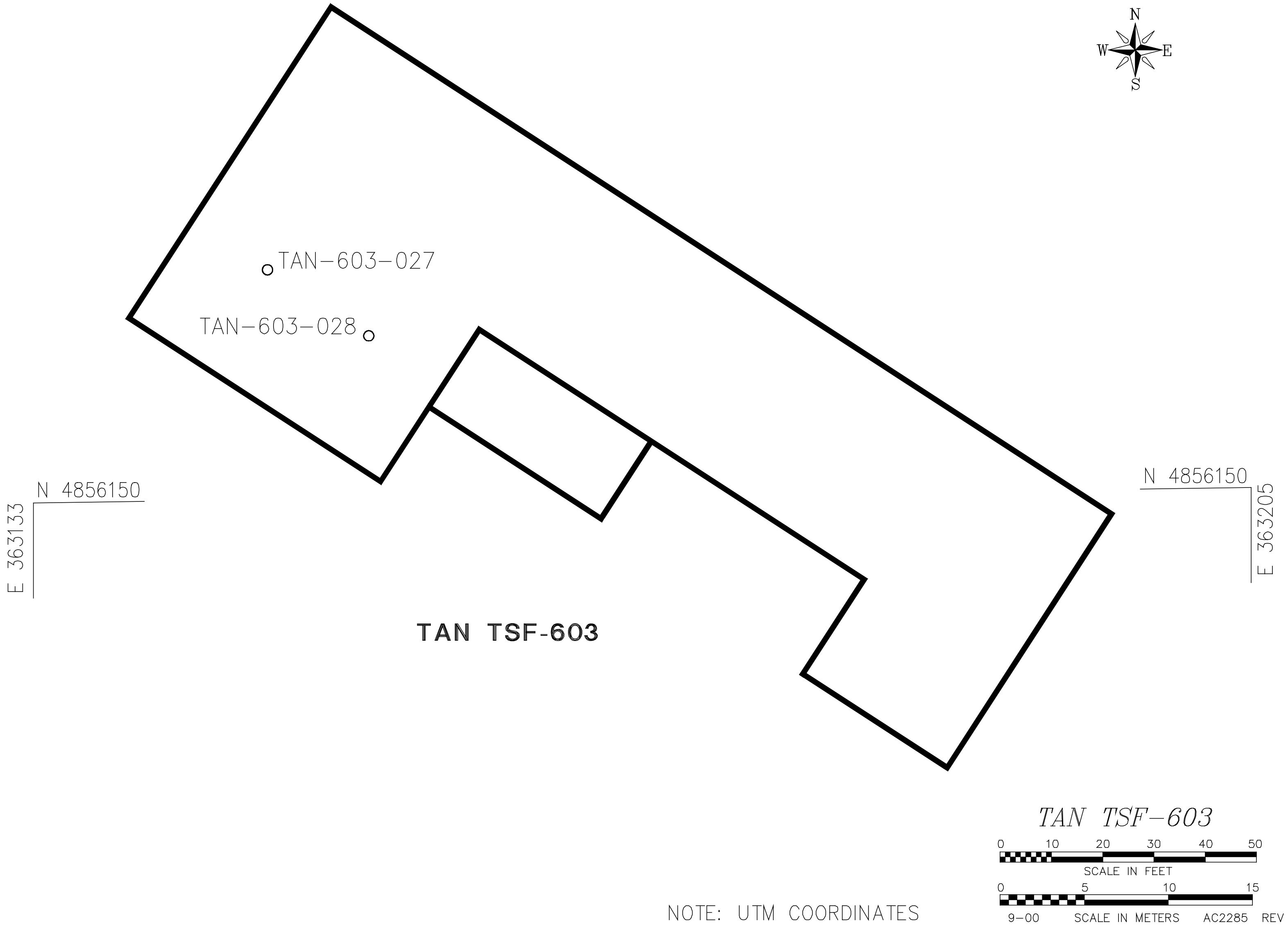

Figure VII-3-1. Plan view for TAN-603.

Figure VII-3-2. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION
TAN - 603 - 027	Boiler Stack	TAN - 603
MANUFACTURER	**MODEL**	DATE INSTALLED OR LAST MODIFIED
Cleaver Brooks	CB-600-500	1992

RATED CAPACITY (CHOOSE APPROPRIATE UNITS)

MILLION BTU/HOUR	OR	THOUSAND LBS/HR STEAM	OR	KILOWATTS	OR	HORSEPOWER
20.9						

BURNER TYPE	PERCENT USED FOR PROCESS	PERCENT USED FOR SPACE HEAT
10	0	100

(1) BURNER TYPES: 01) SPREADER STOKER, 02) CHAIN OR TRAVELING GRATE, 03) HAND FIRED, 04) CYLONE FURNACE, 05) WET BOTTOM (PULVERIZED COAL), 06) DRY BOTTOM (PULVERIZED COAL), 07) UNDERFEED STOKER, 08) TANGENTIALLY FIRED, 09) HORIZONTALLY FIRED, 10) AXIALLY FIRED, 11) OTHER (SPECIFY TO THE RIGHT):

FUEL DATA

PARAMETER	PRIMARY FUEL	UNITS	SECONDARY FUEL	UNITS
FUEL CODE (2)	02		—	
PERCENT SULFUR	0.5		NA	
PERCENT ASH	—		—	
PERCENT NITROGEN	—		—	
PERCENT CARBON	—		—	
PERCENT HYDROGEN	—		—	
PERCENT MOISTURE	—		—	
HEAT CONTENT (BTU/UNIT)	140,000	Btu/gal	—	—
MAXIMUM HOURLY COMBUSTION RATE (UNITS/HR)	139.5[a]	gallons/hr	—	—
NORMAL ANNUAL COMBUSTION RATE (UNITS/YR)	560000[a]	gallons/yr	—	—

(2) FUEL CODES 01) NATURAL GAS, 02) #1 OR #2 FUEL OIL, 03) #4 FUEL OIL, 04) #5 FUEL OIL, 05) USED OIL, 06) WOOD CHIPS, 07) WOOD BARK, 08) WOOD SHAVINGS, 09) SANDER DUST, 10) SUBBITUMINOUS COAL, 11) BITUMINOUS COAL, 12) ANTHRACITE COAL, 13) LIGNITE COAL, 14) PROPANE, 15) OTHER (SPECIFY TO THE RIGHT):

a. Allowable emissions are based on 1,120,000 gal/yr fuel consumption for both 603-027 and –028 stacks, actual max hourly rate = 139.5 gal/hr.

Figure VII-3-2. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
41	27	5	27

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	39

POLLUTION CONTROL EQUIPMENT
NOT APPLICABLE

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
17	180	70

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4790	363.15	4856.16	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (°F)
30	24	6900	380

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Carbon Monoxide	630-08-0	5 lb/1000 gal	—	2.8 ton/yr	—	—
Nitrogen Oxides	NA	20 lb/1000 gal	—	11.2 ton/yr	—	—
PM/PM-10	NA	2 lb/1000 gal	—	0.6 ton/yr	—	—
VOC	NA	0.34 lb/1000 gal	—	0.1 ton/yr	—	—
Sulfur Dioxide	7446-09-5	71 lb/1000 gal	—	39.9 ton/yr	39.9 ton/yr[a]	TAN Boilers PTC

a. Inclusive with Stack TAN-603-028.

Figure VII-3-3. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION
TAN - 603 - 028	Boiler Stack	TAN - 603

MANUFACTURER	MODEL	DATE INSTALLED OR LAST MODIFIED
Cleaver Brooks	CB-600-500	1992

RATED CAPACITY (CHOOSE APPROPRIATE UNITS)

MILLION BTU/HOUR	OR	THOUSAND LBS/HR STEAM	OR	KILOWATTS	OR	HORSEPOWER
20.9						

BURNER TYPE	PERCENT USED FOR PROCESS	PERCENT USED FOR SPACE HEAT
10	0	100

(1) BURNER TYPES: 01) SPREADER STOKER, 02) CHAIN OR TRAVELING GRATE, 03) HAND FIRED, 04) CYLONE FURNACE, 05) WET BOTTOM (PULVERIZED COAL), 06) DRY BOTTOM (PULVERIZED COAL), 07) UNDERFEED STOKER, 08) TANGENTIALLY FIRED, 09) HORIZONTALLY FIRED, 10) AXIALLY FIRED, 11) OTHER (SPECIFY TO THE RIGHT):

FUEL DATA

PARAMETER	PRIMARY FUEL	UNITS	SECONDARY FUEL	UNITS
FUEL CODE (2)	02		—	
PERCENT SULFUR	0.5		NA	
PERCENT ASH	—		—	
PERCENT NITROGEN	—		—	
PERCENT CARBON	—		—	
PERCENT HYDROGEN	—		—	
PERCENT MOISTURE	—		—	
HEAT CONTENT (BTU/UNIT)	140,000	Btu/gal	—	—
MAXIMUM HOURLY COMBUSTION RATE (UNITS/HR)	139.5[a]	gallons/hr	—	—
NORMAL ANNUAL COMBUSTION RATE (UNITS/YR)	560,000[a]	gallons/yr	—	—

(2) FUEL CODES 01) NATURAL GAS, 02) #1 OR #2 FUEL OIL, 03) #4 FUEL OIL, 04) #5 FUEL OIL, 05) USED OIL, 06) WOOD CHIPS, 07) WOOD BARK, 08) WOOD SHAVINGS, 09) SANDER DUST, 10) SUBBITUMINOUS COAL, 11) BITUMINOUS COAL, 12) ANTHRACITE COAL, 13) LIGNITE COAL, 14) PROPANE, 15) OTHER (SPECIFY TO THE RIGHT):

a. Estimated emissions are based on 1,120,000 gal/hr fuel consumption for both 603-027 and –028 stacks, actual max hourly rate = 139.5 gal/hr.

Figure VII-3-3. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
41	27	5	27

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	39

POLLUTION CONTROL EQUIPMENT
NOT APPLICABLE

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
17	180	70

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4790	363.15	4856.16	03

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (°F)
30	24	6900	380

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Carbon Monoxide	630-08-0	5 lb/1000 gal	—	2.8 ton/yr	—	—
Nitrogen Oxides	NA	20 lb/1000 gal	—	11.2 ton/yr	—	—
PM/PM-10	NA	2 lb/1000 gal	—	0.6 ton/yr	—	—
VOC	NA	0.34 lb/1000 gal	—	0.1 ton/yr	—	—
Sulfur Dioxide	7446-09-5	71 lb/1000 gal	—	39.9 ton/yr	39.9 ton/yr[a]	TAN Boilers PTC

a. Inclusive with Stack TAN-603-027.

Figure VII-3-4. Process flow diagram for TAN-603-027.

Figure VII-3-5. Process flow diagram for TAN-603-028.

Emission Point Number TAN-603-027 and –028

REQUIREMENT 1

Requirement: The sulfur content of the grade 2 fuel oil shall not exceed 0.5% by weight as required by IDAPA 58.01.01.728.02.

Requirement basis: IDAPA 58.01.01.728.02.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: NA

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Certification of sulfur content of each load fuel oil as allowed by 40 CFR Part 60.42c(h) Subpart Dc.

Frequency of recordkeeping (how often are data recorded): As fuel is received.

