DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
EMERGENCY HAZARDOUS WASTE TREATMENT PERMIT

Permittee: Technical Ordnance, Inc.
47600 – 180th Street
Clear Lake, SD 57226-5469

Permit Number: SDD981549983-2010E

Pursuant to South Dakota Codified Laws (SDCL) Chapter 34A-11, and the Administrative Rules of South Dakota (ARSD) Article 74:28 promulgated by the South Dakota Board of Minerals and Environment, an Emergency Permit is issued to Technical Ordnance, Inc. (hereinafter called the Permittee), identification number SDD981549983, to operate an emergency hazardous waste treatment operation. The site is located at 47600 – 180th Street, Clear Lake, South Dakota (44.777798 degrees North Latitude; 96.664098 degrees West Longitude).

The Permittee must comply with all terms and conditions of this Emergency Permit. This Emergency Permit consists of conditions contained in Module I, the Attachment referenced in the Module, the applicable statutory requirements under SDCL Chapter 34A-11 and rules contained in ARSD Article 74:28.

This Emergency Permit is based on the premise that the information submitted in the Emergency Permit Application, the cover letter dated October 7, 2010, and subsequent information provided by the Permittee (hereafter referred to as the Application) is accurate and that the facility will be operated as specified in the Application.

Any inaccuracies found in the submitted information may be grounds for the termination, revocation and reissuance or modification of this Emergency Permit in accordance with SDCL Section 34A-11-15 and ARSD 74:28:26:01 (adopting by reference Title 40 Code of Federal Regulations (40 CFR) Section 270.61(b)(4)). The Permittee must inform the Department in writing of any deviation from or changes in the information in the Application that would affect the Permittee's ability to comply with the applicable rules or Emergency Permit conditions.

This Emergency Permit is effective as of October 18, 2010, and shall remain in effect until April 16, ~~2010~~ 2011, unless revoked and reissued under SDCL Section 34A-11-15, SDCL Chapter 1-26, and ARSD Section 74:28:26:01 (adopting by reference 40 CFR Section 270.61); or terminated under SDCL Section 34A-11-15, SDCL Chapter 1-26, and ARSD Section 74:28:26:01 (adopting by reference 40 CFR Section 270.61(b)(4)).

Signature: _____ Date: 10/18/10

Steven M. Pirner, Secretary
Department of Environment and Natural Resources

APPENDIX

MODULE I – PERMIT CONDITIONS

A. EFFECT OF PERMIT

The Permittee is allowed to treat hazardous waste in accordance with the conditions of this Emergency Permit. Treatment of hazardous waste not authorized in this Emergency Permit is prohibited. Compliance with this Emergency Permit constitutes compliance, for the purposes of enforcement, with South Dakota Codified Laws (SDCL) Chapter 34A-11 and the Administrative Rules of South Dakota (ARSD) Article 74:28. Issuance of this Emergency Permit does not convey any property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws, rules or ordinances.

Compliance with the terms of this Emergency Permit does not constitute a defense to any order issued or any action brought under SDCL Chapter 34A-11 or Sections 3008(a), 3008(h), 3013 or 7003 of the federal Resource Conservation and Recovery Act (RCRA); Sections 106(a), 104 or 107 of the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other federal or state law providing for protection of public health or the environment.

B. EMERGENCY TREATMENT OF ENERGETIC WASTES

This permit allows the on-site treatment of certain energetic wastes generated by the Permittee. Only wastes generated on-site by the Permittee may be treated under this permit. The energetic wastes generated, stored and treated on-site are listed in the following table:

Waste Description	Hazardous Waste Code(s)
Explosive substances (pyrotechnic scrap)	D003
Detonating fuzes	D003
Boosters without Detonators	D003
Cartridges, Power Device	D003, D005, D007, D008
Tracers for ammunition	D003
Release devices, Explosives	D003
Ignitors	D003, D008
Detonators, electric	D003, D008
Detonators for ammunition	D003, D007, D008
Detonators, non-electric	D003, D008

C. WASTE STORAGE

Off-specification energetic wastes awaiting emergency treatment under this permit shall be placed in sealed, explosion-proof containers and stored in the dedicated on-site bunkers. Each storage bunker is designed to store a specified amount of energetic material, measured in net explosive weight (NEW). The storage of energetic wastes in each bunker shall not exceed the design limit for that bunker. The maximum amount of energetic waste to be stored on-site at any one time is 700 pounds NEW. Waste storage will not exceed 90 days, as allowed under the Large Quantity Generator (LQG) requirements for temporary on-site storage. Should extenuating circumstances require wastes be stored beyond the 90 day LQG allowance, Technical Ordnance shall request a 30-day extension prior to the 90-day limit.

D. WASTE TREATMENT (DETONATION/DEACTIVATION)

Emergency treatment of wastes under this permit shall occur only in the designated detonation/deactivation area described in the Permit Application (Attachment A, pages 1-6 and attachment 2). The treatment process shall be conducted as described within the Permit Application (Attachment A, pages 1-6 and attachment 2). The average daily amount of waste deactivated, calculated over the duration of this permit, shall not exceed 10 pounds NEW; the total amount of waste to be deactivated under this Emergency Permit will be approximately 2,000 pounds NEW. Treatment shall occur during normal operating hours as specified in Attachment A, Page A62.

E. CLOSURE PLAN

Upon termination of the detonation/deactivation activities conducted under this Emergency Permit, , Technical Ordnance shall submit a closure plan to the department. This plan shall describe the steps needed to remove or decontaminate the former detonation/deactivation area. The plan must include a description and location of areas potentially contaminated by the treatment process; the contaminants potentially released; an assessment of potential impact to local ground water; procedures to assess the extent of any ground or surface water and soil contamination; and measures that will be taken to remediate or remove any contamination if present.

ATTACHMENT A

Emergency Permit Application

October 7, 2010

Certified Mail – Return Receipt Requested

State of SD DENR
Attention: Carrie Jacobson
Environmental Senior Scientist
Joe Foss Building, Waste Management
523 East Capitol
Pierre, South Dakota 57501

Dear Ms. Jacobson:

Subject: Emergency RCRA Permit Application per 40 CFR §270.61 (ARSD 74:28:26:01)

Technical Ordnance, Inc. (TKO) owns and operates an energetic device manufacturing facility located near Clear Lake, South Dakota. Operations at the facility results in generation of energetic waste.

There are a number of energetic scrap components generated at the facility during the manufacturing process. When components don't meet specifications, they must be treated and/or destroyed. While some components can be sent offsite for destruction, others cannot be shipped offsite because they cannot be classified in a manner sufficient to meet Department of Transportation (DOT) regulations. The emergency permit is requested pursuant to the Settlement and Compliance Agreement dated October 4, 2010 between DENR and TKO, specifically paragraph 8(a) to address off-specification materials. Further, in accordance with paragraph 8(d) of the Settlement and Compliance Agreement, a permit application fee of $50,000 is included with this application.

TKO utilizes bunkers located on-site to store off-specification components. TKO treats/destroys this waste stream by detonation/deactivation at a dedicated area north of the manufacturing facilities. We are requesting that the South Dakota Department of Environment and Natural Resources (SD DENR) grant an Emergency RCRA Permit per 40 CFR §270.61 (ARSD 74:28:26:01) to allow detonation/deactivation of the off-specification components.

TKO has developed an Emergency Permit Application that includes information pertinent to the requirements in 40 CFR §270.61. This Emergency Permit Application is included as Attachment 1 to this letter. Furthermore, TKO has developed an internal procedure that documents energetic and hazardous waste management procedures at the facility. This document is identified as TKOWI 4.4.6-39 and is included as Attachment 2 to this letter.

TECHNICAL ORDNANCE, INC.
47600 180the St. Clear Lake, SD 57226-5469
TELEPHONE: (605) 874-2631 TELEFAX: (605) 874-8156

TKO is in the process of evaluating long term treatment options for the off-specification components. The temporary emergency RCRA Permit for detonation/deactivation should be considered an interim step as TKO completes a feasibility study for long term solutions to handle the waste and obtains approval of a Part B RCRA Permit Application. Thus, it is likely the company will need to operate under the Emergency RCRA Permit for up to 180 days.

If you have question concerning this request, please contact Ms. Karen Esche, HSE Manager at (605) 874-3428.

Sincerely,
Technical Ordnance, Inc.

Chris Piec
Vice President, Operations

Cc: Bill Currer, Chemring Energetic Devices
Karen Esche, Technical Ordnance, Inc.
Vonni Kallemeyn, South Dakota Department of Environment and Natural Resources
Leif Thompson, Technical Ordnance, Inc.

TECHNICAL ORDNANCE, INC.
47600 180the St. Clear Lake, SD 57226-5469
TELEPHONE: (605) 874-2631 TELEFAX: (605) 874-8156

ATTACHMENT 1

EMERGENCY PERMIT APPLICATION

Purpose: Pursuant to the terms and conditions of the Settlement and Compliance Agreement dated August 2010, this Emergency Permit Application is submitted to obtain permission to store and treat energetic wastes by a detonation/deactivation process until such time as TKO can complete construction and begin operation of a RCRA Subpart X Deactivation Unit pursuant to a Part B Permit.

Note: More detailed information on TKO's compliance with the Resource Conservation and Recovery Act (RCRA) can be found in TKO's RCRA Compliance Program (included as Attachment 2). The TKO RCRA Compliance Program is continually reviewed and revised to reflect improved operation at the facility. The version included in this submittal is current as of the submittal date. Only items that are applicable to the detonation/deactivation process are included in this document, Attachment 1.

Att

General Description
40 CFR §270.14(b)(1)

Overall Facility Description

The Technical Ordnance, Inc. (TKO) energetic device manufacturing facility is located outside the city limits of Clear Lake, South Dakota. The facility is located on a one square mile plot of land and is surrounded by farm land used for hay and grazing livestock. A facility plot plan is included as Attachment 3. The energetic waste storage areas are located inside bunkers at the northwest corner of the production area and the detonation/deactivation site is located in a recessed area on the northern portion of the facility property.

The address for the facility is:

Technical Ordnance, Inc.
47600 180th Street
Clear Lake, South Dakota 57226

The facility consists of over 20 buildings that include administration, manufacturing, maintenance, waste handling and storage. Additionally, there are over 50 energetic storage bunkers that are utilized for storing raw materials, product, and energetic waste generated at the facility.

The products manufactured at this facility are prominent in the CAD/PAD market with sales to the missiles, munitions, space program and ammunition prime contractors. The products include:

- Cartridge-activated devices, propellant-actuated devices (CAD/PAD)
- Electric and mechanical initiators
- Gas initiators and gas generators
- Time delays
- Ammunition pellets
- Arm/Fire devices
- Stage Separation Subsystems
- Retention devices
- Impulse cartridges
- Separation nuts

- Pyro valves
- Cutting devices
- Explosive bolts
- Thrusters
- Actuators
- Fuses and fuse subcomponents

The energetic wastes generated at this facility which are to be stored and treated onsite in accordance with the emergency RCRA permit are off-specification products including subassemblies. The maximum amount of energetic waste to be stored will be 700 lb net explosive weight (NEW). The average daily amount generated for the emergency permit period is expected to be 3 lb NEW. The average daily amount to be deactivated will be 10 lb NEW. The amount of waste to be deactivated during the emergency permit period will be approximately 2,000 lb NEW.