REPORTING

General description of what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-3-6. Compliance Certification Form (method of compliance).

Emission Point Number TAN-603-027 and –028

REQUIREMENT 2

Requirement: The owner or operator of each affected facility shall submit bi-annual reports to the Administrator. The bi-annual report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

Requirement basis: 40 CFR 60.48c.

Compliance method type: Certification of sulfur content of fuel.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: NA

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Amounts of each fuel combusted daily. Records of fuel suppliers certification.

Frequency of recordkeeping (how often are data recorded): Daily fuel combusted certifications for a period of two years following the date of such record.

REPORTING

General description of what is reported: 1. Reporting period, 2.(a) The name of the oil supplier; and (b) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c, (c) a certified statement that the records of fuel supplier certification submitted represent all of the fuel combusted during the reporting period.

Frequency of reporting: Bi-annual.

Beginning date: 10/31/00.

Figure VII-3-6. (continued).

Emission Point Number TAN-603-027 and –028

REQUIREMENT 3

Requirement: Maintain records on site for a two-year period that indicate sulfur content (weight %) in No. 2 fuel oil.

Requirement basis: PTC 023-00001, “Oil Fired Boilers #4 and #5, TAN-603 Building,” May 14, 1998.

Compliance method type: Recordkeeping.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: NA

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Maintain records of sulfur content.

Frequency of recordkeeping (how often are data recorded): For each shipment.

REPORTING

General description of what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-3-6. (continued).

Emission Point Number TAN-603-027 and –028

REQUIREMENT 4

Requirement: No more than ninety-three thousand, three hundred thirty-three gallons per month (93,333 gal/mo) or one million, one hundred twenty thousand gallons per consecutive 12-month period (1,120,00 gal/yr) of fuel oil shall be burned in the boilers.

Requirement basis: State of Idaho Permit to Construct 023-00001, "TAN-603 Boilers #4 and #5," May 14, 1998.

Compliance method type: Recordkeeping, calculations.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: NA

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Monthly and annual fuel use and hours of operation for each permitted boiler.

Frequency of recordkeeping (how often are data recorded): Monthly.

REPORTING

General description of what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-3-6. (continued).

3.2 TAN Hot Shop

3.2.1 General Description

TAN Hot Shop—Figures VII-3-7 and VII-3-8 show plan views of the TAN Hot Shop and related floor areas. The TAN Hot Shop is a large, radiologically shielded high bay cell designed for remote operations such as examination, handling, analysis, or disassembly of highly radioactive or contaminated assemblies up to and including complete reactor systems. The Hot Shop measures approximately 51 × 165 ft with a height of 67 ft 6 in. The concrete walls are approximately 6 ft 10 in. thick at the base, tapering to 2 ft at the top. The Hot Shop contains nine shielded windows and a variety of equipment to remotely handle radioactive materials. The west side of the Hot Shop has an extension that is used for staging and cleaning trucks and locomotives. Materials are transported into the Hot Shop through this extension. Rail tracks are installed approximately 90 ft into the Hot Shop. Once inside, the radioactive assemblies are offloaded and placed on the Hot Shop floor, in shielded silos or in the TAN storage pool. Following offloading, the transport vehicle is surveyed, decontaminated if necessary, and removed from the Hot Shop.

Major features and equipment in the Hot Shop include:

- An overhead bridge crane that traverses the length and width of the Hot Shop
- One overhead and three wall-mounted manipulators
- A scanning periscope with photography capabilities
- A four-track railroad system for moving materials into and out of the Hot Shop
- A storage pool vestibule with a rolling bridge and underwater lights
- An underwater, rail-mounted cart for carrying items between the Hot Shop and the TAN storage pool
- A remotely operated Hot Shop to hot cell transporter
- A tunnel beneath the floor for access to service pedestals, control wiring, and utility piping
- Nine utility pedestals with power, water, and air connections
- Fire protection and radiation monitoring systems.
- TMI canister dewatering/drying equipment.

Special Equipment Service (SES) Room—The SES room adjoins the Hot Shop at its east end. This room is designed to service the Hot Shop overhead manipulator, bridge crane, and other equipment capable of being moved over the 26-ft-high wall that separates the SES area from the rest of the Hot Shop. The SES room is also used to temporarily store dewatered/dried TMI-II fuel canisters prior to shipment to INTEC. The SES room can be separated from the rest of the Hot Shop by large shielding doors atop the dividing wall. When the doors are closed, maintenance may be performed in the SES room even when the shop is loaded with highly radioactive components. The SES room has its own heating and ventilation system, fire protection system, zinc bromide-shielded window, tools, and services.

TAN Hot Cell—The TAN Hot Cell, connected to the southeast corner of the Hot Shop, is a conventional, shielded, remote-manipulator laboratory used for specialized disassembly, inspection, and examination of highly radioactive materials. Activities performed in the Hot Cell are independent from those in the Hot Shop, except when material transfers are made between the two facilities. The Hot Cell measures 10×35 ft, with a 20 ft ceiling height. The cell walls are 4 ft thick with interior stainless-steel lining. The Hot Cell contains five shielded windows, three scanning periscopes, nine wall-mounted manipulators, two bridge-mounted manipulators, and remote access to power, water, air, and fire protection services.

Hot Cell Annex—The Hot Cell Annex consists of four adjacent hot cells and support areas located north of the Hot Shop in a one-story building attached to TAN-607. The building is designated as TAN-633. These cells are used for small-scale disassembly, inspection, and sampling of radioactive materials. Each cell measures $8 \times 6 \times 12$ ft high. The outside walls are 3 ft thick, high-density concrete with 2-ft thick walls between the cells. Radioactive material can be brought into the cells on a remote-controlled dolly that travels through a transfer tunnel with a removable hatch. Materials can be transferred between cells through transfer drawers. Each of the cells is equipped with a viewing window, two wall-mounted manipulators, power and air services, fire protection, and a ventilation system that flows from cell No. 1 to cell No. 4 before being filtered and exhausted to the TAN-734 stack. The Hot Cell Annex was used primarily for metallurgical sample preparation and mounting, and specialized tests on small radioactive components. Parts examined or processed in the annex were usually obtained from disassembly or component cutting activities in the hot cell. Each cell is equipped with remote handling equipment and photography capabilities. The Hot Cell Annex is currently inactive.

3.2.2 TAN-734-001 Specific Information

The TAN-607 areas that exhaust ventilation air to the TAN-734 stack (TAN-734-001) include the Hot Shop high bay, SES room, TAN Hot Cell, and Hot Cell Annex. See Figure VII-3-9 for the state operating permit application forms for this source. The TAN-734-001 stack emissions are currently regulated under the State of Idaho PTC 023-00001, "TAN-734-001, Canister Dewatering Vacuum Drying," November 9, 1999.

3.2.2.1 Process Description.

See Figure VII-3-10 for the process flow diagram for this source.

Each of the four areas described in this section are contaminated or potentially contaminated. Individual area ventilation systems maintain the areas at negative pressure in relation to the surrounding rooms to prevent leakage of radioactive contamination. Ventilation fans pull air out of the areas through filter systems and direct the exhaust to the monitored, TAN-734 stack. The combined ventilation exhaust is approximately 17,500 ft^3/min.

Except for ventilation from several nonradiologically contaminated, nonregulated pollution-containing areas, all airborne exhaust from the TAN Hot Shop and related areas is released through the TAN-734 stack. Air is supplied to the Hot Shop and SES room by a common fan and exhausted through separate prefilters and HEPA filters before entering the TAN-734 stack. The supply fan and exhaust fans are interconnected such that if the exhaust fans shut down, the supply fan will not operate and pressurize the Hot Shop. Exhaust fan speed controllers compensate for changes in negative pressure by speeding up the fan when there is a drop in negative pressure. Redundant fans are installed to run during normal operations and on standby power.

The Hot Cell ventilation system is a single-pass system. Air drawn from occupied areas of the TAN-607 building enters the cell through the manipulator ports and other penetrations, and is exhausted through a prefilter and a bank of HEPA filters in the cell. The air is ducted to a fan room, filtered through

a second and third bank of HEPA filters, and released through the TAN-734 stack. If the Hot Cell fan fails, a gravity damper opens and cross-ties the Hot Cell to the Hot Shop exhaust system. The Hot Cell is maintained at a negative pressure of <0.175 in. water with respect to the outside atmosphere.

The Hot Cell Annex supply air is provided for all four cells through infiltration from the setup and operating gallery areas through cell penetrations and manipulator holes, and around shielding doors. Air flow is regulated by dampers and generally moves from the least contaminated cell (No. 1) to the most contaminated cell (No. 4). Air flow out of the cells is through prefilters located in each cell and a HEPA filter bank to the TAN-734 stack. The exhaust fan automatically compensates to maintain flow and pressure differentials.

The Hot Shop, Hot Cell, and Hot Cell Annex ventilation exhaust streams are prefiltered through industrial-type filters and HEPA filters before being discharged to the TAN-734 stack. The SES room exhaust is filtered though a single HEPA filter and the Hot Cell is filtered through two additional HEPA banks in series before being exhausted to the stack.

3.2.2.2 Maximum Regulated Pollutant Emissions. The following data addresses regulated pollutants potentially emitted from this source.

Pollutant	CAS	Annual maximum limit	Criteria pollutant
Radionuclides	NA	10 mrem/yr[a]	—
Radionuclides	NA	0.1 mrem/yr	—

a. This is an aggregate limit for all sources at the INEEL.

3.2.2.3 Compliance Requirements.

3.2.2.3.1 Permitted Emission Limits—Radionuclide emissions from Stack TAN-734-001 shall not, by themselves, cause any individual to receive a dose of 0.1 millirem-per-year effective dose equivalent or greater, nor shall these emissions, in combination with emissions from other INEEL sources, cause any individual to receive a dose of 10 millirem-per-year effective dose equivalent or greater. Doses due to radon-220 and radon-222, and their respective decay products, are excluded from this limit. The following data addresses permitted emission limits for this source.

Pollutant	CAS	Emission limit
Radionuclides	NA	10 mrem/yr[a]
Radionuclides	NA	0.1 mrem/yr

a. This is an aggregate limit for all sources at the INEEL.

3.2.2.3.2 Existing Permit Requirements

1. Radionuclide emissions from TAN-734-001 stack shall be monitored and recorded in accordance with 40 CFR 61.93 paragraph (b) and 40 CFR Subpart A.