Generation and Storage of Off-Specification Material

Off-specification energetic materials, including subassemblies, are produced throughout manufacturing process areas at the TKO facility. Pursuant to the terms and conditions of this Emergency Permit Application, the energetic wastes generated at TKO will be treated on-site by a detonation/deactivation process in a dedicated hazardous waste treatment unit described in detail herein.

Prior to detonation/deactivation, off-specification energetic wastes will be handled by being placed in specially designed containers used to safely contain materials for transport to dedicated storage bunkers and finally, for treatment by detonation/deactivation. Consistent with procedures utilized to safely transport energetic products, the off-specification energetic wastes (and subassemblies associated with the energetics) are transported in minimum lot sizes to limit consequences in the event of an unplanned detonation. The on-site transportation of the waste energetic materials is accomplished by highly trained personnel with specialized OSHA and Process Safety Management training, in the same dedicated vehicles that are used to move energetic products manufactured on the site.

Energetic wastes destined for on-site treatment by detonation/deactivation will be transported in sealed explosion-proof containers from the point of generation to dedicated storage bunkers that are specifically designed for safe storage of energetic materials. Each bunker is designed to safely store 100 lb net explosive weight (NEW) as well as the associated subassemblies, packaging and other containers. TKO ensures that the NEW limit is not exceeded in any

bunker. (Each storage bunker utilizes a log system to record the type and nature of the material, the amount, and the date the material was put into storage.) A current inventory of energetic wastes including the bunker identification and the amount of energetic waste material currently stored in each bunker are identified in Table 1.

In addition to waste in storage as of the date of the Emergency Permit Application, TKO generates approximately 3 lb NEW waste materials each day. The plan to address accumulated as well as newly-generated energetic waste is to treat the oldest waste first, to reduce waste in inventory. It is expected that upon approval of the Emergency Permit, the Company will be able to treat 10 lbs NEW per day; It will be TKO's intent to treat waste at a rate necessary to ensure no waste energetics are stored longer than 90 days.

Detonation/Deactivation Location and Description

TKO will conduct waste detonation/deactivation activities according to standard operating procedures developed by TKO and identified as TKOWI 4.4.6-40 (see attached). Procedures include specific instructions for the handling and transport of energetic waste from the production buildings to the storage bunkers, from storage bunkers to the treatment unit, and the conduct of detonation/deactivation activities in the unit. The focus of the procedures is the minimization of the opportunity for, and effects of, unexpected detonation, as well as documentation of safe handling and operating practices necessary to protect personnel.

The treatment process will involve the remote, and safe, detonation/deactivation of off-specification energetic materials and related subassemblies, in a dedicated area, under controlled conditions, by trained operators. The detonation/deactivation area is located approximately 650 feet south of the north facility boundary and 2,400 feet west of the eastern facility boundary (see Facility Plot Plan – Attachment 3). The detonation/deactivation area is located in a recessed sand pit area and is approximately 88 feet by 120 feet. The actual detonation/deactivation will occur on a bermed concrete slab bearing a large, cylindrical, metal tank with vents (approximately 5' x 8'). A remote protective concrete observation barrier is located east of where the primary concrete slab and sand pit are located (see Attachment 3). As explained in more detail below, operators will remotely energize off-specification energetic material to cause detonation, and will monitor the progress of the detonation from inside the protective concrete barrier.

Detonation/deactivation activities will only be conducted when weather conditions permit safe deactivation of energetic material. Detonations will not be conducted during periods of

Table 1
Energetic Waste Storage Inventory in TKO Bunkers

Bunker Identification	Location	Gross Weight (lb)	NEW (lb)
Type I Outdoor Explosive Magazine			
Hazardous Waste	B35	12.934	7.211
Hazardous Waste	B36	0	0
Hazardous Waste	B37	0	0
Hazardous Waste	B38	168.904	94.176
Hazardous Waste	B39	15.525	8.656
Hazardous Waste	B40	179.096	99.858
Hazardous Waste	B42	513.148	286.116

A8

precipitation, or if there is a threat of precipitation. The prevailing winds must be less than 25 miles per hour, excluding gusts. Detonation activities will not be conducted when existing thunderstorms or likely electrified convective cells are within 20 miles of the site. Cells with inbound movement at 20 miles result in immediate removal of all energetic material and personnel from the deactivation area. However, cells with passing or tangential movement at 15-20 miles will result in securing all energetic material in transport containers and vehicles and the suspended operation will resume when outbound movement is verified at 20 miles.

Appropriate controls will be employed to assure there are no unplanned detonations. Such controls will include keeping explosives such as boosters, blasting caps, and unstable materials separated during detonation/deactivation operations. Finally, post-detonation wastes, such as wires, paper, plastic, packaging, ash, and fragments will be frequently cleared from the detonation/deactivation area, and properly disposed, to assure safe operation.

Waste materials transported to, and used at, the deactivation area will include explosives such as boosters, blasting caps and other off-specification material and subassemblies. Prior to detonation/deactivation the waste energetics will be placed in closed metal containers and will be placed into a transport vehicle. Materials will be staged at the deactivation area in minimal quantities. Equipment used during the detonation/deactivation process will include troughs (for example, burning loose powder/pellets), containment (for example, the metal tank), and consumable material such as fuels and wood. Equipment will be safely stored out of the way, and will remain out of the reasonable line-of-fire or line of sight when not in use.

Wastes generated during the detonation/deactivation process will include wires, paper, plastic, packaging, ash and fragments. At completion of detonation, waste materials will be cleared from the deactivation area and thoroughly examined to assure the absence of unexploded explosives. If the wastes are determined to be hazardous, they will be placed in the hazardous waste container.

All operations associated with detonation/deactivation at the deactivation area will be attended by two operators. The first operator will assemble the energetic material to be deactivated in the tank. The first operator will control the fire line and arming of the firing circuit. The second operator will assist the first operator and will be responsible for documentation related to the destruction of energetic materials. Because a variety of energetic wastes are expected to be treated, a variety of materials and deactivation methods and equipment are likely to be utilized; thus operators must remain alert, and will augment procedures to constrain explosive reactions within the deactivation area using their best judgment.

The second operator will stay within the concrete observation barrier. The first operator will unshort the blasting cap, connect the fire line, and retreat to the concrete observation barrier. Once both operators are safely in the concrete observation barrier, the charge will be remotely detonated. Operators will remain in the concrete observation barrier area to avoid projectiles, and will exit only when the area is free of smoke and detonation is complete.

At a minimum the following items will be present during detonation/deactivation operations: one commercial fire extinguisher, two pressurized water extinguishers, telephone, eyewash station, first aid kit and emergency response team listing. Explosive fires that might occur will be handled in accordance with Section 6.4.2 of the Contingency Plan included in the RCRA Compliance Program document (included as Attachment 2); detonation operators will not fight explosive fires, but ensure the area is immediately vacated.

Once it is determined that any batch of materials for deactivation has been successfully detonated, the operators will load a new batch of energetic material, and repeat the steps outlined above.

Chemical and Physical Analysis
40 CFR §270.14(b)(2)

In general, the energetic waste generated at the TKO facility can be substantially characterized by knowledge of the process where the waste is generated. The non-conforming energetic waste streams have basically the same composition as the product; therefore, the waste characterization is based on the product composition. All approved waste characterization profiles are kept in the operating record in the HSE files. These profiles contain all the information which must be known to treat, store, or dispose of the wastes properly.

The wastes along with their EPA hazardous waste codes are listed below:

- Explosive Substances (pyrotechnic scrap) - D003
- Detonating Fuzes - D003
- Boosters without Detonators - D003
- Cartridges, Power Device - D003, D005, D007, D008
- Tracers for Ammunition - D003
- Release Devices, Explosives - D003
- Ignitors - D003, D008
- Detonators, Electric - D003, D008
- Detonators for Ammunition - D003, D007, D008
- Detonators, Non-electric - D003, D008

The wastes listed above are representative of the types of wastes that will be sent to the detonation/deactivation site under the Emergency RCRA Permit.

AII

Waste Analysis Plan
40 CFR §270.14(b)(3) and §264.13

In general, the energetic waste generated at the TKO facility can be substantially characterized by knowledge of the process where the waste is generated. The non-conforming energetic waste streams have basically the same composition as the product; therefore, the waste characterization is based on the product composition. For streams that cannot be properly characterized by process knowledge, HSE personnel will collect a representative sample for off-site laboratory analysis. All approved waste characterization profiles are kept in the operating record in the HSE files.

Security Procedures and Equipment
40 CFR §270.14(b)(4) and 40 CFR §264.14

TKO prevents the unknowing entry and minimizes the possibility of unauthorized entry of persons or livestock onto the active portion of the facility.

The facility, which includes the detonation/deactivation site, is surrounded by both an outer barbed wire fence and an inner six foot high chain link fence. Access to the facility is through the operations building which is attended during business hours or through an electronically controlled gate.

"Private Property – No Trespassing" and "DANGER – Unauthorized Personnel Keep Out" signs legible from a distance of 25 feet are posted on or near all gates and at least one sign is placed along each straight fence run so that these signs are visible from all directions of approach. "No Smoking" signs, legible at distances of 25 feet, have been placed at the entrance to the plant, allowing smoking only in designated areas of the plant. "No Firearms Allowed" signs have also been placed at the entrance to the plant.

Inspection Schedule
40 CFR §270.14(b)(5) and §264.15(b)

TKO is committed to safely and efficiently managing energetic and hazardous waste that is generated during manufacture of initiators, pellets, cartridges, actuators and other devices. Inspections of monitoring equipment, safety and emergency equipment, security devices, operating and structural equipment, storage areas, and the detonation/deactivation site are important to preventing, detecting, or responding to environmental or human health hazards.

The waste onsite is tracked using the TKO Hazardous Waste Access Database. This database includes records of the following:

- Hazardous waste generated at the facility
- Hazardous waste stored at the facility
- Hazardous waste shipped from the facility
- Inspections of hazardous waste storage areas (including the storage bunkers where the hazardous waste is stored prior to being transported to the detonation/deactivation site for destruction)

The TKO Hazardous Waste Access Database is maintained by the HSE Environmental Engineer or other appropriate HSE personnel. The HSE Manager performs checks to assure that records are being adequately maintained.

Waste Storage Areas are inspected in accordance with RCRA, State, and Federal Regulations. Testing and maintenance of emergency response equipment is a part of TKO's General Inspection Program. The HSE Manager is responsible for ensuring that emergency equipment is inspected, repaired and replaced if necessary. Emergency equipment is inventoried regularly while inspecting for badly worn, broken, or missing equipment.

The full text of TKO's inspection program can be found in Section 9 of TKO's RCRA Compliance Program (included as Attachment 2).

Preparedness and Prevention Requirements
40 CFR §270.14(b)(6) and Part 264 Subpart C

TKO is designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. Specific items related to the waste storage areas and the detonation/deactivation site are addressed below.

The full text of the Preparedness and Prevention Plan can be found in Section 8 of TKO's RCRA Compliance Program (included as Attachment 2).

Accidental Detonations

In the event of an accidental detonation, all employees in the affected area evacuate immediately to the designated evacuation area. Employees are trained to immediately evacuate the area and are directed NOT to attempt to fight fire from accidental detonations.

Fires Involving Grass, Fields, Non-Explosive Containing Structures

If a fire involving grass, fields, or non-explosive containing structures occurs, the Clear Lake Fire Department is called. Upon arrival of the Fire Department, the TKO Incident Commander and the Fire Chief will form a Unified Incident Command and determine what the appropriate actions should be.

Contingency Plan
40 CFR §270.14(b)(7) and Part 264 Subpart D,
§§264.227, 264.255, and 264.200 (if applicable)

The Contingency Plan has been designed to minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water. The Contingency Plan covers leadership by the Incident Commander during an emergency, emergency procedures, emergency equipment, evacuation plans, arrangements with local authorities, and reporting requirements.

The full text of the Contingency Plan can be found in Section 6 of TKO's RCRA Compliance Program (included as Attachment 2).

Preventative Procedures
40 CFR §270.14(b)(8)

To prevent hazards in unloading operations, only personnel trained in energetic and hazardous waste management are allowed to load, unload, and transport wastes that are being sent to the detonation/deactivation site.

In order to prevent runoff from the detonation/deactivation area to other areas of the facility or the environment and to prevent contamination of water supplies, the detonation/deactivation process is operated inside a contained area that is located in a recessed area on the northern portion of the facility property.

Neither the waste storage areas nor the detonation/deactivation area would be affected by equipment failure or power outages.

In order to prevent undue exposure of personnel to hazardous waste, protective clothing is worn during transport of hazardous waste. In addition, during detonation/deactivation activities, operators are protected from exposure to the deactivation of hazardous waste by positioning themselves inside the protective building to the east of the detonation/deactivation site. From this protective building, the operators can monitor the progress of the deactivation from a safe location.

Ignitability and Reactivity
40 CFR §270.14(b)(9) and §264.17

TKO has taken precautions to prevent accidental ignition or reaction of ignitable or reactive wastes by separating and protecting the waste from sources of ignition or reaction. TKO has implemented procedures to safely handle the reactive and ignitable wastes on an ongoing basis. These procedures include:

- Not allowing smoking near production or hazardous waste areas. Smoking is not allowed anywhere in the plant except in the designated smoking area.
- Not allowing cell phones, two-way radios, key bobs, etc. to be used.
- Requiring all personnel to wear boots with conductive soles.
- Using grounding procedures (including wrist straps).
- Requiring Hot Work Permits before hot work is commenced.
- Using anti-static bags.
- Humidifying the process areas.
- Placing weight limits on energetics stored in one area.
- Requiring employees to wear face shields and appropriate PPE when working with reactive materials.
- Not operating under severe weather or lightning conditions.
- Using the buddy system.
- Following DOD quantity distance (QD) tables.
- Containers that involve the use of solvents are equipped with appropriate ventilation. In some cases, solvent use operations include ventilation provided by an external fan. In other cases, no external ventilation is required.

The ongoing operational requirements also provide for safe handling of the waste materials. The following additional requirements are implemented to assure safe handling of the waste materials:

- Use of diesel fuel, solvent, or water to desensitize waste materials.
- Storage in dedicated bunkers.
- Properly training technicians.
- Using appropriate non-propagating packaging.
- Controlling/minimizing volumes of waste handled during transport and deactivation.

Training
40 CFR §270.14(b)(12) and §264.16

TKO has a training program in place for operations personnel responsible for energetic and hazardous waste management. The training program includes introductory training and an annual review of training topics and is conducted using both classroom and on the job training. Some training topics related to hazardous waste handling include:

- Explanation of proper emergency procedures as they specifically relate to hazardous waste handling areas.
- Identification of specific hazards, procedures and cautions that may apply in addition to normal plant emergency procedures.
- Specific contents of the *Contingency Plan*, the *SPCC Plan* and the *Emergency Planning and Response* document as they relate to the hazardous waste storage areas.
- Proper use of PPE designed for use in the hazardous waste storage areas.

Training is designed to meet actual job tasks and all personnel training records are maintained in the Human Resources Department.

The full text of TKO's personnel training program for energetic and hazardous waste handling can be found in Section 7 of TKO's RCRA Compliance Program (included as Attachment 2).

Insurance Policy
40 CFR §270.14(b)(17) and §264.147

MARSH

MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN

Transparency & Disclosure

October 04, 2010 – October 04, 2011 *unless noted **

Prepared For: Technical Ordnance, Inc.
Nancy Saurbaugh
2525 Curtiss Street
Downers Grove, IL 60515
Phone: 630 969 0620
Fax:

Prepared By: Judy Huong
Philadelphia
Phone: 12152461047
Fax: 12152461399
Email: Judy.Huong@marsh.com

The information presented below relates to the quote(s) and/or indications(s) Marsh has received on your behalf and includes:(1) the premiums and certain other costs payable by you and (2) the compensation payable to Marsh from each insurer, wholesaler or MGA, if applicable.

Quotes/Indications Received

	Layers/Limits	Insurance Group/Insurer	Cost (US Dollars unless Noted)
1	Pollution Legal Liability	Lexington Insurance Company	$15,553.00 Premium
			1,800.00 TRIA
	Primary Layer	*NOTE: $1M per Occ/ $2M Agg*	----------
			17,353.00 Total Premium
	Limit: $1,000,000.00	*See Note ‡ below.*	
			Taxes & Fees
			See Proposal Insurer Fees
			Commission
			2,602.95 Retail [15%]

Declinations/No Responses

	Layers/Limits	Insurance Group/Insurer	Reason
1	Pollution Legal Liability	FAIRFAX FINANCIAL	Catastrophe exposure too high
	Primary Layer	*NOTE: $1M per Occ/ $2M Agg*	
2	Pollution Legal Liability	HARTFORD FINANCIAL SERVICES GROUP	Catastrophe exposure too high
	Primary Layer	*NOTE: $1M per Occ/ $2M Agg*	
3	Pollution Legal Liability	HARTFORD FINANCIAL SERVICES GROUP	Catastrophe exposure too high
	Primary Layer	*NOTE: $1M per Occ/ $2M Agg*	

Additional Notes

The enhanced commissions listed above, if any, will be in addition to and not be credited against any fee payable to Marsh and shall not be subject to any cap on commission payable to Marsh.

Fees, taxes and surcharges are not included in the premium figures. If applicable, the premiums may also be subject to audit and retrospective rating.

Marsh & McLennan Companies, Inc. and its subsidiaries own equity interest in a number of insurers and have contractual arrangements with certain insurers and wholesale brokers. Information regarding such interests and contracts is available at: http://global.marsh.com/about/Transparency.php.

Insurers indicated above may have provided numerous quote options. All insurer quotes are on file with Marsh and available upon request.

‡ Marsh provides market consulting services to the insurer(s) noted above and is paid for those services through a fixed fee.

MARSH

MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN

Confirmation of Binding Instructions

October 04, 2010 – October 04, 2011 *unless noted **

To (Named Insured):	Technical Ordnance, Inc. Nancy Saurbaugh 2525 Curtiss Street Downers Grove, IL 60515 Phone: 630 969 0620 Fax:	**From (Marsh):**	Judy Huong Philadelphia Phone: 12152461047 Fax: 12152461399 Email: Judy.Huong@marsh.com Client Executive:

This confirms your instruction to bind the insurance placement(s) presented below.

Quotes

	Layers/Limits	Insurance Group/Insurer	Cost (US Dollars unless Noted)	
1	Pollution Legal Liability	Lexington Insurance Company	$15,553.00	Premium
			1,800.00	TRIA
	Primary Layer	*NOTE: $1M per Occ/ $2M Agg*	---	
			17,353.00	Total Premium
	$1,000,000.00	*See Note ‡ below.*		
				Taxes & Fees
			See Proposal	Insurer Fees
				Commission
			2,602.95	Retail [15%]

Total Premium	**$17,353.00**
	Marsh Commission Summary
	2,602.95 Retail

Additional Notes

Fees, taxes and surcharges are not included in the premium figures. If applicable, the premiums may also be subject to audit and retrospective rating.

Marsh & McLennan Companies, Inc. and its subsidiaries own equity interest in a number of insurers and have contractual arrangements with certain insurers and wholesale brokers. Information regarding such interests and contracts is available at: http://global.marsh.com/about/Transparency.php.

This confirmation applies to subsequent endorsements, audits and extensions under this policy, subject to the same commission rates.

‡ Marsh provides market consulting services to the insurer(s) noted above and is paid for those services through a fixed fee.

A23

Other Information

40 CFR §270.14(b)(20)

Recordkeeping and Reporting

The full text of TKO's recordkeeping, reporting, and inspection program for waste handling can be found in Section 9 of TKO's RCRA Compliance Program (included as Attachment 2).

Energetic and hazardous waste is documented and tracked from the time it is generated until it is placed into storage and either shipped offsite or sent to the detonation/deactivation site and destroyed. TKO will document items destroyed by detonation/deactivation by keeping accurate logs of the type and amount of waste sent to the detonation/deactivation site for destruction.

ATTACHMENT 2

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) COMPLIANCE PROGRAM

REFERENCE DOCUMENTS	
Document Number	Document Title
600120	Emergency Planning and Response for TKO Clear Lake Facility
809001-1/27	Emergency Equipment Building
TKOFM 5.5.1-2DF	Job Description, HSE Manger
TKOFM 5.5.1-2FH	Job Description, Environmental Engineer
TKOEsa – 796	Haz Waste Storage Area Inspection Log
TKOWI 4.4.6-40	Unstable Material Deactivation Utilizing Burn Pit

1. Purpose

The purpose of this work instruction will establish the process in which Technical Ordnance, Inc. will document compliance with the existing RCRA requirements. All activities described will be performed with strict attention to facility Quality Management System, Environmental Management System, and Occupational, Health & Safety Management System.

2. Scope

SAFETY NOTE: Instructions and operating limits set forth in this procedure can not be deviated from. Deviation from set instructions and/or operating limits could result in management discipline, serious injury, or fatality.

SAFETY NOTE: Unless otherwise specified, refer to safety reference documents for requirements pertaining to process and chemical safety, including, but not limited to; equipment, limits, distance, quantity, hazard communications, work practices, control measures and general safety rules and regulations.

The scope of this work instruction is the systematic and documented compliance with the provisions of 40 CFR 265 Parts 260, 261, 262, 264 and 270 requirements as they apply to the Technical Ordnance, Inc. Clear Lake, SD facility. This RCRA Compliance Program includes descriptions and instructions including: facility description; security; contingency planning and emergency procedures; personnel training; preparedness and preventative procedures for ignitable, reactive and incompatible materials; general recordkeeping and reporting procedures; and inspections.

3. Flow Chart

N/A

4. Responsibilities

N/A

5. Facility Description and Security

5.1 **Brief Facility Description**

The Technical Ordnance, Inc. (TKO) energetic device manufacturing facility is located outside the city limits of Clear Lake, South Dakota. The facility is located on a one square mile plot of land and is surrounded by farm land used for hay and grazing livestock. The hazardous waste storage areas are located inside bunkers at the northwest corner of the production area and the detonation/deactivation site is located in a recessed area on the northern portion of the facility property.

The address for the facility is:

Technical Ordnance, Inc.
47600 180th Street
Clear Lake, South Dakota 57226

The facility consists of over 20 buildings that include administration, manufacturing, maintenance, waste handling and storage. Additionally, there are over 50 energetic storage bunkers that are utilized for storing raw materials, product, and energetic hazardous waste generated at the facility.