2. The permittee shall monitor Stack TAN-734-001 HEPA filters as specified below:

    a. The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter or HEPA filter bank, as applicable. The first test shall be conducted within 90 days of startup and subsequent tests shall be conducted at least every 12 months thereafter, per Nuclear Air Cleaning Handbook, ERDA 76-21, Section 8.3.5, "Frequency of Testing." Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test." In addition, after replacement or installation of a HEPA filter, an in-place efficiency test shall be conducted within 90 days of the date that the HEPA filter is placed in operation.

    b. A pressure monitoring device shall be maintained to enable monitoring of the pressure drop across each certified HEPA filter bank. The pressure drop monitoring equipment shall be maintained in good working order. Pressure drop shall be monitored daily when the HEPA filter bank is in use.

    c. Certified HEPA filter efficiency shall be maintained at or above 99.97% removal efficiency as determined by the guidelines of ASME N510, Section 10.

    d. If the removal efficiency of a certified HEPA filter or HEPA filter bank, as applicable, falls below 99.97% for particle sizes of 0.30 micron or larger, as determined by ASME N510, Section 10, certified filters shall be isolated or replaced within 10 days until the required efficiency is achieved.

    e. Each certified HEPA filter shall be operated at a pressure drop that is limited to less than 5.0 inch water column. If the total pressure drop across the HEPA filter bank exceeds 5.0 inches water column, the permittee shall isolate it or replace it within 10 days.

    f. Within 90 days of issuance, the permittee shall submit to DEQ an operating and maintenance (O&M) manual that describes the procedures that will be followed to assure compliance with Sections 1 and 2 of this permit Appendix.

    g. Within 90 days of issuance, the permittee shall submit to DEQ a quality assurance program, based on ASME N510 guidelines, which defines methods and procedures that will be used to assure that quality and representative data are collected while performing in-place HEPA filter tests and measuring pressure drops across HEPA filters banks.

3. Records required under items 1 and 2 shall be maintained for a minimum of two (2) years from the date the data was recorded and shall be made available to DEQ representatives upon request. All records submitted to DEQ shall be certified by a responsible official to be true, accurate, and complete.

4. A copy of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) annual report shall be submitted to DEQ each year. If the NESHAP report does not demonstrate compliance with the emission limits above, a more detailed report shall be submitted to demonstrate compliance.

3.2.2.3.3 Other Enforceable Requirements—Emission monitoring must be conducted in accordance with 40 CFR Part 61.93 (b) to determine radionuclide emissions used to demonstrate compliance with emissions limit. All emissions from this source must be included in the facility-wide INEEL annual NESHAPS report (40 CFR Part 61.94) and records supporting the emissions measurements must be kept as stated in 40 CFR Part 61.95. See compliance methodology form in Section 5.5.1 in Volume I.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Section 5.1 of Volume I.

3.2.2.4 Compliance Methodology and Status

3.2.2.4.1 Compliance Plan—This source is in compliance, and will continue to comply, with the indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the applicable requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, this source will comply with the applicable requirement schedule provided in the applicable requirement.

3.2.2.4.2 Compliance Methodology Forms—See Figure VII-3-11.

3.2.2.5 Emission Calculations. The following section provides a qualitative description of calculations used to report regulated pollutant emissions in the regulated pollutant table and the annual NESHAP report.

3.2.2.5.1 Nonradionuclide Emissions—There are no regulated, nonradionuclide emissions from this source.

3.2.2.5.2 Radionuclide Emissions—This source is monitored per the regulations found in 40 CFR 61, Subpart H. Because this source is monitored, no calculations are included here but emissions are determined as documented in Volume I.

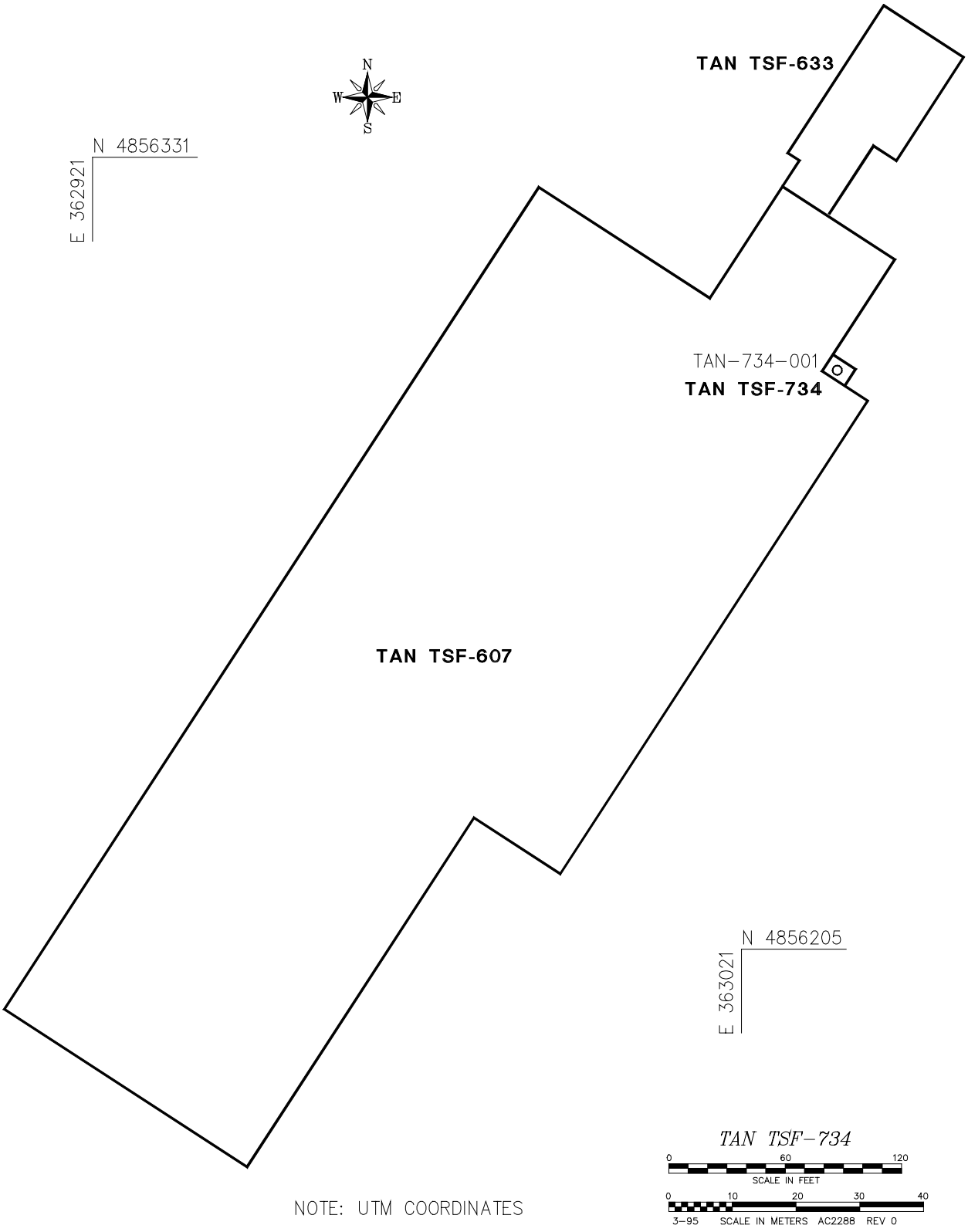

Figure VII-3-7. Plan view for TAN Hot Shop.

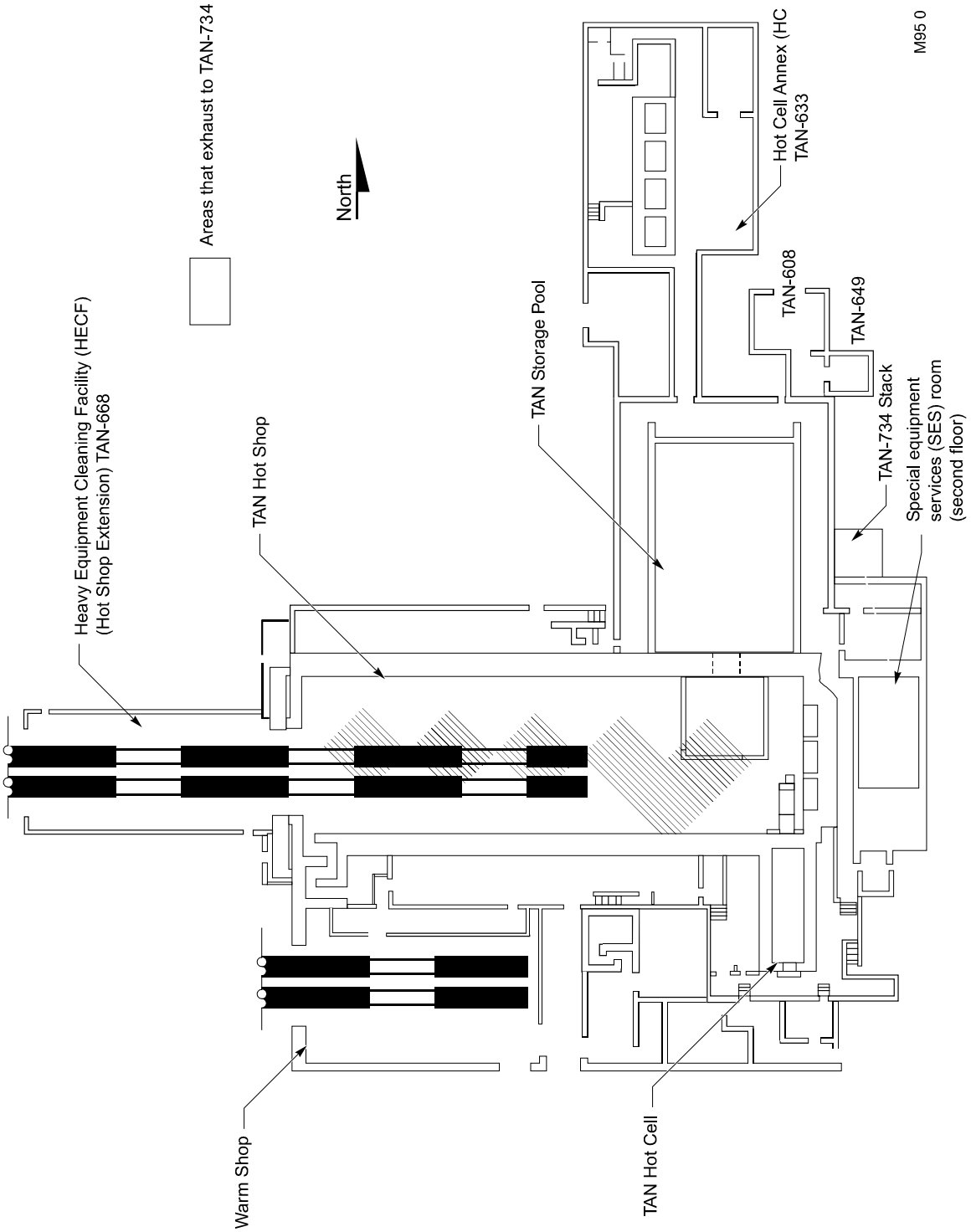

Figure VII-3-8. TAN Hot Shop and related areas floor plan.

Figure VII-3-9. State Operating Permit Application Form.

DEQ USE ONLY		DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE	DEQ STACK ID CODE	DEQ BUILDING ID CODE
PRIMARY SCC	SECONDARY SCC	DEQ SEGMENT CODE	

PART A — GENERAL INFORMATION

PROCESS CODE OR DESCRIPTION	STACK DESCRIPTION	BUILDING DESCRIPTION	
TAN - 734 - 001	Hot Shop/Hot Cell/Hot Cell Anne	TAN - 734	
MANUFACTURER	MODEL		DATE INSTALLED OR LAST MODIFIED
NA	NA		1980

PROCESSING DATA

PROCESS STREAM	MATERIAL DESCRIPTION	MAXIMUM HOURLY RATE	ACTUAL HOURLY RATE	ACTUAL ANNUAL RATE	UNITS
INPUT	NA	—	—	—	—
PRODUCT OUTPUT					
WASTE OUTPUT					
RECYCLE					

POTENTIAL HAPs IN PROCESS STREAMS

HAP DESCRIPTION	HAP CAS NUMBER	FRACTION IN INPUT STREAM BY WEIGHT	FRACTION IN PRODUCT STREAM BY WEIGHT	FRACTION IN WASTE STREAM BY WEIGHT	FRACTION IN RECYCLE STREAM BY WEIGHT
NA	—	—	—	—	—

Figure VII-3-9. (continued).