The products manufactured at this facility are prominent in the CAD/PAD market with sales to the missiles, munitions, space program and ammunition prime contractors. The products include:

- Cartridge-activated devices, propellant-actuated devices (CAD/PAD)
- Electric and mechanical initiators
- Gas initiators and gas generators
- Time delays
- Ammunition pellets
- Arm/Fire devices
- Stage Separation Subsystems
- Retention devices
- Impulse cartridges
- Separation nuts
- Pyro valves
- Cutting devices
- Explosive bolts
- Thrusters
- Actuators
- Fuses and fuse subcomponents

A27

The hazardous wastes generated at this facility which are to be stored and treated onsite in accordance with the emergency RCRA permit are off-specification products including subassemblies. The maximum amount of hazardous waste to be stored will be 700 lb net explosive weight (NEW).

5.2 **Generation and Storage of Off-Specification Material**

Off-specification energetic materials, including subassemblies, are produced throughout manufacturing process areas at the TKO facility. Prior to detonation/deactivation, off-specification energetic wastes will be handled by being placed in specially designed containers used to safely contain materials for transport to dedicated storage bunkers and finally, for treatment by detonation/deactivation. Consistent with procedures utilized to safely transport energetic products, the off-specification energetic wastes (and subassemblies associated with the energetics) are transported in minimum lot sizes to limit consequences in the event of an unplanned detonation. The on-site transportation of the waste energetic materials is accomplished by highly trained personnel with specialized OSHA and Process Safety Management training, in the same dedicated vehicles that are used to move energetic products manufactured on the site. Since the material does not meet product specification, it cannot be classified for the purpose of transport according to Department of Transportation (DOT) regulations.

Energetic wastes destined for on-site treatment by detonation/deactivation will be transported in sealed explosion-proof containers from the point of generation to dedicated storage bunkers that are specifically designed for safe storage of energetic materials. Each bunker is designed to safely store 100 lb net explosive weight (NEW) as well as the associated subassemblies, packaging and other containers. TKO ensures that the NEW limit is not exceeded in any bunker. (Each storage bunker utilizes a log system to record the type and nature of the material, the amount, and the date the material was put into storage.)

5.3 **Detonation/Deactivation Location and Description**

TKO will conduct waste detonation/deactivation activities according to standard operating procedures developed by TKO and identified as TKOWI 4.4.6-40 – Unstable Material Deactivation Utilizing Burn Pit. Procedures include specific instructions for the handling and transport of energetic waste from the production buildings to the storage bunkers, from storage bunkers to the treatment unit, and the conduct of detonation/deactivation activities in the unit. The focus of the procedures is the minimization of the opportunity for, and effects of, unexpected detonation, as well as documentation of safe handling and operating practices necessary to protect personnel.

The treatment process will involve the remote, and safe, detonation/deactivation of off-specification energetic materials and related subassemblies, in a dedicated area, under controlled conditions, by trained operators. The detonation/deactivation area is located approximately 650 feet south of the north facility boundary and 2,400 feet west of the eastern facility boundary. The detonation/deactivation area is located in a recessed sand pit area and is approximately 88 feet by 120 feet. The actual detonation/deactivation will occur on a bermed concrete slab bearing a large, cylindrical, metal tank with vents (approximately 5' x 8'). A remote protective concrete observation barrier is located east of where the primary concrete slab and sand pit are located. As explained in more detail below, operators will remotely energize off-specification energetic material to cause detonation, and will monitor the progress of the detonation from inside the protective concrete barrier.

The detonation/deactivation activities are conducted by at least two trained operators. These operators will have a telephone that remains in the transport vehicle for emergency and critical communication. The telephone can only be used if it is more than 50 feet from electrical devices or all electrical devices are in closed metal boxes.

Detonation/deactivation activities will only be conducted when weather conditions permit safe deactivation of energetic material. Detonations will not be conducted during periods of precipitation, or if there is a threat of precipitation. The prevailing winds must be less than 25 miles per hour, excluding gusts. Detonation activities will not be conducted when existing thunderstorms or likely electrified convective cells are within 20 miles of the site. Cells with inbound movement at 20 miles result in immediate removal of all energetic material and personnel from the deactivation area. However, cells with passing or tangential movement at 15-20 miles will result in securing all energetic material in transport containers and vehicles and the suspended operation will resume when outbound movement is verified at 20 miles.

Appropriate controls will be employed to assure there are no unplanned detonations. Such controls will include keeping explosives such as boosters, blasting caps, and unstable materials separated during detonation/deactivation operations. Finally, post-detonation wastes, such as wires, paper, plastic, packaging, ash, and fragments will be frequently cleared from the detonation/deactivation area, and properly disposed, to assure safe operation.

Waste materials transported to, and used at, the deactivation area will include explosives such as boosters, blasting caps and other off-specification material and subassemblies. Prior to detonation/deactivation the waste energetics will be placed in closed metal containers and will be placed into a transport vehicle. Materials will be staged at the deactivation area in minimal quantities. Equipment used during the detonation/deactivation process will include troughs (for example, burning loose powder/pellets), containment (for example, the metal

tank), and consumable material such as fuels and wood. Equipment will be safely stored out of the way, and will remain out of the reasonable line-of-fire or line of sight when not in use.

Wastes generated during the detonation/deactivation process will include wires, paper, plastic, packaging, ash and fragments. At completion of detonation, waste materials will be cleared from the deactivation area and thoroughly examined to assure the absence of unexploded explosives. If the wastes are determined to be hazardous, they will be placed in the hazardous waste container.

All operations associated with detonation/deactivation at the deactivation area will be attended by two operators. The first operator will assemble the energetic material to be deactivated in the tank. The first operator will control the fire line and arming of the firing circuit. The second operator will assist the first operator and will be responsible for documentation related to the destruction of energetic materials. Because a variety of energetic wastes are expected to be treated, a variety of materials and deactivation methods and equipment are likely to be utilized; thus operators must remain alert, and will augment procedures to constrain explosive reactions within the deactivation area using their best judgment.

The second operator will stay within the concrete observation barrier. The first operator will unshort the blasting cap, connect the fire line, and retreat to the concrete observation barrier. Once both operators are safely in the concrete observation barrier, the charge will be remotely detonated. Operators will remain in the concrete observation barrier area to avoid projectiles, and will exit only when the area is free of smoke and detonation is complete.

At a minimum the following items will be present during detonation/deactivation operations: one commercial fire extinguisher, two pressurized water extinguishers, telephone, eyewash station, first aid kit and emergency response team listing. Explosive fires that might occur will be handled in accordance with Section 6.4.2 of the Contingency Plan included in the RCRA Compliance Program document (included as Attachment 2); detonation operators will not fight explosive fires, but ensure the area is immediately vacated.

Once it is determined that any batch of materials for deactivation has been successfully detonated, the operators will load a new batch of energetic material, and repeat the steps outlined above.

5.4 **Security**

Security provisions under RCRA are specified by 40 CFR 270.14(b)(4) and 40 CFR 265.14.

TKO prevents the unknowing entry and minimizes the possibility of unauthorized entry of persons or livestock onto the active portion of the facility.

The facility is surrounded by both an outer barbed wire fence and an inner six foot high chain link fence. Access to the facility is through the operations building which is attended during business hours or through an electronically controlled gate.

"Private Property – No Trespassing" and "DANGER – Unauthorized Personnel Keep Out" signs legible from a distance of 25 feet are posted on or near all gates and at least one sign is placed along each straight fence run so that these signs are visible from all directions of approach. "No Smoking" signs, legible at distances of 25 feet, have been placed at the entrance to the plant, allowing smoking only in designated areas of the plant. "No Firearms Allowed" signs have also been placed at the entrance to the plant.

6. Contingency Plan

6.1 INTRODUCTION

This section of the RCRA Compliance Program is the Contingency Plan for Technical Ordnance, Inc. (TKO) in Clear Lake, South Dakota and satisfies the requirements of 40 CFR §270.14(b)(7) and 40 CFR Parts 262, 264 and 265. This Contingency Plan has been designed to minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water. The provisions of the plan will be carried out immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

6.1.1 Distribution of the Contingency Plan

In accordance with 40 CFR §265.53, a copy of the Contingency Plan, and all revisions, is maintained at TKO and is submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services. These agencies are listed in Appendix A, following Section 6.6.2 of this program.

6.1.2 Revisions to the Contingency Plan

In accordance with 40 CFR §265.54, the Contingency Plan will be reviewed and immediately amended, if necessary, whenever:

- The facility permit is revised;
- The plan fails in an emergency;
- The facility changes - in its design, construction, operation, maintenance, or other circumstances - in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes; or
- The list of emergency equipment changes.

6.1.3 Regulatory Requirements

One of the objectives for this document is to establish a program that will ensure compliance with relevant sections of the 40 CFR Part 265, Subpart D. Table 6.1-1 provides the regulatory references for each of the required components of the Contingency Plan.

Table 6.1-1
Contingency Plan Regulatory Checklist

Regulatory Citation	Description	Location Addressed
40 CFR §265.51	Each owner or operator of a facility must have a Contingency Plan designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.	Section 6.1
40 CFR §265.52(a)	Describe the actions facility personnel must take to comply with §265.51 and §265.56 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.	Section 6.3
40 CFR §265.52(c)	Describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to §265.37.	Section 6.6
40 CFR §265.52(d)	List names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see §265.55).	Section 6.2.2
40 CFR §265.52(e)	List of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. The location and a physical description of each item must be included.	Section 6.4 Table 6.4-1
40 CFR §265.52(f)	Include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).	Section 6.5
40 CFR §265.53	Distribution of copies of the Contingency Plan	Section 6.1.1
40 CFR §265.54	Amendments of the Contingency Plan	Section 6.1.2
40 CFR §265.55	Emergency Coordinator must have authority to commit the resources needed to carry out the Contingency Plan	Section 6.2.1
40 CFR §265.56	Emergency Procedures	Section 6.3

6.2 **LEADERSHIP**

Responses to the emergencies involving hazardous waste will be supervised by the Emergency Coordinator (Incident Commander), in accordance with 40 CFR §265.55.

6.2.1 **Emergency Coordinator (Incident Commander)**

In accordance with 40 CFR §265.55, at all times there is at least one employee on the TKO premises or on call with the responsibility for coordinating all emergency response measures. This person serves as the Emergency Coordinator (referred to as the Incident Commander throughout the rest of this document) and is familiar with all aspects of the Contingency Plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. The Incident Commander has the authority to commit the resources needed to carry out the Contingency Plan.

6.2.2 **Persons Qualified to Act as Incident Commander**

In accordance with 40 CFR §265.52(d), the names, addresses, and phone numbers (office and home) of all persons qualified to act as Incident Commander must be included in the Contingency Plan and be kept up to date.

In an emergency, contact the primary Incident Commander listed below:

Incident Commander

Title/Name:	Leif Thompson, Energetic Materials Manager
Office Telephone:	605-874-2631 Extension 465, Feature 0006
Home Phone:	605-874-4303
Address:	PO Box 1035 Clear Lake, SD. 57226

If the primary Incident Commander listed above is not readily available, the persons listed below (in the order listed) will assume responsibility as the alternate Incident Commander.