PART B

OPERATING DATA

PERCENT OPERATIONS PER QUARTER			
DEC-FEB	MAR-MAY	JUN-AUG	SEP-NOV
25	25	25	25

NORMAL OPERATING SCHEDULE		
HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
24	7	52

POLLUTION CONTROL EQUIPMENT

PARAMETER	PRIMARY	SECONDARY
TYPE	HEPA Filter	NA
TYPE CODE (APPENDIX H)	101	—
MANUFACTURER	Flanders or equivalent	—
MODEL NUMBER	NA	—
INLET TEMPERATURE (ºF)	70	—
PRESSURE DROP (INCHES H20)	3.0	—
WET SCRUBBER FLOW (GPM)	—	—
BAGHOUSE AIR/CLOTH RATIO (FPM)	—	—

VENTILATION AND BUILDING/AREA DATA

ENCLOSED? (Y/N)	HOOD TYPE (APP I)	MINIMUM FLOW (ACFM)	% CAPTURE EFFICIENCY
N	NA	NA	NA

BUILDING HEIGHT (FEET)	BUILDING/AREA LENGTH (FEET)	BUILDING/AREA WIDTH (FEET)
67.5	165	51

STACK DATA

GROUND ELEVATION (FT)	UTM X COORDINATE (KM)	UTM Y COORDINATE (KM)	STACK[a] TYPE
4790	363.04	4856.30	02

STACK EXIT HEIGHT FROM GROUND LEVEL (FT)	STACK EXIT DIAMETER (IN)	STACK EXIT GAS FLOW RATE (ACFM)	STACK EXIT TEMP (ºF)
160	45	18,000	~68

a. 01) DOWNWARD, 02) VERTICAL (UNCOVERED), 03) VERTICAL COVERED, 04) HORIZONTAL, 05) FUGITIVE

AIR POLLUTANT EMISSIONS

POLLUTANT	CAS NUMBER	EMISSION FACTOR	PERCENT CONTROL EFFICIENCY	ESTIMATED OR MEASURED EMISSIONS	ALLOWABLE EMISSIONS	REFERENCE
Radionuclide	NA	NA	99.97	NA	10 mrem/yr in aggregate with other INEEL sources	40 CFR 61.92
Radionuclide	NA	NA	99.97	NA	0.1 mrem/yr	TM PTC

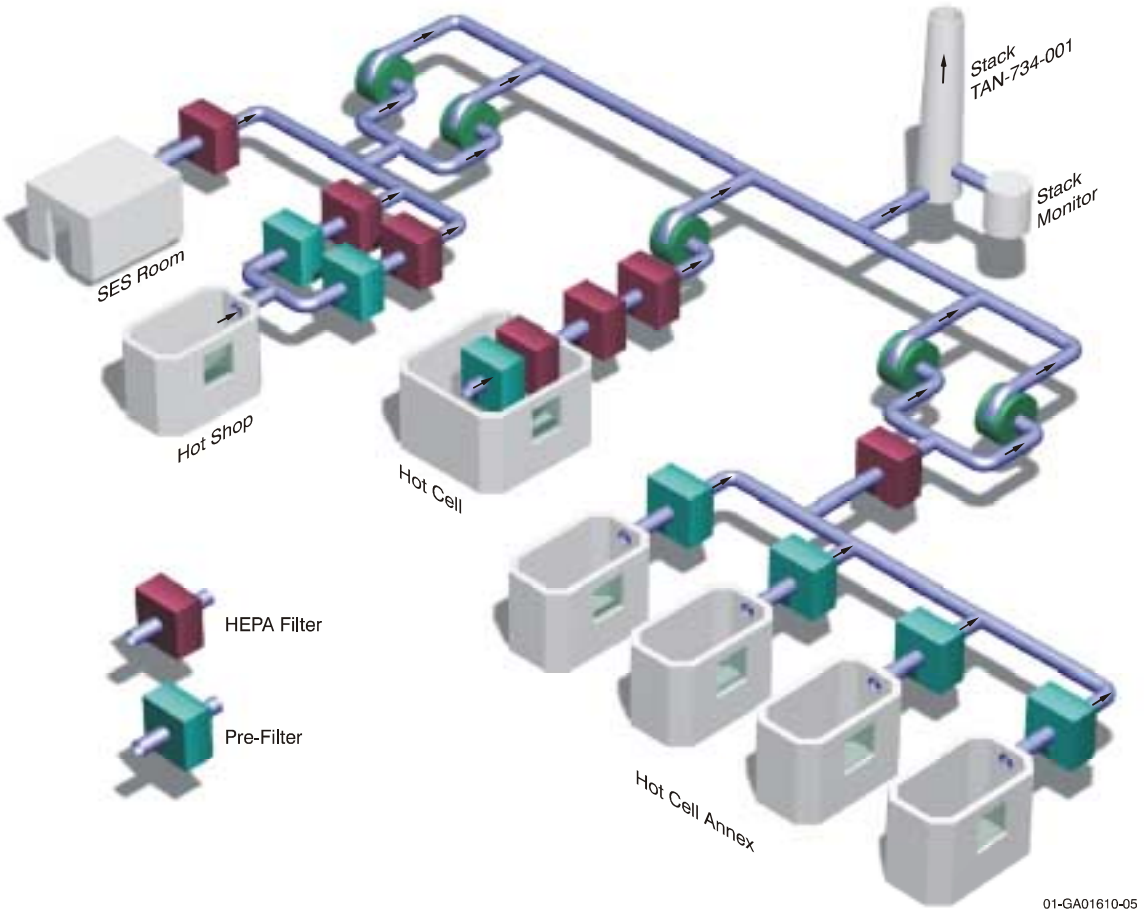

Figure VII-3-10. Process flow diagram for TAN-734-001.

Emission Point Number TAN-734-001

REQUIREMENT 1

Requirement: Radionuclide emissions from this source shall not, by themselves, cause any individual to receive a dose of 0.1 millirem-per-year effective dose equivalent or greater, nor shall these emissions, in combination with emissions from other INEEL sources, cause any individual to receive a dose of 10 millirem-per-year effective dose equivalent or greater. All records of measurements must be kept onsite for 5 years.

Requirement basis: State of Idaho PTC 023-00001, "TAN-734-001, Canister Dewatering/Vacuum Drying," November 9, 1999, and 40 CFR Part 61, Subpart H.

Compliance method type: Monitoring.

REFERENCE TEST METHOD

Reference test method description: Method 114.

Reference test method citation: 40 CFR Part 61, Appendix B.

Monitoring device type: Continuous Sample collector.

Monitor location description: TAN-734-001 stack.

Regulated pollutant being monitored: Particulate radionuclides.

General description of frequency and duration of sampling and how data will be reported: Weekly to quarterly.

RECORDKEEPING

Data (parameter) being recorded: NA

Frequency of recordkeeping (how often are data recorded): NA

REPORTING

General description of what is reported: Effective dose equivalent to the INEEL maximally exposed individual from all INEEL radiological emission sources.

Frequency of reporting: Annually.

Beginning date: June 30, 2001.

Figure VII-3-11. Compliance Certification Form (method of compliance).

Emission Point Number TAN-734-001

REQUIREMENT 2

Requirement: Maintain HEPA filter in-place testing efficiency at or above 99.97% for 0.30 μm particles. Replace or isolate filter within 10 days if minimum efficiency not met. Test new HEPA filter within 90 days after placed in operation. Maintain records of testing results onsite for 2 years.

Requirement basis: State of Idaho PTC 023-00001, "TAN-734-001 Canister Dewatering/Vacuum Drying," November 9, 1999.

Compliance method type: Testing.

REFERENCE TEST METHOD

Reference test method description: ASME N510, "HEPA Filter Bank In-Place Test."

Reference test method citation: NA

MONITORING

Monitoring device type: NA

Monitor location description: NA

Regulated pollutant being monitored: NA

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Filter efficiency.

Frequency of recordkeeping (how often are data recorded): Annually.

REPORTING

General description of what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-3-11. (continued).

Emission Point Number TAN-734-001

REQUIREMENT 3

Requirement: Maintain HEPA filter pressure drop to less than 5.0 inches water column. Replace or isolate filter within 10 days if pressure drop is exceeded. Maintain records of pressure drop measurement results onsite for 2 years.

Requirement basis: State of Idaho PTC 023-00001, "TAN-734 Canister Dewatering/Vacuum Drying," November 9, 1999.

Compliance method type: Monitoring.

REFERENCE TEST METHOD

Reference test method description: NA

Reference test method citation: NA

MONITORING

Monitoring device type: Pressure drop monitoring instrument.

Monitor location description: Across each HEPA filter.

Regulated pollutant being monitored: NA

General description of frequency and duration of sampling and how data will be reported: NA

RECORDKEEPING

Data (parameter) being recorded: Pressure drop.

Frequency of recordkeeping (how often are data recorded): Daily.

REPORTING

General description of what is reported: NA

Frequency of reporting: NA

Beginning date: NA

Figure VII-3-11. (continued).

3.3 Internal Combustion Engines

3.3.1 General Description

Internal combustion engines of various sizes and configurations are utilized at TAN. These engines are exempt from PTC requirements by IDAPA 58.01.01.220 or are grandfathered. Engines may be gasoline, propane, or diesel-fired. Uses for these units include, but are not limited to: emergency generators, stand-by generators, fire-water pumps, and air compressors. The table below provides an example of the types of engines currently in use at TAN. It should be noted that this is not intended to be a comprehensive list of all the engines at TAN. A complete listing is not provided because the units in use are continually changing and there are no unit-specific applicable requirements associated. The general requirements are listed below.

3.3.2 Engine Specific Information

Internal combustion engines currently in use at TAN and SMC are as follows:

Building Number	Building Name	Vent/stack number	Source description
TAN-603	TSF	TAN-603-011	Standby gen. (665 hp)
TAN-607	TSF	TAN-607-021	Standby gen. (1454 hp)
TAN-610	TSF	TAN-610-002	Standby water pump (310 hp)
TAN-641	WRRTF	TAN-641-022	Standby gen. (120 hp)
TAN-652	WRRTF	TAN-652-003	Standby water pump (310 hp)
TAN-665	CTF	TAN-665-002	Standby water pump (310 hp)
TAN-675	CTF(SMC)	TAN-675-010[a]	Standby gen. (598 hp)
TAN-679	CTF(SMC)	TAN-679-012[a]	Standby gen. (890 hp)
TAN-687	Fire station	TAN-687-020[a]	Standby gen. (99 hp)

a. PSD increment consumer.