Alternate Incident Commanders

Second Choice

Title/Name:	Chris Piec, VP of Operations
Office Telephone:	605-874-2631, Extension 434, Feature 0012
Home Phone:	605-956-0233
Home Address:	100 S. 28th Street Watertown, SD. 57201

Third Choice

Title/Name:	Steve Newhouse, Production Manager
Office Telephone:	605-874-2631, Extension 662
Home Phone:	763-244-5133
Address:	907 Park Drive SW Pipestone, MN 56164

Fourth Choice

Title/Name:	Karen Esche, HSE Manager
Office Telephone:	605-874-2631, Extension 428, Feature 0007
Home Phone:	605-874-8180
Address:	PO Box 974 Clear Lake, SD. 57226

Fifth Choice

Title/Name:	Perry Bowers, Pyro Lab Supervisor
Office Telephone:	*Use plant paging system, Feature 0008
Home Phone:	605-783-3476
Address:	44942 SD Hwy 22 Hayti, SD. 57241

6.3 EMERGENCY PROCEDURES

TKO's document *Emergency Planning and Response for TKO Clear Lake Facility* – Document Number: 600120, describes the specific actions facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water. The Emergency Procedures described in Sections 3.1 and 3.2 are required by 40 CFR §265.56 and are in addition to those procedures described in TKO's *Emergency Planning and Response for TKO Clear Lake Facility* – Document Number: 600120.

6.3.1 Emergency Procedures Overseen by the Incident Commander

During an imminent or actual emergency situation, the Incident Commander (or their designee when the Incident Commander is on call) must immediately:

(1) Activate internal communication systems to notify all facility personnel; and
(2) Notify appropriate State or local agencies with designated response roles if their help is needed.

During a release, fire, or explosion, the Incident Commander must immediately identify the character, exact source, amount, and a real extent of any released materials. This may be done by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

Concurrently, the Incident Commander must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

If the Incident Commander determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and
(2) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area, and, as appropriate the National Response Center (using their 24-hour toll free number **800-424–8802**). The report must include:

(i) Name and telephone number of reporter;
(ii) Name and address of facility;
(iii) Time and type of incident (e.g., release, fire);
(iv) Name and quantity of material(s) involved, to the extent known;
(v) The extent of injuries, if any; and
(vi) The possible hazards to human health, or the environment, outside the facility.

During an emergency, the Incident Commander must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

If the facility stops operations in response to a fire, explosion, or release, the Incident Commander must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the Incident Commander must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. Unless TKO can demonstrate, in accordance with 40 CFR §261.3(c) or (d), that the recovered material is not a hazardous waste, TKO becomes a generator of hazardous waste and must manage it in accordance with

all applicable requirements of 40 CFR Parts 262, 263, and 265.

The Incident Commander must ensure that, in the affected area(s) of the facility:

(1) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and
(2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

6.3.2 **Reporting Requirements for Implementing the Contingency Plan**

TKO must note in the operating record the time, date, and details of any incident that requires implementing the Contingency Plan. Within 15 days after the incident, TKO must submit a written report on the incident to SD DENR and the Regional Administrator. The report must include:

(1) Name, address, and telephone number of the owner or operator;
(2) Name, address, and telephone number of the facility;
(3) Date, time, and type of incident (e.g., fire, explosion);
(4) Name and quantity of material(s) involved;
(5) The extent of injuries, if any;
(6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
(7) Estimated quantity and disposition of recovered material that resulted from the incident.

6.4 EMERGENCY EQUIPMENT

In accordance with 40 CFR §265.52(e), the Contingency Plan must include a list of all emergency equipment at the facility and the location and physical description of this equipment. Equipment necessary for safety and emergency response are listed in Table 6.4-1. Descriptions of this equipment are in the sections that follow. The location of the equipment is shown on the Emergency Equipment diagrams that are posted near the exit of each building. An electronic copy of each of these diagrams is maintained in the Master Control system (Document Number 809001).

6.4.1 Communications Systems

6.4.1.1 Internal Voice Broadcast System

TKO maintains an internal voice broadcast system including speakers strategically placed throughout the facility. The system can be accessed by pressing the "**Page**" button on any

Table 6.4-1
Emergency Response Equipment

Equipment	**Location** [a]
Telephone (Access for Internal Voice Broadcast System)	Buildings 101, 102, 103, 104, 105, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119,120, 121, 122, Engineering Trailer, HSE Trailer
Fire Extinguishers (Dry Chemical)	Buildings 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, Trailer, HSE Trailer, Smoking Trailer, Twin Shell Trailer and Bunker 46
Spill Kit, Spill Container	Building 119 and 102
Eyewash Station	Buildings 102, 103, 104, 105, 106 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 120, 121,
First Aid Kit	Buildings 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119 120, 121, 122, Twin Shell Trailer
Automated External Defibrillator	Building 103

Notes:
[a] The location of the equipment is shown on the Emergency Equipment diagrams that are posted near the exit of each building. An electronic copy of each of these diagrams is maintained in the Master Control system (Document Number 809001).

phone and a message can be broadcast throughout the facility. The locations of all telephones are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building.

6.4.1.2 Telephones to Summon Emergency Assistance

TKO has a standard phone system capable of making internal and outside calls. During business hours, the operator can be reached by dialing "0". This telephone system can also be used to activate the Internal Voice Broadcast System discussed above. The locations of all telephones are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building.

6.4.2 Fire Control Equipment

The locations of all fire extinguishers are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building. *See Emergency Equipment per Document 809001-1/27.* The fire extinguishers are dry chemical units. Each unit is a red pressurized cylinder containing fire suppression chemicals that, when sprayed on a fire, smothers it. The operator simply points the nozzle towards the fire and pulls the trigger to activate the fire extinguishing chemical.

6.4.2.1 Small Fires

Portable fire extinguishing equipment is only to be used by trained personnel in the attempt to fight small fires involving no explosive materials (i.e. small office "paper" or "trash" fires.)

6.4.2.2 Accidental Detonations

In the event of an accidental detonation, all employees in the affected area must evacuate immediately to the designated evacuation area. Employees are trained to immediately evacuate the facility and are directed NOT to attempt to fight fire from accidental detonations.

6.4.2.3 Fires Involving Grass, Fields, Non-Explosive Containing Structures

If a fire involving grass, fields, or non-explosive containing structures occurs, the Clear Lake Fire Department is called. Upon arrival of the Fire Department, the TKO Incident Commander and the Fire Chief will form a Unified Incident Command and determine what the appropriate actions should be.

6.4.3 Spill Control and Decontamination Equipment

TKO personnel respond to all small scale spills and leaks. Due to the small size of the waste containers used to handle wastes (each container is less than 55 gallons), large spills or leaks are not expected to occur.

Spill response equipment consists of absorbent material, neutralizing/desensitizing agents (diesel or solvent/water mixture), and tools to clean-up absorbed spills. Absorbent material can be placed directly on or around a liquid spill to absorb the liquid material. Absorbent material can also be used to form a dike to prevent the spread of a liquid spill. Powder spills are neutralized or desensitized before any attempts are made to clean up. Spill clean-up waste can be shoveled or swept up and placed in containers with appropriate labels. If needed, a spill container is available for spill clean-up and can be found in Building 119. Clean-up wastes will be properly disposed offsite.

6.5 EVACUATION PLAN

In accordance with 40 CFR §265.52(f), the Contingency Plan must include an evacuation plan for facility personnel. The evacuation routes are shown on the map of the facility posted near the exit of each building. An electronic copy of each of these evacuation routes is maintained in the Master Control system (Document Number 809003).

6.5.1 Emergency Signals Used to Begin Evacuation

When an evacuation is needed, the internal voice broadcast system will be used to alert those at the facility to "Report to the designated evacuation areas."

6.5.2 Evacuation Routes

Building 101 and 103 are the designated evacuation areas. *See Evacuation Route Document 809003.*

6.5.2.1 Primary Evacuation Route (Marked with Red Solid Arrows)

To assist in a safe evacuation, a primary evacuation route has been established. Primary evacuation routes are designated by a red solid arrow on the map of the facility posted near the exit of each building. *See Evacuation Route Document 809003.* It must be remembered that each emergency has its own set of conditions, and it may be that the primary evacuation route is not usable. Therefore, alternate evacuation routes have been established.

6.5.2.2 Alternate Evacuation Route (Marked with Blue Dashed Arrows)

If imminent danger may be encountered along the primary evacuation route or if the primary evacuation route is not usable, the alternate evacuation route must be used. The alternate evacuation routes are designated by a blue dashed arrow on the map of the facility posted near the exit of each building.

6.5.3 Evacuation

An evacuation must be conducted in such a way as to minimize the risk of harm to everyone involved. This requires the development of a pre-plan with all foreseeable conditions taken into consideration.

In the event that the emergency necessitates that all personnel evacuate their work areas and report to their designated evacuation point, the following will apply.

1. A designated Evacuation Point Supervisor will be in charge of each of the 2 evacuation points and will report to the Administrative Officer.
2. Follow primary evacuation route to designated evacuation areas. If there is imminent danger that may be encountered along the primary evacuation route, you must follow the alternate evacuation route, away from the incident. Remain in the designated area until otherwise notified.
3. Production personnel and test lab personnel (excluding those who normally work in Building 102, shall report to the cafeteria (Building 103).
4. Personnel working in Buildings 101 and 102 will report to Building 101. Transients shall report to the nearest evacuation area.
5. Support personnel should report to Building 101 if requested.
6. Visitors and Contractors will evacuate to the nearest designated evacuation area and report to the Evacuation Point Supervisor.
7. Each lead person / supervisor will take a head count of their employees and report their findings to the Evacuation Point Supervisor.
8. Evacuation Point Supervisors will provide the Administrative Officer a report of those employees present and those un-accounted for as quickly as possible.
9. In the event that someone is missing or unaccounted for, the Incident Commander will:
    - Verify with Evacuation Point Supervisors that person(s) are missing
    - Confer with the HSE Manager and the area supervisor or lead person and determine the appropriate course of action.
10. All employees must remain in the designated evacuation area until the HSE Department or Shift Supervisor gives the "all clear" announcement.

6.6 ARRANGEMENTS WITH LOCAL AUTHORITIES

In accordance with 40 CFR §265.52(c) and §265.37, the Contingency Plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services.

Outside organizations have received training to remain outside the gate until checked in by TKO personnel. They will then be directed to the designated command post. The emergency vehicle staging area will be in the parking lot east of the warehouse building No. 102.

6.6.1 **Protocol When Outside Organizations Are Called In**

The information below addresses emergencies requiring outside emergency organization involvement. The purpose of this information is to promote accurate communication among all personnel involved in order to minimize the effects of a major chemical emergency in the area.

6.6.1.1 Unit Commanders

Upon arrival at TKO, Unit Commanders should report to the TKO Incident Commander. Response Unit Commanders will be briefed and provided with pertinent information by the Incident Commander. The TKO Incident Commander and responding Unit Commanders (i.e. Fire Chief) will function as a Unified Incident Command.

6.6.1.2 Emergency Response Units

Units responding to a call for an emergency at TKO must check all personnel in at the Controlled Access Gate to the South of the Operations Building. At no time should an emergency response unit enter the production area of the facility without direction of their Unit Commander and an appropriate TKO representative at the Controlled Access Gate. Personnel will be directed to the emergency vehicle staging area to await direction from their Unit Commanders.

Ambulances will receive an EMS escort when they arrive at the emergency vehicle staging area.

At no time shall responding units attempt to handle, walk through, or contain chemical or explosive material spills. If a spill is discovered, the area should be evacuated and the TKO Incident Commander notified immediately. TKO will make the determination of appropriate action to be taken.

6.6.1.3 Understanding Between the Clear Lake Fire Department and TKO

A memorandum describing the understanding between the Clear Lake Fire Department and TKO is included in Appendix 9 to the *Emergency Planning and Response for TKO Clear Lake Facility Document* – Document Number 600120.

6.6.2 **Periodic Walk-Through for Off-Site Personnel**

TKO periodically has the local police, fire department, and hospital personnel on-site to familiarize them with the layout of the facility, the properties of the hazardous waste handled at the facility and the associated hazards with this waste, the places where facility personnel would normally be working, entrances to the facility, roads inside the facility, and possible evacuation routes. The last on-site walk-through was held in 2008.

APPENDIX A

List of Outside Agencies Who Maintain a Copy of the Contingency Plan

1. Deuel County Sheriff
   408 4th ST W
   Clear Lake, SD 57226
   605-874-8212

2. Clear Lake Fire Department
   PO Box 541
   311 SD HWY 22E
   Clear Lake, SD 57226
   605-874-2663

3. LEPC
   Deuel County Emergency Management
   PO Box 217
   Clear Lake, SD 57226
   605-874-8189

4. Sanford Deuel County Medical Center
   701 3rd Avenue South
   Clear Lake, SD 57226
   605-874-2141

7. Personnel Training

7.1 **INTRODUCTION**

Personnel training provisions under RCRA are specified by 40 CFR §270.14(b)(12) and §265.16. TKO's personnel training program for hazardous waste handling is described in this document.

7.1.1 Those Given Training

TKO has a training program for operations personnel responsible for hazardous waste management. Currently, the hazardous waste management operating procedures direct operators to contact the appropriate HSE employee to address hazardous waste disposal issues.

At this time there are three personnel positions key to maintaining compliance with the hazardous waste management procedures at the TKO facility as follows:

Job Title	Job Description Document Number	Employee Name
HSE Manager	TKOFM 5.5.1-2DF	Karen Esche
Environmental Engineer	TKOFM 5.5.1-2FH	To Be Determined

Job descriptions for the HSE Manager and Environmental Engineer are maintained onsite. TKO is in the process of filling the Environmental Engineer position and will revise the personnel training records when this position is filled.

The above employees will be given introductory and continuing training as discussed in this document.

7.1.2 Timing of Training

Facility personnel must successfully complete the introductory training program within 6 months after the date of their employment (or assignment to a new position). In accordance with 40 CFR §265.16(b), new facility personnel do not work alone until they have been completely trained.

An annual review of the initial training is also conducted. *Personnel training records are maintained in the HR Department.*

7.1.3 Method of Training

Both classroom and on the job training are given as specified in 40 CFR §265.16(a). Annual classes in hazardous material handling, fire fighting, and emergency response training are provided for personnel with hazardous waste and/or emergency response responsibilities. Training utilizes handouts, presentations, and hands-on demonstration. Annual training is documented.

7.1.4 Training Responsibilities

As specified by 40 CFR §265.16(2), the training program is directed by a person trained in hazardous waste management procedures, and includes instruction which teaches facility personnel hazardous waste management procedures relevant to their position (including contingency plan implementation). The HSE Manager is in charge of ensuring that all HSE employees are trained in hazardous material handling, emergency response, and fire response.

7.1.5 Content of Training

As specified by 40 CFR §265.16(a)(3) and further described in Section 7.2, of this plan the following key emergency response items will be discussed during personnel training:

(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
(ii) Key parameters for automatic waste feed cut-off systems (not applicable to this facility);
(iii) Communications or alarm systems;
(iv) Response to fires or explosions;
(v) Response to ground-water contamination incidents; and
(vi) Shutdown of operations.

In addition, the following items will be discussed:

(i) Explanation of proper emergency procedures as they specifically relate to hazardous waste handling areas.
(ii) Identification of specific hazards, procedures and cautions that may apply in addition to normal plant emergency procedures.
(iii) Specific contents of the *Contingency Plan*, the *SPCC Plan* and the *Emergency Planning and Response* document as they relate to the hazardous waste storage areas.
(iv) Proper use of PPE designed for use in the hazardous waste storage areas.

Explanation of responsibilities for each job function as it relates to compliance with RCRA regulations.

7.2 DESIGNING TRAINING TO MEET ACTUAL JOB TASKS

Below is a brief description of how the training program is designed to ensure that facility personnel are able to respond effectively to emergencies.

7.2.1 Use, Inspection, Repair and Replacement of Emergency Equipment

The HSE Manager is responsible for ensuring that emergency equipment is inspected, repaired and replaced if necessary. The HSE Manager is responsible for ensuring all in-plant personnel are trained on the use of plant emergency response equipment. Emergency equipment is inventoried regularly while inspecting for badly worn, broken, or missing equipment.

7.2.2 Key AWFCO Parameters

No AWFCO parameters apply to this facility.

7.2.3 Communications Systems

All new employees are given a tour of the plant and shown the locations of phones. The locations of all telephones are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building. These diagrams will be reviewed during introductory training.

7.2.4 Responses to Fires and Explosions

Basic fire fighting training is given to employees yearly. This basic training qualifies them to implement first responses to small localized paper fires. Any large fires will require that the Clear Lake Fire Department be contacted. If an accidental detonation occurs, all employees in the affected area must evacuate immediately to the designated evacuation area (do not fight the fire).

7.2.5 Response to Groundwater Contamination Incidents

There is minimal chance of a groundwater contamination incident at this facility because of the nature of the wastes and the small size of waste containers handled. The largest container of hazardous waste inside of the facility is 55 gallons and these tanks have adequate secondary containment.

All HSE employees are given SPCC training as required under 40 CFR Part 112 – Oil Pollution Prevention. This training will prepare these employees to respond effectively to small scale spills or leaks of the types of materials encountered in the management of hazardous waste.

7.2.6 Shut-Down Operations

Introductory training will explain any manual shut-down operations. Any situations that

might result in operating problems such as mixing incompatible wastes and handling reactive or ignitable will be discussed. Procedures for a safe shut-down during emergencies will be discussed with special emphasis on methods to minimize the chance of hazardous waste becoming involved in any fire or explosion.

Continuing training will focus on identification of problems with current shut-down procedures. Any manual shut-down situations occurring as a result of real emergencies or in drills will be analyzed. Any problems and ways to speed shut-down will be discussed. Improvements will be made where inadequate shut-down procedures are identified.

7.3 RECORDKEEPING OF TRAINING

In accordance with 40 CFR §265.16(d), the following documents and records are maintained at the facility:

1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;
2) A written job description for each position;
3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position;
4) Records that document the training or job experience required. *Personnel training records are maintained in the HR Department.*

All training records will be maintained onsite until closure of the facility. Records will document who was given training and who completed training. Training records of employees who leave TKO will be retained onsite for at least 3 years after their termination. All training records are maintained by the Human Resource Department.

8. Preparedness and Prevention Plan Including Requirements for Ignitable, Reactive, or Incompatible Wastes

8.1 INTRODUCTION

Preparedness and Prevention provisions under RCRA are identified in 40 CFR 270.14(b)(6) and Part 265 Subpart C. Preventative procedures are specified by 40 CFR 270.14(b)(8). Requirements for Ignitable, Reactive or Incompatible Wastes are specified by 40 CFR 270.14(b)(9) and 40 CFR 265.17.

8.2 PREPAREDNESS AND PREVENTION REQUIREMENTS

8.2.1 Required Equipment (40 CFR 265.32)

8.2.1.1 Internal Communications System

TKO maintains an internal voice broadcast system including speakers strategically placed throughout the facility. The system can be accessed by pressing the "**Page**" button on any phone and a message can be broadcast throughout the facility. The locations of all telephones are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building.

8.2.1.2 Telephones to Summon Emergency Assistance

TKO has a standard phone system capable of making internal and outside calls. During business hours, the operator can be reached by dialing "0". This telephone system can also be used to activate the Internal Voice Broadcast System discussed above. The locations of all telephones are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building.

8.2.1.3 Fire Control Equipment

The locations of all fire extinguishers are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building. *See Emergency Equipment per Document 809001-1/27.* The fire extinguishers are dry chemical units. Each unit is a red pressurized cylinder containing fire suppression chemicals that, when sprayed on a fire, smothers it. The operator simply points the nozzle towards the fire and pulls the trigger to activate the fire extinguishing chemical.

Small Fires

Portable fire extinguishing equipment is only to be used by trained personnel in the attempt to fight small fires involving no explosive materials (i.e. small office "paper" or "trash" fires.)

Accidental Detonations

In the event of an accidental detonation, all employees in the affected area evacuate immediately to the designated evacuation area. Employees are trained to immediately evacuate the facility and are directed NOT to attempt to fight fire from accidental detonations.

Fires Involving Grass, Fields, Non-Explosive Containing Structures

If a fire involving grass, fields, or non-explosive containing structures occurs, the Clear Lake Fire Department should be called. Upon arrival of the Fire Department, the TKO Incident Commander and the Fire Chief will form a Unified Incident Command and determine what the appropriate actions should be.

8.2.1.4 Spill Control and Decontamination Equipment

TKO personnel respond to all small scale spills and leaks. Due to the small amount of hazardous waste handled (each container is less than 55 gallons), large spills or leaks are not expected to occur.

Spill response equipment consists of absorbent material, neutralizing/desensitizing agents (diesel or solvent/water mixture), and tools to clean-up absorbed spills. Absorbent material can be placed directly on or around a liquid spill to absorb the liquid material. Absorbent material can also be used to form a dike to prevent the spread of a liquid spill. Powder spills are neutralized or desensitized before any attempts are made to clean up. Spill clean-up waste can be shoveled or swept up and placed in containers with appropriate labels. If needed, a spill container is available for spill clean-up and can be found in Building 119. Clean-up wastes will be properly disposed offsite.

8.2.1.5 Adequate Volume of Water

There are no sprinkler systems located at the TKO facility. See above sections regarding how fires are addressed. All buildings are equipped with at least one fire extinguisher.

8.2.2 **Testing and Maintenance of Equipment (40 CFR 265.33)**

Testing and maintenance of emergency response equipment is a part of TKO's General Inspection Program.

The communication system is used on a daily basis and therefore is not scheduled for specific inspections. If a problem is detected in daily use, the problem is fixed immediately.

8.2.3 **Access to Communication System (40 CFR 265.34)**

Almost every building on-site has a telephone. The locations of all telephones are illustrated on the Emergency Equipment diagrams that are posted near the exit of each building. An electronic copy of each of these diagrams is maintained in the Master Control system

(Document Number 809001). The telephones can be used to activate the Internal Voice Broadcast System in an emergency situation.

There is never just one employee on the premises while the facility is operating.

8.2.4 **Required Aisle Space (40 CFR 265.35)**
Adequate clearance is maintained to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency.

8.2.5 **Arrangements with Local Authorities (40 CFR 265.37)**
Arrangements with local authorities to familiarize them with the layout of the facility and the nature/hazards of the hazardous waste handled at the facility are described in Section 6.0 of the TKO Contingency Plan.

8.3 **PREVENTATIVE PROCEDURES**

8.3.1 **Preventing Hazards in Unloading Operations (40 CFR 270(b)(8)(i))**
To prevent hazards in unloading operations, only personnel trained in hazardous waste management are allowed to load, unload, and transport wastes.

8.3.2 **Preventing Runoff and Contamination of Water Supplies (40 CFR 270(b)(8)(ii)-(iii))**
In order to prevent runoff from the detonation/deactivation area to other areas of the facility or the environment and to prevent contamination of water supplies, the detonation/deactivation process is operated inside a contained area that is located in a recessed area on the northern portion of the facility property.