3.3.2.1 Process Description. These units are utilized for various support functions at TAN and SMC.

3.3.2.2 Maximum Regulated Pollutant Emissions. Emissions are not quantified here because type and number of units may be continually changing and there are no associated emission limits.

3.3.2.3 Compliance Requirements.

3.3.2.3.1 Permitted Emission Limits—None

3.3.2.3.2 Existing Permit Requirements—None

3.3.2.3.3 Other Enforceable Requirements—The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I.

Diesel Engines shall not burn fuel with a sulfur content greater than 0.5% by weight.

3.3.2.4 Compliance Methodology and Status

3.3.2.4.1 Compliance Plan—These sources are in compliance, and will continue to comply, with the indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, these sources will meet the requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains a more detailed schedule, these sources will comply with the requirement on the schedule provided.

3.3.2.4.2 Compliance Methodology Forms—Not required for these units.

3.3.2.5 Emission Calculations. N/A

3.4 Petroleum Storage Tanks

3.4.1 General Description

Two storage tanks at Stack TAN-679-004 are utilized for storage of petroleum products at TAN. Because these tanks were constructed after July 23, 1984, and each has a capacity greater than 10,567 gallons, they are subject to 40 CFR 60 Subpart Kb requirements.

3.4.2 Specific Information

The following tanks are used to store diesel/fuel oil except for the gasoline storage tank 98TAN0049.

Tank Contents	Tank Inventory Capacity (in gallons)	Tank Inventory #	Date Installed	Dimensions
Diesel	15,000	98TAN00650	1992	10 ft 4 in x 29 ft
Fuel #2	48,000	98TAN00246	1986	12 ft x 63 ft
Fuel Oil #2	48,000	98TAN00247	1986	12 ft x 63 ft
Gasoline	15,000	98TAN00491	1992	10 ft 4 in x 29 ft

3.4.2.1 Process Description. The processes involved are basic filling and draining of vented storage tanks.

3.4.2.2 Maximum Regulated Pollutant Emissions. VOCNM emissions from these tanks combined with all other petroleum storage tanks at the INEEL are less than 1 ton/yr.

3.4.2.3 Compliance Requirements.

3.4.2.3.1 Permitted Emission Limits—There are no permit limits associated with these sources.

3.4.2.3.2 Existing Permit Requirements—None.

3.4.2.3.3 Other Enforceable Requirements—New source performance standards (NSPS) require retention of records showing the dimensions of the tank and calculations of the tank volume.

The State of Idaho regulates visible emissions as determined by emission opacity. Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than 3 minutes in any 60-minute period. See compliance methodology form in Volume I.

3.4.2.4 Compliance Methodology and Status.

3.4.2.4.1 Compliance Plan—This source is in compliance, and will continue to comply with the indicated applicable requirements as described in this application. For each applicable requirement that becomes effective during the term of the Tier I operating permit and does not contain a more detailed schedule, this source will meet the applicable requirement on a timely basis. For each applicable requirement that becomes effective during the term of the Tier I operating permit and contains

a more detailed schedule, this source will comply with the applicable requirement on the schedule provided in the applicable requirement.

*3.4.2.4.2 Compliance Methodology Forms—*See Volume I.

3.4.2.5 Emission Calculations. Not required.

*3.4.2.5.1 Nonradionuclide Emissions—*Not required.

*3.4.2.5.2 Radionuclide Emissions—*Not applicable.

Appendix A

Permits

STATE OF IDAHO PERMIT TO CONSTRUCT AN AIR POLLUTION EMITTING SOURCE	PERMIT NUMBER 023-0001 AQCR 061 CLASS A1 SIC 9999 ZONE 12 UTM COORDINATE (km) 344.0, 4826.0

1. **PERMITTEE**

   U.S. Department of Energy, Idaho Field Office

2. **PROJECT**

   Replacement of #2 Fuel Boilers at Test Area North - 603

3. ADDRESS	COUNTY	NO. OF FULL TIME EMPLOYEES
785 DOE Place	Bonneville	12,813

4. CITY	STATE	ZIP CODE	PROPERTY AREA AT SITE (Acreage)
Idaho Falls	Idaho	83402-1562	569,600

5. PERSON TO CONTACT	TITLE	TELEPHONE NUMBER
Robert S. Rothman	Chief, Enviro. Supt. Branch	(208) 526-5287

6. **EXACT PLANT LOCATION**

   Test Area North, Building TAN-603, INEL, Scoville, Idaho

7. **GENERAL NATURE OF BUSINESS AND KINDS OF PRODUCTS**

   Government research and support facilities

8. **GENERAL CONDITIONS**

This permit is issued according to the **Rules and Regulations for the Control of Air Pollution in Idaho,** Section 01.1012, and pertains only to emissions of air contaminants which are regulated by the State of Idaho and to the sources specifically allowed to be constructed by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located, (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment, (c) does not release the permittee from compliance with other applicable local laws, regulations, or ordinances, (d) in no manner implies or suggests that the Department of Health and Welfare, or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit is not transferable to another person, place, piece or set of equipment. This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for two years.

THIS PERMIT HAS BEEN GRANTED ON THE BASIS OF DESIGN INFORMATION PRESENTED WITH ITS APPLICATION. CHANGES OF DESIGN OR EQUIPMENT MUST BE APPROVED IN ADVANCE BY THE DEPARTMENT.

ADMINISTRATOR DIVISION OF ENVIRONMENT Signature on Original	DATE July 24, 1992

1. SOURCE DESCRIPTION

1.1 Process Description

Building TAN-603 is a 9,746 square foot, one-story structure of pumice block construction with concrete floor and steel-trussed metal-decked roof. The building will have two #2 oil fired Cleaver-Brooks boilers in addition to an existing Cleaver-Brooks D60 boiler of 35,000 lb/hr steam capacity installed about 1978-80. Besides housing the boilers, TAN-603 is occupied by a medical unit and a fire station.

In addition to the boilers, three fuel oil storage tanks serve the TAN-603 facilty. One tank designated as TAN-704 is currently used for #2 fuel. The other two tanks, TAN-702 and TAN-724, currently used for #5 fuel, will be converted to #2 fuel for usage at TAN-603.

1.2 Control Description

Emissions from the combustion of #2 fuel oil in the #4 and #5 boilers are uncontrolled.

1.3 Stack Parameters

1.3.1 Boiler Stacks TAN-603 #4 and #5.

Height - 28 feet
Diameter - 2 feet
Flow Rate - 6,900 ACFM
Temperature - 475EF

1.4 Equipment

#4 Boiler Cleaver-Brooks Model CB-500-150, rated heat input capacity is 16.7 MMBTU/hr.

#5 Boiler Same as above.

Tank-702 Fixed roof tank of 101,464 gallon capacity.

Tank-724 Fixed roof tank of 190,343 gallon capacity.

2. EMISSION LIMITS

2.1 PM-10 (particulate matter with an aerodynamic diameter less than a nominal 10 microns -- 40 CFR 51.100), PM (particulate matter), SO_2 (sulfur dioxide), NOx (oxides of nitrogen), CO (carbon monoxide) and VOC (volatile organic compound) emission from each of the #4 and #5 Cleaver-Brooks boilers shall not exceed the pound per hour (lb/hr) or ton per year (T/yr) values listed in Appendix A.

2.2 Visible emissions from the #4 and #5 boiler stacks shall not exceed 20 percent opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period each as required in IDAPA 16.01.01201 (Rules and Regulations for the Control of Air Pollution in Idaho) and as determined using the Department's "Procedures Manual for Air Pollution Control."

2.3 The sulfur content of the Grade 2 fuel oil shall not exceed 0.5 percent by weight as required by IDAPA 16.01.01354,02.

3. MONITORING REQUIREMENTS

3.1 The permittee shall conduct a performance test on one of the Cleaver-Brooks Boiler's stack (#4 or #5), in accordance with General Provision F of this permit, to measure sulfur dioxide emissions using a U.S. EPA method (40 CFR 60 Appendix A) or an equivalent alternate method approved by the Department. The sulfur content of the fuel burned and the amount of fuel burned in the test shall be reported with the performance test results. Visible emissions shall be observed during each performance test run using the methods specified in the Department's "Procedures Manual for Air Pollution Control."

3.2 The permittee shall sample and analyze the oil in the initial tank of oil to be fired in the boiler to demonstrate that the oil contains 0.5 weight percent of sulfur or less in accordance with Section 2.3 of this permit. Thereafter, the permittee shall sample the oil in the fuel tank after each new shipment of oil is received in accordance with 40 CFR Part 60 Subpart Dc.

3.3 Performance tests shall also be conducted for particulate emissions if the visible emissions exceed ten (10) percent opacity for more than three (3) minutes in any sixty (60) minute period from either the #4 or #5 boiler's stacks.

4. OPERATING REQUIREMENTS

4.1 The #4 and #5 Cleaver-Brooks Boilers shall not exceed a maximum annual fuel throughput of 530,000 gallons of No. 2 fuel oil each; the third boiler currently existing on-site shall be operated as a backup boiler only, as per applicant's submittal.

4.2 Each of the boilers shall be operated for a maximum period of 6,552 hours per year as per applicant's submittal.

5. REPORTING AND RECORDKEEPING REQUIREMENTS

5.1 The performance test data and results as required in Section 3.0 shall be reported to the Department within 30 days of performing the test.

5.2 The permittee shall maintain records on site for a two year period that indicate sulfur content (weight percent) in No. 2 fuel oil in accordance with 40 CFR Part 60.

APPENDIX A

Department of Energy

Idaho National Engineering Laboratory

Test Area North (TAN-603)

Emission Limits[a] - Hourly (lb/hr) and Annual[b] (ton/yr)

SOURCE DESCRIPTION	UNIT	PM	PM-10	SO_2	NOx	VOC	CO
Boiler #4[c]	lb/hr	1.64	0.82	9.90	2.79	0.04	0.70
	tpy	5.4	2.7	18.82	5.30	0.07	1.33

a : As determined by a pollutant specific U.S. EPA reference method, or Department approved alternative, or as determined by the Department's emission estimation methods used in this permit analysis.

b As determined by multiplying the actual or allowable (if actual is not available) pound per hour emission rate by the allowable hours per year that the process(es) may operate(s).

c Boiler #5 has the same emission rates.

PERMIT TO CONSTRUCT GENERAL PROVISIONS

A. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the **Rules and Regulations for the Control of Air Pollution in Idaho**. The emission of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the **Rules and Regulations for the Control of Air Pollution in Idaho**, and the Environmental Protection and Heath Act, Idaho Code 39-101, et.seq.

B. The permittee shall at all times (except as provided in the **Rules and Regulations of the Control of Air Pollution in Idaho**) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

C. The permittee shall allow the Director, and/or his authorized representative(s), upon the presentation of credentials:

1) To enter at resonable times upon the premises where an emission source is located, or in which any records are required to be kept under the terms and conditions of this permit; and

2) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and to require stack emission testing in conformance with the Department's **Procedures Manual for Air Pollution Control** when deemed appropriate by the Director.

D. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.