8.3.3 **Mitigating Effects of Equipment Failure or Power Outages (40 CFR 270(b)(8)(iv))**
Neither the waste storage areas nor the detonation/deactivation area would be affected by equipment failure or power outages.

8.3.4 **Preventing Exposure of Personnel to Hazardous Wastes (40 CFR 270(b)(8)(v))**
In order to prevent undue exposure of personnel to hazardous waste, protective clothing is worn during transport of hazardous waste. In addition, during detonation/deactivation activities, operators are protected from exposure to the deactivation of hazardous waste by positioning themselves inside the protective building to the east of the detonation/deactivation site. From this protective building, the operators can monitor the progress of the deactivation from a safe location.

8.3.5 **Preventing Releases to the Atmosphere (40 CFR 270(b)(8)(vi))**
TKO prevents releases to the atmosphere by conducting all production activities inside the production buildings. Small amounts of chemicals are used in production activities and any

spills are immediately cleaned up and appropriate HSE supervisory personnel are contacted.

8.4 REQUIREMENTS FOR IGNITABLE, REACTIVE OR INCOMPATIBLE WASTES

This section provides a description of precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes.

8.4.1 Overview of Types of Waste

TKO processes reactive materials in the manufacture of fuses, detonators, pellets and other energetic items. The manufacture of these items results in hazardous waste that is characteristically reactive or ignitable. TKO stores each waste stream separately, segregated by product type; therefore, no incompatible wastes are mixed.

8.4.2 Handling Reactive and Ignitable Wastes

TKO has taken precautions to prevent accidental ignition or reaction of ignitable or reactive wastes by separating and protecting the waste from sources of ignition or reaction. TKO has implemented procedures to safely handle the reactive and ignitable wastes on an ongoing basis. These procedures include:

- Not allowing smoking near production or hazardous waste areas. Smoking is not allowed anywhere in the plant except in the designated smoking area.
- Not allowing cell phones, two-way radios, key bobs, etc. to be used.
- Requiring all personnel to wear boots with nonconductive soles.
- Using grounding procedures (including wrist straps).
- Requiring Hot Work Permits before hot work is commenced.
- Using anti-static bags.
- Humidifying the process areas.
- Placing weight limits on energetics stored in one area.
- Requiring employees to wear face shields and appropriate PPE when working with reactive materials.
- Not operating under severe weather or lightning conditions.
- Using the buddy system.
- Following DOD quantity distance (QD) tables.
- Containers that involve the use of solvents are equipped with appropriate ventilation. In some cases, solvent use operations include ventilation provided by an external fan. In other cases, no external ventilation is required.

The ongoing operational requirements also provide for safe handling of the waste materials. The following additional requirements are implemented to assure safe handling of the waste materials:

- Use of diesel fuel, solvent, or water to desensitize waste materials.
- Storage in dedicated bunkers.
- Properly training personnel.
- Using appropriate non-propagating packaging.
- Controlling/minimizing volumes of waste handled during transport and deactivation.

9. Recordkeeping, Reporting, and Inspection

9.1 **Recordkeeping, Reporting and Inspection**

TKO is committed to safely and efficiently manage hazardous waste that is generated during manufacture of initiators, pellets, cartridges, actuators and other devices at the Clear Lake, South Dakota facility. This section includes procedures for recordkeeping, reporting and inspections per 40 CFR §265.

9.2 **Hazardous Waste Shipment Manifests**

Not all wastes generated at TKO are shipped offsite. Only those wastes with appropriate DOT classifications are sent offsite. If a waste does not have a DOT classification, it is stored until it can be detonated onsite.

All shipments of hazardous waste from the TKO facility are done with an approved transporter and are appropriately manifested. TKO utilizes off-site treatment facilities to dispose of hazardous waste generated at the facility. The energetic waste is treated by:

EBV Explosives Environmental Company
3078 Country Road 180
Joplin, MO 64801

The transport company used is R&R Trucking (US EPA ID Number MOR000501973) or other approved transport company.

Other waste streams such as spent acetone solvent, lab packs, etc. are sent to:

Veolia Environmental Services
Veolia Technical Solutions
1275 Mineral Springs Drive
Port Washington, WI 53074

The transport company used is Veolia Technical Solutions (US EPA ID Number NJD080631369).

The manifest is typically generated by the treatment vendor based on the waste profiles on file. The TKO HSE personnel fill in the amounts and weights as appropriate and sign the manifest. The manifest and supporting documentation are maintained in the site operating record for a minimum of 3 years, unless an enforcement action is pending.

9.3 **Waste Generation and Storage Records and Inspections**

Satellite Storage/Accumulation Areas - An operation area (building) may establish a Satellite Accumulation Area at the point of generation with the approval of the HSE Department. The volume of the waste may never exceed 55 gallons (1 quart if the waste is listed as an "acutely hazardous waste"). The container must be marked with the words "Hazardous Waste, Satellite Accumulation" and identify the contents. The container must comply with the requirements in this section. When the maximum storage quantity is reached the drum MUST be dated immediately with an Accumulation Start Date and be moved to the Hazardous Waste Storage Area within 3 calendar days. Area Lead Persons are responsible for ensuring Satellite Storage areas comply with these requirements.

Hazardous Waste Containers - Containers that hold waste must comply with regulations. See the HSE Department to verify that the appropriate containers are in use. Previously used containers are not authorized for shipment of hazardous waste, unless re-certified.

Containers that hold hazardous waste MUST remain closed and sealed at all times, except when waste is being actively added or removed. Containers must remain in good condition with no leaks or ruptures and no waste on the outside of the container.

Secondary Containment shall be used for the storage of liquid waste.

Hazardous Waste Storage Areas - Hazardous Waste Storage Areas are established and inspected in accordance with RCRA, State and Federal Regulation. They are established in such a matter as to meet EPA, OSHA, DOT and DoD compatibility requirements. Energetic waste are segregated and stored in separate bays or magazines from other waste and product.

All hazardous waste is entered into the accumulation log (maintained by the HSE Department) and must be marked with the following information at a minimum:

- The words "Hazardous Waste".
- Words identifying the contents of the container.
- An "Accumulation Start Date" (Except in the case of a satellite container, this date should be the day that waste is first put into the container).

The HSE Department or designee has access to Hazardous Waste Storage Areas or for waste transfer to the storage areas.

The amount of waste generated is tracked using the Hazardous Waste Access Database. This is a system that was specifically designed and implemented for the site-specific situation at the TKO facility. The Hazardous Waste Access Database includes records of the following:

- Hazardous waste generated at the facility
- Hazardous waste stored at the facility
- Hazardous waste shipped from the facility
- Inspections of hazardous waste storage areas

The TKO Hazardous Waste Access Database is maintained by the Environmental Engineer or other appropriate HSE personnel. The HSE Manager performs checks to assure that records are being adequately maintained. The TKO Hazardous Waste Access Database is available for review from the HSE Department.

9.4 **Hazardous Waste Reporting**

TKO generates and submits the biennial report required by 40 CFR §265.75. The biennial report is submitted to the appropriate authorities by March 1 of each even numbered year. The biennial report is submitted on EPA form 8700-13B and covers the facility activities during the previous calendar year. The biennial report includes:

- EPA identification number, name and address of the facility
- The calendar years covered by the report
- The method of treatment, storage or disposal for each hazardous waste
- For generators who treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated
- For generators who treat, store, or dispose of hazardous waste on-site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.
- The certification signed by the owner or operator of the facility or his authorized representative.

The information for the biennial report is developed using the Hazardous Waste Access Database and the manifests for waste shipments during the year. Copies of the biennial reports and other reports that may be submitted to the agency are maintained in the operating record.

10. Waste Handling and Characterization

10.1 **Waste Handling and Characterization**

TKO will determine information needed to adequately treat, store and dispose of the waste generated from the manufacturing processes. The hazardous waste streams generated at the facility include those described below.

Anti-freeze

Used anti –freeze is considered a hazardous waste and shall be turned over to maintenance. Maintenance will store the antifreeze in a 55-gallon, closed top drum. The drum shall be labeled "Hazardous Waste Satellite Accumulation Point – Antifreeze" At no time shall the quantity of anti-freeze collected in the maintenance area exceed 55 gal. When the 55 Gal drum is full it shall be turned over to the HSE Department and transferred to the hazardous waste storage area. The antifreeze will be entered into the Hazardous Waste Accumulation Log maintained by the HSE Department. The drum shall be given an "accumulation start date" of either the date that the drum has been full or the date that the drum is turned over to the hazardous waste storage area. The drum MUST be transferred to the hazardous waste storage area within 72 Hours of the Accumulation start date.

The antifreeze will then be profiled and shipped to an approved TSDF (Treatment/Storage /Disposal Facility). The anti-freeze will be shipped with a hazardous waste manifest. Records shall be maintained by the HSE Department for 3 years from the date of shipment.

Parts Washing Solution

The lid on the parts washing station should be kept closed at all times when not in use. The solution is considered to be in use until such time as it is removed from the parts washer.

Florescent Light Bulbs

Florescent and mercury vapor lamps are regulated as a Universal Waste. They will be turned into HSE Department for handling and storage. Do not break the lamps. The lamps shall be placed and stored in shipping boxes. The boxes shall be stored in a designated lamp storage area until shipment. The lamps shall be shipped (with a waste manifest) to an approved disposal/recycling facility. Lamps are not to be placed in dumpster and sent to landfill. The waste shipping manifests shall be maintained by the HSE Department.

Florescent Light Ballasts

Light ballasts <u>may</u> be considered a hazardous waste. Therefore, all light ballasts shall be turned into the HSE Department for evaluation/collections. Historically, those ballasts that DO NOT contain PCBs will be labeled with a statement stating such. Ballasts that may contain PCBs usually have no statement at all on the ballast. Ballasts that do not have a

"PCB Free" will be logged into the Hazardous Waste Accumulation Log, handled, stored, and shipped as a hazardous waste. PCB free ballasts will be profiled as a special waste and, upon approval, shipped to a sub-title D-permitted landfill. Ballasts that do not have a "PCB Free" free statement will be shipped as a hazardous waste to an approved TSDF. This shipment must be closely tracked in accordance with EPA regulations and confirmation of receipt of the PCB containing material must be received from the TSDF within 72 hours of shipment. It is the generator's (TKO's) responsibility to initiate this.

Solvents (acetone, xylene, epoxies, alcohols, etc)

Contact area Lead Person to determine if solvent has further use. Do not mix solvents together. Keep solvent in closed, labeled container. Contact HSE Department for collection of waste solvents. The HSE Department will manage the solvent in accordance with the Disposal Agreement for the solvent.

Disposal:

Solvents will be collected and bulked in designated area using properly labeled, grounded, steel closed top drums. Solvents will be shipped for recovery/disposal to an approved TSDF.

Nitrocellulose Sheets and Powder

Nitrocellulose sheets are considered a hazardous waste because they are a flammable solid. Nitrocellulose sheets are stored in a steel 55-gallon open top drum. The drum is kept closed and sealed at all times, except when sheets are being placed into drums. Sheets with the discs punched out are not accumulated outside the drum. The drum shall be labeled "Hazardous Waste Satellite Accumulation – Nitrocellulose sheets". The drum shall be inspected every day to ensure the drum is closed tightly and there is no breach in the integrity of the drum. At no time shall the 55-gallon capacity of the drum be exceeded. When the drum is full the calendar date shall be written on the label as the Accumulation Start Date. The HSE Department shall be notified and the drum entered into the Hazardous Waste Accumulation log. The drum MUST be transferred to the Hazardous Waste Storage area within 72 hours of the Accumulation Start Date. The nitrocellulose shall be profiled for acceptance approval and shipped with a hazardous waste manifest to an approved TSDF. The hazardous waste manifest shall be retained for 3 years from the date of shipment.