E. The permittee shall notify the Idaho Air Quality Bureau, in writing, of the required information for the following events within five working days after occurrence:

1) Initiation of Construction - Date
2) Completion/Cessation of Construction - Date
3) Actual Production Startup - Date
4) Intial Date of Achieving Maximum Production Rate - Production Rate and Date

F. If emission testing is specified, the permittee must schedule such testing within sixty (60) days after achieving the maximum production rate, but not later than one-hundred and eighty (180) days after initial startup. Such testing must **strictly** adhere to the procedures outlined in the Department's **Procedures Manual for Air Pollution Control**, and will not be conducted on weekends or state holidays. Testing procedures and specific time limitations may be modified by the Idaho Air Quality Bureau by prior negotiation if conditions warrant adjustment. The Idaho Air Quality Bureau shall be notified at least fifteen (15) working days prior to the scheduled compliance test. Any records or data generated as a result of such compliance test shall be made available to the Department upon request.

The performance tests will be performed at the **maximum** production rate. If this maximum rate is not achieved during testing, the allowable production rate will be limited to the production rate attained during testing.

G. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

STATE OF IDAHO PERMIT TO CONSTRUCT AN AIR POLLUTION EMITTING SOURCE	PERMIT NUMBER 0340-0001 AQCR 061 CLASS B SIC 9999 ZONE 12 UTM COORDINATE (km) 362.8, 4856.5

1. **PERMITTEE**

   Department of Energy, Idaho National Engineering Laboratory

2. **PROJECT**

   Classified Waste - Multiple Chamber - Incinerator - 100 lb/hr

3. ADDRESS		COUNTY	NO. OF FULL TIME EMPLOYEES
785 DOE Place		Butte	6600
4. CITY	**STATE**	**ZIP CODE**	**PROPERTY AREA AT SITE (Acreage)**
Idaho Falls	Idaho	83401	890 Square Miles
5. PERSON TO CONTACT		**TITLE**	**TELEPHONE NUMBER**
Richard J. Beers		Assistant Manager, Env. Safety & Health	(208) 526-1925

6. **EXACT PLANT LOCATION**

   Idaho National Engineering Laboratory, Test Area North

7. **GENERAL NATURE OF BUSINESS AND KINDS OF PRODUCTS**

   Nuclear Energy Research

8. **GENERAL CONDITIONS**

This permit is issued according to the **Rules and Regulations for the Control of Air Pollution In Idaho,** Section 01.1012, and pertains only to emissions of air contaminants which are regulated by the State of Idaho and to the sources specifically allowed to be constructed by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located, (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment, (c) does not release the permittee from compliance with other applicable local laws, regulations, or ordinances, (d) in no manner implies or suggests that the Department of Health and Welfare, or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit is not transferable to another person, place, piece or set of equipment. This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for two years.

THIS PERMIT HAS BEEN GRANTED ON THE BASIS OF DESIGN INFORMATION PRESENTED WITH ITS APPLICATION. CHANGES OF DESIGN OR EQUIPMENT MUST BE APPROVED IN ADVANCE BY THE DEPARTMENT.

ADMINISTRATOR DIVISION OF ENVIRONMENT Signature on Original	DATE March 11, 1986

1. This refuse incinerator shall be operated in accordance with Sections 01.1501 and 01.1502 of the Rules and Regulations for the Control of Air Pollution in Idaho, at a particulate emission rate of 0.2 lb. of particulate per 100 lb. of refuse burned to be determined in accordance with EPA Reference Methods 1 through 5 upon request of the Department.

2. Section 01.1201 of the Rules and Regulations for the Control of Air Pollution in Idaho, shall apply such that the effluent stack gas opacity shall not exceed 20% opacity for a total of three (3) minutes in any sixty (60) minute period. This determination must be make in accordance with U.S. EPA Reference Method 9.

3. This incinerator shall be operated and maintained as specified in the permit application package.

4. All personnel authorized to operated and/or maintain this incinerator shall be thoroughly trained and knowledgeable to perform their respective functions correctly as specified in the Operating and Maintenance Sections of the permit application package.

PERMIT TO CONSTRUCT GENERAL PROVISIONS

A. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The emission of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the **Rules and Regulations for the Control of Air Pollution in Idaho**, and the Environmental Protection and Heath Act Idaho Code 39-101, et. seq.

B. The permittee shall at all times (except as provided in the **Rules and Regulations of the Control of Air Pollution in Idaho**) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable laws for the control of air pollution.

C. The permittee shall allow the Director, and/or his authorized representative (s), upon the presentation of credentials:

1) To enter upon the permittee's premises where an emission source is located, or in which any records are required to be kept under the terms and conditions of this permit; and

2) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and to require stack emission testing in conformance with accepted EPA procedures when deemed appropriate by the Director.

D. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.

E. The permittee shall notify the Idaho Air Quality Bureau, in writing, of the required information for the following events within five working days after occurrence:

1) Initiation of Construction - Date
2) Completion/Cessation of Construction - Date
3) Anticipated Production Startup - Date
4) Actual Production Startup - Date
5) Maximum Production Rate - Production Rate and Date

F. If emission testing is specified, the permittee must schedule such testing within sixty (60) days after achieving the maximum production rate, but not later than one-hundred and eighty (180) days after initial startup. Such testing must strictly adhere to U.S. Environmental Protection Agency approved methods. Testing procedures and specific time limitations may be modified by the Idaho Air Quality Bureau by prior negotiation if conditions warrant adjustment. The Idaho Air Quality Bureau shall be notified at least fifteen (15) working days prior to the scheduled compliance test. Any records or data generated as a result of such compliance test shall be made available to the Department upon request.

The performance tests will be performed at the **maximum** production rate. If this maximum rate is not achieved during testing, the allowable production rate will be limited to the production rate attained during testing.

G. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

STATE OF IDAHO
DIVISION OF
ENVIRONMENTAL QUALITY

1410 North Hilton, Boise, ID 83706-1255, (208) 373-0502

Phil E. Batt, Governor

July 16, 1998

CERTIFIED MAIL # P 326 991 271

Mr. Phillip B. Gray
Acting Manager
Lockheed Martin Idaho Technologies Company
P.O. Box 1625
Idaho Falls, ID 83415

RE: P-980048 INEEL, Idaho Falls
(Test Area North, Dewatering of Storage Pool Canisters)

Dear Mr. Gray:

On May 1,1998, the Idaho Department of Health and Welfare, Division of Environmental Quality (DEQ) received a Permit to Construct (PTC) application from Lockheed Martin Idaho Technologies Company, on behalf of the Department of Energy, Idaho National Engineering and Environmental Laboratory (INEEL), for the dewatering and vacuum drying of storage canisters from the Test Area North Storage Pool. Based on review of the application and all applicable state and federal rules and regulations, DEQ finds that this project meets the provisions of IDAPA 16.01.01.200 (*Rules for the Control of Air Pollution in Idaho*). Enclosed is PTC No. 023-00001.

This permit does not release the permittee from compliance with all other applicable federal, state, local, or tribal laws, regulations, or ordinances, including applicable requirements due to collocation of facilities.

Please pay particular attention to the reporting requirements contained in Paragraph E of the General Provisions section of the permit. This information is needed to properly track the progress of the permit. Please refer to the appropriate permit number when submitting reports required in the Reporting Requirements section of the permit.

You, as well as any other entity, may have the right to appeal this final agency action pursuant to the Idaho Department of Health and Welfare Rules, Title 5, Chapter 3, "Rules Governing Contested Case Proceedings and Declaratory Rulings," by filing a petition with the

Hearings Coordinator, Department of Health and Welfare, Administrative Procedures Section, 450 West State Street, Tenth Floor, Boise, Idaho 83720-5450, within thirty-five (35) days of the date of this decision.

If you have any questions regarding the terms or conditions of the enclosed permit, please contact Susan J. Richards, Chief, Air Quality Permitting Bureau, at (208) 373-0502.

Sincerely,

Orville D. Green

Orville D. Green
Assistant Administrator
Air and Hazardous Waste

ODG/RM/ms G:\AHW\MCDOUGAL\INEEL\3MILE\3MILE.PL

Enclosures

cc: R. Wilkosz, TSB
P. Rayne, AFS
Idaho Falls RO
EPA, IOO
INEEL Oversight
Permit File Manual
Source File (023-00001)
COF

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

900 North Skyline, Suite B • Idaho Falls, Idaho 83402-1718 • (208) 528-2650

Dirk Kempthorne, Governor
C. Stephen Allred, Director

July 28, 2000

CERTIFIED MAIL #

Teresa Perkins
Director, DOE ETSD
Departement of Energy Idaho
850 Energy Drive
Mail Stop 1146
Idaho Falls, ID 83401-1562

RE: P-980128, Idaho National Engineering and Environmental Laboratory (INEEL), Test Area North (TAN), Specific Manufacturing Capabilities (SMC), PTC No. 023-00001

Dear Mrs. Perkins:

On December 2, 1998, the Department of Environmental Quality (DEQ) received a Permit to Construct (PTC) application from INEEL for the SMC Project. On January 11, 1999, the application was determined complete and permit application processing was delayed until proper certification was received from Department of Energy officials. Based on review of the application and all applicable state and federal rules and regulations, DEQ finds that this project meets the provisions of IDAPA 58.01.01.200 (*Rules for the Control of Air Pollution in Idaho*). Enclosed is modified PTC No. 023-00001, which consolidates and supersedes all previously issued PTCs # 023-00001, # 0340-0001, and # 0260-0030.

This permit does not release the permittee from compliance with all other applicable federal, state, local, or tribal laws, regulations, or ordinances. Please pay particular attention to the reporting requirements contained in Paragraph E of the General Provisions section of the permit. This information is needed to properly track the progress of the permit. Please refer to the appropriate permit number when submitting reports required in the Reporting Requirements section of the permit.

You, as well as any other entity, may have the right to appeal this final agency action pursuant to the Idaho Department of Health and Welfare Rules, Title 5, Chapter 3, "Rules Governing Contested Case Proceedings and Declaratory Rulings," by filing a petition with the Hearings Coordinator, Department of Health and Welfare, Administrative Procedures Section, 450 West State Street, Tenth Floor, Boise, Idaho 83720-5450, within thirty-five (35) days of the date of this decision. However, DEQ encourages you to contact the Air Quality Permit Program to address any concerns you may have with the enclosed permit prior to filing a petition for a contested case.

If you have any questions regarding the terms or conditions of the enclosed permit, please contact Jeff Treasure at (208) 528-2650.

Sincerely,

James S. Johnston
Regional Administrator
Idaho Falls Regional Office

DH/bm 87135 C:\MYDOCU~1\PERMITS\INEEL\SMCB60128.PL

Enclosures

cc: DEQ State Office
Idaho Falls RO
EPA Region X

STATE OF IDAHO

PERMIT TO CONSTRUCT
AN AIR POLLUTION
EMITTING SOURCE

PERMIT NUMBER: 023-00001

AQCR: 061

CLASS: A1

SIC: 9999

ZONE: 12

UTM COORDINATE (km): 361.1, 4857.4

1. PERMITTEE

United States Department of Energy, Idaho Operations

2. PROJECT

Specific Manufacturing Capabilities (SMC) Project

3. MAILING ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 1625	Idaho Falls	Idaho	83415

4. SITE LOCATION COUNTY	NO. OF FULL-TIME EMPLOYEES	PROPERTY AREA AT SITE (Acreage)
Butte	8,100	569,600

5. PERSON TO CONTACT	TITLE	TELEPHONE
Teresa Perkins	Director, DOE ETSD	(208) 526-1483

6. EXACT PLANT LOCATION

Test Area North, Butte County

7. GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS

Federal Government

8. GENERAL CONDITIONS

This permit is issued according to the *Rules for the Control of Air Pollution in Idaho*, Section 58.01.01.200, and pertains only to emissions of air contaminants that are regulated by the State of Idaho and to the sources specifically allowed to be constructed by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located, (b) does not release the Permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment, (c) does not release the Permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances, (d) in no manner implies or suggests that the Idaho Department of Environmental Quality (DEQ) or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit is not transferable to another person, place, piece or set of equipment. This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.

This permit has been granted on the basis of design information presented with its application. Changes of design or equipment may require Department approval pursuant to the *Rules for the Control of Air Pollution in Idaho*, IDAPA 58.01.01.200, et seq.

ADMINISTRATOR, IDAHO FALLS REGIONAL OFFICE
DEPARTMENT OF ENVIRONMENTAL QUALITY

DATE: July 28, 200(

PERMIT TO CONSTRUCT
PERMITTEE, PROJECT, AND LOCATION

Department of Energy, INEEL
Specific Manufacturing Capabilities (SMC) Project
Test Area North

PERMIT NUMBER

023 - 00001

SOURCE

TAN 606 - Carpenter Shop

1. EMISSION LIMITS

1.1 Particulate Emission Limits

Particulate matter (PM) and PM-10 emissions from stack TAN 606-005 shall not exceed any corresponding emission rate listed in Appendix A.

1.2 Opacity Limit

Visible emissions from stack TAN 606-005 shall not exceed 20 percent opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minutes, as required by IDAPA 58.01.01.625 (*Rules for the Control of Air Pollution in Idaho*) and as determined using the procedures contained in IDAPA 58.01.01.625.

2. OPERATING REQUIREMENTS

2.1 Hours of Operation

Carpenter shop operations shall not exceed 50 hours per week, 52 weeks per year.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT
PERMITTEE, PROJECT, AND LOCATION

Department of Energy, INEEL
Specific Manufacturing Capabilities (SMC) Project
Test Area North

PERMIT NUMBER

0	2	3	-	0	0	0	0	1

SOURCE

TAN 606- Paint Booth

1. EMISSION LIMITS

1.1 Criteria Pollutants

PM, PM-10, and volatile organic compound (VOC) emissions from stacks TAN 606-026 and TAN 606-027 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.2 Toxic Pollutants

Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to injure or unreasonably affect human or animal life or vegetation as required by IDAPA 58.01.01.161.

1.3 Opacity Limit

Visible emissions from stacks TAN 606-026 and TAN 606-027 shall not exceed 20 percent for a period or periods aggregating more than three (3) minutes in any sixty (60) minutes as required by IDAPA 58.01.01.625 (*Rules for the Control of Air Pollution in Idaho*) and as determined using procedures contained in IDAPA 58.01.01.625.

2. OPERATING REQUIREMENTS

2.1 Usage Limits

The permittee shall be limited to 80 gallons of paint/solvent per week and 2,080 gallons of paint/solvent per calendar year.

3. MONITORING REQUIREMENTS

3.1 Toxic Emission Analysis

The permittee shall perform a toxic emission analysis for any paint or solvent not included in the permit application. If calculated toxic emission rates are greater than the screening level emission limits contained in IDAPA 58.01.01.585 or 58.01.01.586, the permittee must obtain DEQ approval prior to use.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT PERMITTEE, PROJECT, AND LOCATION	PERMIT NUMBER
Department of Energy, INEEL Specific Manufacturing Capabilities (SMC) Project Test Area North	023 - 00001
SOURCE	
TAN 606- Paint Booth	

4. REPORTING AND RECORDKEEPING REQUIREMENTS

4.1 Toxic Emission Analyses

The permittee shall maintain on-site copies of any toxic emission analyses performed. These analyses shall be made available to DEQ representatives upon request.

4.2 Paint/Solvent Usage

The permittee shall maintain a record of the amount of paint/solvent used per day. These records shall be maintained on-site for two years and shall be made available to DEQ representatives upon request.

PERMIT TO CONSTRUCT
PERMITTEE, PROJECT, AND LOCATION

Department of Energy, INEEL
Specific Manufacturing Capabilities
Test Area North

PERMIT NUMBER

0	2	3	-	0	0	0	0	1

SOURCE

TAN 629 - Phase I

1. EMISSION LIMITS

1.1 Radionuclide Emissions

This source shall operate within the requirements of EPA National Emission Standards for Radionuclide Emissions from Department of Energy Facilities (Code of Federal Regulations 40 Part 61.90). Radionuclide emissions from stack TAN 629-013 shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater than 10 millirems per year effective dose equivalent.

1.2 Particulate Emissions

PM and PM-10 emissions from stacks TAN 629-002 and TAN 629-013 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.3 VOC Emissions

VOC emissions from stacks TAN 629-002 and TAN 629-013 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.4 Benzene Emissions

Benzene emissions from stack TAN 629-002 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.5 Styrene Emissions

Styrene emissions from stack TAN 629-002 shall not exceed any corresponding emission rate limit listed in Appendix A.

2. OPERATING REQUIREMENTS

2.1 HEPA Filters

The permittee shall operate the stack 629-013 HEPA filters (identified as F-AE-601 and F-AE-602) as specified in Appendix B except that the removal efficiency shall be maintained at or above 99 percent.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT PERMITTEE, PROJECT, AND LOCATION	PERMIT NUMBER
Department of Energy, INEEL Specific Manufacturing Capabilities Test Area North	023 - 00001
SOURCE	
TAN 629 - Phase I	

3. MONITORING REQUIREMENTS

3.1 HEPA Filters

The permittee shall monitor the stack 629-013 HEPA filters (identified as F-AE-601 and F-AE-602) as specified in Appendix B.

4. REPORTING AND RECORDKEEPING REQUIREMENTS

4.1 HEPA Filters

The permittee shall submit a report on HEPA filter operation as specified in Appendix B of this permit.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT PERMITTEE, PROJECT, AND LOCATION	PERMIT NUMBER
Department of Energy, INEEL Specific Manufacturing Capabilities (SMC) Project Test Area North	023 - 00001
SOURCE	
TAN 677 - Welding Operations	

1. EMISSION LIMITS

1.1 Particulate Emissions

PM and PM-10 emissions from stack TAN 677-030 shall not exceed any corresponding emission rate limit listed in Appendix A.

2. REPORTING AND RECORDKEEPING REQUIREMENTS

2.1 Weld Material Usage

The permittee shall maintain a record of the amount of weld material used per calendar year. This record shall be maintained on-site for two years and shall be made available to DEQ representatives upon request.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT
PERMITTEE, PROJECT, AND LOCATION

Department of Energy, INEEL
Specific Manufacturing Capabilities (SMC) Project
Test Area North

PERMIT NUMBER

0	2	3	-	0	0	0	0	1

SOURCE

TAN 679 - Phase II

1. EMISSION LIMITS

1.1 Radionuclide Emissions

This source shall operate within the requirements of EPA National Emission Standards for Radionuclide Emissions from Department of Energy Facilities (Code of Federal Regulations 40 Part 61.90). Radionuclide emissions from stacks TAN 679-022, TAN 679-023, TAN 679-024, TAN 679-025, TAN 679-026, and TAN 679-027 shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater than 10 millirems per year effective dose equivalent.

1.2 Particulate Emissions

PM and PM-10 emissions from stack TAN 679-099 and stacks TAN 679-022, TAN 679-023, and TAN 679-027 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.3 VOC Emissions

VOC emissions from stacks TAN 679-022, TAN 679-023, TAN 679-024, TAN 679-025, TAN 679-026, and TAN 679-027 shall not exceed any corresponding emission rate limit listed in Appendix A.

2. OPERATING REQUIREMENTS

2.1 HEPA Filters

The permittee shall operate the stack TAN 679-022, TAN 679-023, TAN 679-024, TAN 679-025, TAN 679-026 and TAN 679-027 HEPA filters as specified in Appendix B.

2.2 Production Limits

The permittee shall not process more than 54 parts per 10-hour shift for R&D production or 125 parts per 10-hour shift for regular production.

3. MONITORING REQUIREMENTS

3.1 HEPA Filters

The permittee shall monitor the stack TAN 679-022, TAN 679-023, TAN 679-024, TAN 679-025, TAN 679-026, and TAN 679-027 HEPA filters as specified in Appendix B.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT PERMITTEE, PROJECT, AND LOCATION	PERMIT NUMBER
Department of Energy, INEEL Specific Manufacturing Capabilities (SMC) Project Test Area North	023 - 00001
SOURCE	
TAN 679 - Phase II	

4. REPORTING AND RECORDKEEPING REQUIREMENTS

4.1 HEPA Filters

The permittee shall submit a report on HEPA filter operation as specified in Appendix B of this permit.

4.2 Weld Material Usage

The permittee shall maintain a record of the amount of weld material used per calendar year. This record shall be maintained on-site for two years and shall be made available to DEQ representatives upon request.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT
PERMITTEE, PROJECT, AND LOCATION

Department of Energy, INEEL
Specific Manufacturing Capabilities (SMC) Project
North Test Area

PERMIT NUMBER

0	2	3	-	0	0	0	0	1

SOURCE

TAN 681 - Process Reclamation Facility

1. EMISSION LIMITS

1.1 Radionuclide Emissions

This source shall operate within the requirements of EPA National Emission Standards for Radionuclide Emissions from Department of Energy Facilities (Code of Federal Regulations 40 Part 61.90). Radionuclide emissions from stacks TAN 681-012, TAN 681-018, and TAN 681-020 shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater than 10 millirems per year effective dose equivalent.

2. OPERATING REQUIREMENTS

2.1 HEPA Filters

The permittee shall operate the stack TAN 681-012, TAN 681-018, and TAN 681-020 HEPA filters as specified in Appendix B.

3. MONITORING REQUIREMENTS

3.1 HEPA Filters

The permittee shall monitor the stack TAN 681-012, TAN 681-018, and TAN 681-020 HEPA filters as specified in Appendix B.

4. REPORTING AND RECORDKEEPING REQUIREMENTS

4.1 HEPA Filters

The permittee shall submit a report on HEPA filter operation as specified in Appendix B of this permit.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT PERMITTEE, PROJECT, AND LOCATION	PERMIT NUMBER
Department of Energy, INEEL Specific Manufacturing Capabilities (SMC) Project Test Area North	023 - 00001

SOURCE

Fuel Burning Equipment

1. EMISSION LIMITS

1.1 Criteria Pollutants

PM, PM-10, SO_2 (sulfur dioxide), NO_x, CO (carbon monoxide) and VOC emissions from the boilers shall not exceed any corresponding emission rate limit listed in Appendix A.

1.2 Opacity Limits

Visible emissions from the boiler and generator stacks shall not exceed 20 percent opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minutes as required in IDAPA 58.01.01.625 and as determined using procedures contained in IDAPA 58.01.01.625.