Used Drums and Barrels

Drums that have liners shall have the liners removed and the liners handled in accordance with the shipping materials procedure. Drums are considered hazardous when they contain greater than 3 % of total weight capacity or 1inch (whichever is less) of a hazardous material residue. Drums containing liquids may be triple rinsed (and then all labels as such with DOT markings then removed). The rinsate should be collected and handled in

accordance with the handling procedures for the material that the drums originally contained. When the drums meet the definition of empty, they may be disposed of as non-hazardous waste. Drums that contain residue from energetic material will be handled as hazardous waste if the residue is not removed. Containers that hold materials that are designated as acutely hazardous wastes must be disposed of as a hazardous waste. Drums and barrels considered to be a hazardous waste should be turned into the HSE Department for proper handling and disposal. Used drums may not be used as shipping containers for other hazardous materials.

Floor Sweeping and Scrap Powder

Floor sweepings and scrap powder are considered to be a hazardous waste. They must remain segregated from other waste streams, unless authorized by the HSE Department. Place floor sweepings and scrap powder in antistatic bags. Soak the material with a desensitizing agent. Contact the HSE Department to identify the specific agent to use and the quantity that can be placed into a single bag. (This can vary for different compositions and is determined by the disposal company). Seal the bag against leakage. Place the bag in designated and labeled box to await pick up. The bags of floor sweeping and scrap powder will be bagged and transferred to the hazardous waste storage area and segregated in accordance with the description on the approved hazardous waste profile. The material will be shipped as a hazardous waste to an approved hazardous waste TSDF.

Mop Water from Production Buildings

Mop water from buildings is considered a hazardous waste. It is segregated from other waters and collected by maintenance personnel for solidification. All production building mop water pails shall be labeled as such and are color coded "yellow/black" and used only for this purpose. When mop water is collected it shall be stored in a central storage area in covered containers. The collection point shall be protected from the weather, have secondary containment and be labeled as mop water collection point The solids recovered from the solidification shall be collected and put into a steel, 55–gallon open head DOT shipping drum. The Drum is closed and sealed at all times when not adding waste to the drum. When the drum is full, assign an Accumulation Start Date, enter the drum into the Hazardous Waste Accumulation Log, and transfer the drum to the Hazardous Waste Storage Area. Profile and Ship the drum to an approved TSDF.

Contaminated Paper Materials and Production Aids

Production materials that are contaminated with energetic materials are considered to be a hazardous waste. The following types of materials that contain energetic material residue are to be handled by this procedure: Paper towels, Kleenex and Tissues, Q-tips, Gloves, Dust Mask Type Respirators, Bags, Paper Type Tape, Syringes and tips contaminated with energetic material, Aluminum foil weighing cups and other aluminum weighing pieces used for weighing powders.

Metal, rejected parts, scrap powder, rejected, pellet and floor sweeping are to be kept segregated from the paper waste and are not to be handled by this procedure.

All contaminated papers are placed (material above) in the diesel container provided. "Contaminated Paper" includes all material that contains ANY powder residue. Operators ensure that the material is wetted. Keep the container must be properly labeled as to the contents with "Hazardous Waste Satellite Container – contaminated production waste", kept covered at all time except when material is being added, and have secondary containment. Containers are inspected for leakage and picked up on a daily basis. Paper material should not be allowed to become dry.

Prior to collection from the buildings, the material is checked to verify that it consists of 0.2% or less explosive material by weight and meets the approval criteria of the waste profile. DO NOT DUMP BULK POWDER, PELLETS OR FLOOR SWEEPINGS INTO DIESEL CONTAINERS. The excess fuel oil will be drained off so that the material will be reduced to approximately 40% fuel oil by weight. The material will be double bagged in anti-static bags and accumulated in an open head DOT drum.

The drum(s) are kept closed and sealed at all times, except when transferring material into and out of the drum and labeled "Hazardous Waste Satellite Accumulation – Contaminated Plant Debris and designation of which DOT Exception class that it will ship as. The drum will be placed in secondary containment and inspected daily to ensure there are no leaks. Any spillage will be cleaned up immediately. At no time will the volume of paper waste material exceed the 55-gallon drum capacity. When the drum is full it will immediately be marked with an accumulation start date. The drum MUST be transferred into the Hazardous Waste Storage area within 72 hours of the Accumulation Start Date. The drum will be shipped as a hazardous waste to an approved TSDF in accordance with the EX number and approved waste profile description. The Hazardous Waste manifest will be kept on file in the HSE Department for 3 years from the date of shipment.

Shipping/Packaging Material

Shipping material that contains residue of energetic materials shall be turned into the HSE Department and handled as hazardous waste. The contaminated materials will be soaked in diesel and collected daily, if appropriate. It will be handled in accordance with the procedure for handling paper waste generated by production areas. All collection containers MUST be labeled as to the contents of the container. Shipping material contaminated with residue of a hazardous material will be handled as a hazardous waste and turned over to the HSE Department.

Non-Conforming Pellets

Non-conforming pellets that have been designated as scrap will be handled in accordance

with the requirements on the waste disposal profile. Contact the HSE Department for information regarding how package reject pellets. Contact the HSE Department to transfer of scrap pellets to hazardous waste storage after they have been appropriately packaged.

Non-Conforming Impulse Cartridges
Non-conforming Impulse Cartridges should be segregated by product type, inserted into Styrofoam discs and placed into designated collection area for pick up.

Non-Conforming Detonators and Electrically Actuated Devices
Reject containers of detonators will contain enough of an 80% water/20% alcohol mixture to reduce the risk of a static charge (80/20). Note: the water/alcohol mix does not render these parts inert or less sensitive. Change out the reject containers at the end of each segment at a minimum. DO NOT bulk or combine the contents of the reject containers. Store the reject containers separately from other containers of components and explosive mixtures while waiting pick up from building. Ensure Velostat containers are properly labeled. The proper label is a red Hazardous Waste Label marked "Satellite Collection". The label should identify the contents, and the media that the parts are soaking in (i.e. water/alcohol).

In general, the hazardous waste generated at the TKO facility can be substantially characterized by knowledge of the process where the waste is generated. The non-conforming energetic waste streams have basically the same composition as the product; therefore, the waste characterization is based on the product composition. For streams that cannot be properly characterized by process knowledge, HSE personnel will collect a representative sample for off-site laboratory analysis. All approved waste characterization profiles are kept in the operating record in the HSE files.

11. Revision History

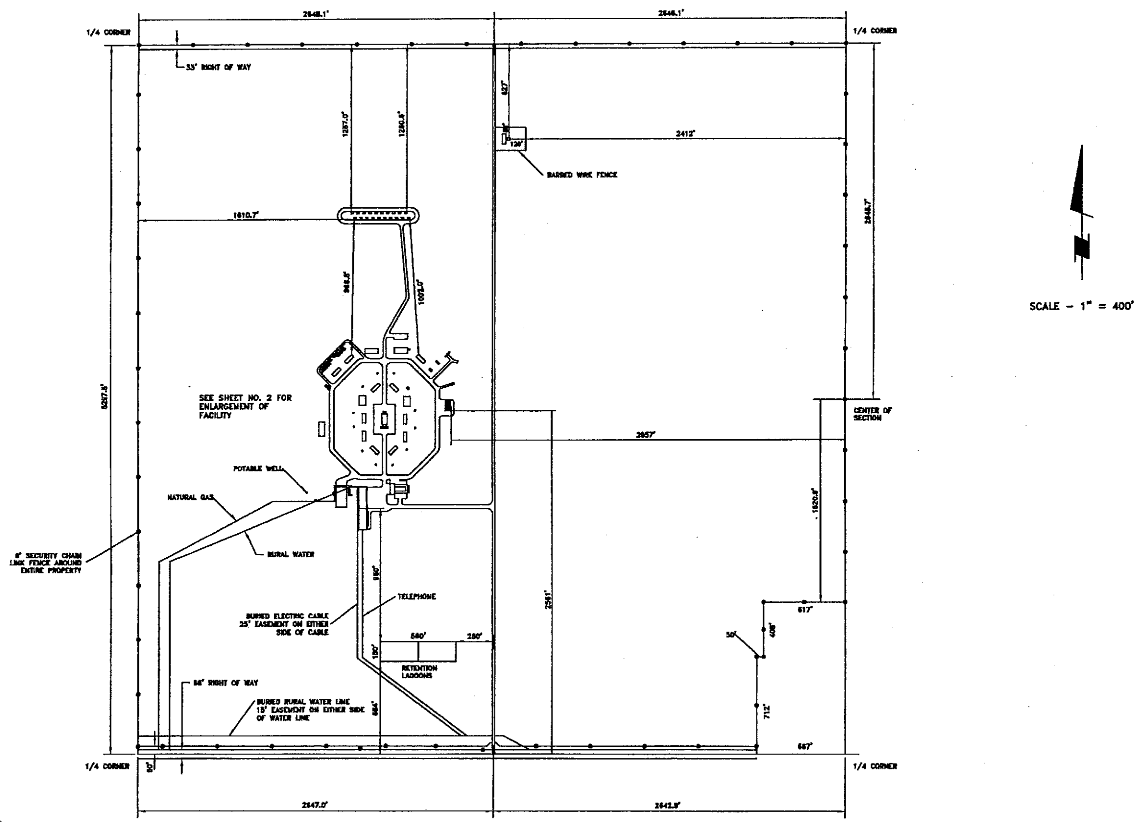
REV	Description of Change	Author	ECO #
A	Updated procedure for RCRA Compliance	HSE	05-05-10
B	**Minor Updates**	**HSE**	**20273**

ATTACHMENT 3

FACILITY PLOT PLAN

TEKORD

REV.	E.C.O.	APPROVED BY	DATE
A	15236	N. HOFFMAN	12-12-02
B	16147		
C	16898	B. HIRST	ELECTRONIC



TECHNICAL ORDNANCE, INC.

MINNEAPOLIS, MINNESOTA

DRAWN BY	R. PETERSON
DATE	10-18-01
APPROVED BY	BOB HIRST
DATE	10-18-01
SCALE	1" = 400'
TITLE	TEK-ORD SITE, CLEAR LAKE FACILITY
CAGE CODE	22761
DWG SIZE	D
DRAWING NO.	809007
SHEET	SHEET 1 OF 2
REV.	C

809007 C

A61

Jacobson, Carrie CJ

From: Karen Esche [KEsche@ced.us.com]
Sent: Thursday, October 14, 2010 12:55 PM
To: Jacobson, Carrie
Cc: Chris Piec; Leif Thompson
Subject: Request for Emergency Permit

Carrie,

Per your request, please find below the legal description for Technical Ordnance and operating hours:

Located about one mile north and one mile east of the city of Clear Lake, in the southeast ¼ of Section 11, Township 115 North, Range 49 West in Deuel County, South Dakota (Latitude 44.777798, Longitude -96.664098).

Sunday 9:30 pm to Friday 11:30 pm
Saturdays as needed

If you have any additional questions, please feel free to contact me at 605-874-2631.

Karen Esche
HSE Manager
Technical Ordnance Inc.
47600-180th Street
Clear Lake, SD. 57226
email: kesche@ced.us.com
fax: 605-874-6780