1.3 Exhaust Grain Loading

The particulate matter (PM) emissions from each boiler shall not exceed 0.05 grains per dry standard cubic foot of effluent gas corrected to three percent (3%) oxygen by volume when Number 2 fuel oil (ASTM Grade 2) is combusted, as required in IDAPA 58.01.01.676.

2. OPERATING REQUIREMENTS

2.1 Fuel Sulfur Content

The sulfur content of the Grade 2 fuel oil shall not exceed 0.5 percent by weight as required by IDAPA 58.01.01.728.

3. MONITORING REQUIREMENTS

3.1 Performance Test

The permittee has conducted and demonstrated compliance with section 1.3 and the following initial source testing requirements, as required by the original issuance of this Permit to Construct:

PERMIT TO CONSTRUCT PERMITTEE, PROJECT, AND LOCATION	PERMIT NUMBER
Department of Energy, INEEL Specific Manufacturing Capabilities (SMC) Project Test Area North	023-00001
SOURCE	
Fuel Burning Equipment	

The permittee shall conduct a performance test, in accordance with General Provision F of this permit, to measure sulfur dioxide emissions from one of the boilers using U.S. EPA Reference Method 6 (40 CFR Appendix A) or an equivalent method approved by the DEQ. The sulfur content of the fuel burned in the test shall be reported with the performance test results.

4. REPORTING AND RECORDKEEPING REQUIREMENTS

4.1 Performance Test Report

The performance test data and results as required in 3.1 shall be reported to DEQ within 30 days of performing the test.

DATE: July 28, 2000

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PERMIT TO CONSTRUCT PERMITTEE, PROJECT, AND LOCATION	PERMIT NUMBER
Department of Energy, INEEL Specific Manufacturing Capabilities (SMC) Project Test Area North	023 - 00001

SOURCE

Refuse Incinerator

1. EMISSION LIMITS

1.1 Particulate

The refuse incinerator shall be operated in accordance with IDAPA 58.01.01.786 at a particulate emission rate of 0.2 pound of particulate per 100 pounds of refuse burned.

1.2 Opacity Limit

Visible emissions from the refuse incinerator stack shall not exceed 20 percent opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minutes as required by IDAPA 58.01.01.625 and as determined using the procedures contained in IDAPA 58.01.01.625.

2. OPERATING REQUIREMENTS

2.1 Incinerator Operation

All personnel authorized to operate and/or maintain this incinerator shall be thoroughly trained and knowledgeable to perform their respective functions correctly as specified in the Operating and Maintenance documents originally provided by the Permittee.

3. MONITORING REQUIREMENTS

3.1 Performance Test

The permittee has conducted and demonstrated compliance with the following initial source testing requirements, as required by the original issuance of this Permit to Construct:

In accordance with IDAPA 58.01.01.786.03, the appropriate test method shall be EPA Method 5 contained in 40 CFR Part 60 or such comparable and equivalent method approved in accordance with IDAPA 58.01.01.157.02.d. Test methods shall also comply with IDAPA 58.01.01.157.

PERMIT TO CONSTRUCT
PERMITTEE, PROJECT, AND LOCATION

Department of Energy, INEEL
Specific Manufacturing Capabilities (SMC) Project
Test Area North

PERMIT NUMBER

0	2	3	-	0	0	0	0	1

SOURCE

2B Paint Process

1. EMISSION LIMITS

1.1 Radionuclide Emissions

This source shall operate within the requirements of U.S. Environmental Protection Agency (EPA) National Emission Standards for Radionuclide emission from Department of Energy Facilities (Code of Federal Regulations 40 Part 61.90).

1.2 VOCs

Volatile organic compounds (VOCs) from stacks TAN 629-012 and TAN 629-014 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.3 Particulate

PM and PM-10 from stacks TAN 629-012 and TAN 629-014 shall not exceed any corresponding emission rate limit listed in Appendix A.

2. OPERATING REQUIREMENTS

2.1 HEPA Filters

The permittee shall operate the 2B Paint Process HEPA filters as specified in Appendix B.

3. MONITORING REQUIREMENTS

3.1 HEPA Filters

The permittee shall monitor the 2B Paint Process HEPA filters as specified in Appendix B.

4. REPORTING AND RECORDKEEPING REQUIREMENTS

4.1 HEPA Filters

The permittee shall submit a report on HEPA filter operation as specified in Appendix B of this permit.

DATE: July 28, 2000

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APPENDIX A
U.S. Department of Energy - Idaho National Engineering and Environmental Laboratory
Specific Manufacturing Capabilities (SMC) Project

Emission Unit	PM/PM-10	Styrene	Benzene	VOC	RAD
	T/yr	T/yr	T/yr	T/yr	
TAN 606-005 Carpenter Shop	4.38				
TAN 606-026 & 027 Paint Booth (2 stacks)	0.16			6.24	
TAN 629-002 Process Stack	0.007	0.0085	0.0085	0.0403	
TAN 629-013 Process Stack Welding and Cold Machine Shop	0.0063			0.006	b, c
TAN 677-030 Maintenance Welding, Production Plasma Arc Cutting	0.0078				
TAN 679-022, 023, 024 North Manufacturing Process (3 stacks)	3.3E-9			0.004	b, c
TAN 679-025, 026, 027 South Manufacturing Process Area (3 stacks)				0.048	c
TAN 679-099 Maintenance Welding Shop Hood	0.001				
TAN 629-012, 014 2B Paint Process	0.5			4.1	
TAN 681-012, 018, 020 Process Stacks					c

a = As determined by a pollutant specific U.S. EPA reference method, or Department approved alternative, or as determined by the Department's emission estimation methods used in this permit analysis.
b = Combined limit of 0.1 mrem/yr for TAN 679-013, TAN 679-022, TAN 679-023, and TAN 679-024.
c = Radionuclide emissions from these sources shall not by themselves, or in combination with emissions from other INEEL sources, cause any individual to receive a dose of greater than 10 millirems per year effective dose equivalent.

DATE: July 28, 2000

APPENDIX A (continued)
U.S. Department of Energy - Idaho National Engineering and Environmental Laboratory
Specific Manufacturing Capabilities (SMC) Project[a]
Fuel Burning Equipment

Emission Unit	PM/PM-10		SO_2		CO		NOx		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Two (2) 25 MM BTU/hr Boilers and one (1) 60 HP Boiler	0.57	2.21	19.83	79.33	1.39	5.52	5.53	22.13	0.056	0.22

a = As determined by a pollutant specific U.S. EPA reference method, or Department approved alternative, or as determined by the Department's emission estimation methods used in this permit analysis.

DATE: July 28, 2000

APPENDIX B

HEPA FILTER GENERAL REQUIREMENTS

1. MONITORING REQUIREMENTS

1.1. The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter or HEPA filter bank, as applicable. The first test shall be conducted within 90 days of startup and subsequent tests shall be conducted at least every (twelve) 12 months thereafter, per Nuclear Air Cleaning Handbook, ERDA 76-21, Section 8.3.5, "Frequency of Testing." Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test." In addition, after replacement or installation of a HEPA filter, an in-place efficiency test shall be conducted within ninety (90) days of the date that the HEPA filter is placed in operation.

1.2. A pressure monitoring device shall be maintained to enable monitoring of the pressure drop across each certified HEPA filter bank. The pressure drop monitoring equipment shall be maintained in good working order. The pressure drop shall be recorded once on a daily basis when the HEPA filter bank is in use.

2. OPERATING REQUIREMENTS

2.1. Certified HEPA filter efficiency shall be maintained at or above 99.97 percent removal efficiency as determined by the guidelines of ASME N510, Section 10.

2.2. If the removal efficiency of a certified HEPA filter or HEPA filter bank, as applicable, falls below 99.97 percent as determined by ASME N510, Section 10, certified filters shall be isolated or replaced within (ten) 10 days until the required efficiency is achieved.

2.3. Each certified HEPA filter shall be operated at a pressure drop that is limited to less than 5.0 inches water column. If the total pressure drop across the HEPA filter bank exceeds 5.0 inches water column, the permittee shall isolate it or replace it within ten (10) days.

2.4. Within (ninety) 90 days of issuance, the permittee shall submit to DEQ an operating and maintenance (O&M) manual which describes the procedures which will be followed to assure compliance with Sections 1 and 2 of this permit Appendix.

2.5. Within 90 days of issuance, the permittee shall submit to DEQ a quality assurance program, based on ASME N510 guidelines, which defines methods and procedures that will be used to assure that quality and representative data are collected while performing in-place HEPA filter tests and measuring pressure drops across HEPA filters banks.

3. REPORTING REQUIREMENTS

3.1. The results of the initial in-place HEPA filter bank test conducted using the guidelines of ASME N510, Section 10 shall be reported to DEQ within thirty (30) days of performing the test.

3.2. The permittee shall submit a quarterly statement to DEQ, based on a quarter calendar year and due thirty (30) days after the end of each quarter, stating that all the requirements under this Appendix have been met. In addition, records of the following information shall be kept on site and shall be made available for DEQ review upon request:

3.2.1 The dates and results of all in-place efficiency tests using the guidelines of the ASME N510 HEPA filter bank in-place test method.

3.2.2 The dates of replacement of HEPA filter elements.

DATE: July 28, 2000

3.2.3 The dates when the HEPA filter pressure drop exceeded the requirements of Section 2.3 of th permit Appendix.

DATE: July 28, 2000

PERMIT TO CONSTRUCT GENERAL PROVISIONS

A. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the *Rules for the Control of Air Pollution in Idaho*. The emission of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the *Rules for the Control of Air Pollution in Idaho*, and the Environmental Protection and Health Act, Idaho Code 39-101, et seq.

B. The Permittee shall at all times (except as provided in the *Rules for the Control of Air Pollution in Idaho*) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

C. The Permittee shall allow the Director, and/or the authorized representative(s), upon the presentation of credentials:

1. To enter at reasonable times upon the premises where an emission source is located, or in which any records are required to be kept under the terms and conditions of this permit; and
2. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and require stack emission testing in conformance with IDAPA 58.01.01.157 when deemed appropriate by the Director.

D. Nothing in this permit is intended to relieve or exempt the Permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.

E. The Permittee shall notify DEQ, in writing, of the required information for the following events within five (5) working days after occurrence:

1. Initiation of Construction - Date
2. Completion/Cessation of Construction - Date
3. Actual Production Startup - Date
4. Initial Date of Achieving Maximum Production Rate - Production Rate and Date

F. If emission testing is specified, the Permittee must schedule such testing within sixty (60) days after achieving the maximum production rate, but not later than one hundred and eighty (180) days after initial startup. Such testing must **strictly** adhere to the procedures outlined in IDAPA 58.01.01.157 and shall not be conducted on weekends or state holidays without prior written DEQ approval. Testing procedures and specific time limitations may be modified by DEQ by prior negotiation if conditions warrant adjustment. DEQ shall be notified at least fifteen (15) days prior to the scheduled compliance test. Any records or data generated as a result of such compliance test shall be made available to DEQ upon request.

The maximum allowable operating rate shall be limited to 120% of the average operating rate attained during any performance test period, for which a test protocol has been granted prior approval by DEQ, unless (1) the test demonstrates noncompliance, (2) a more restrictive operating limit is specified elsewhere in this permit, or (3) at such an operating rate, emissions would exceed any emission limit(s) set forth in this permit.

G. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

DATE: July 28, 2000