PIÑON RIDGE MILL
EMERGENCY RESPONSE PLAN

16910 HIGHWAY 90
BEDROCK, CO 81411

Prepared by:

ENERGY FUELS RESOURCES CORPORATION

Revised JULY 2010

MILL EMERGENCY CONTACTS

Position	Name	Location	Phone
Mill Control Room	TBD	Piñon Ridge Mill	TBD
Mill Incident Commander (Shift Foreman)	TBD	Piñon Ridge Mill	TBD
Radiation Safety Officer (RSO)	TBD	Piñon Ridge Mill	TBD
Assistant Radiation Safety Officer	TBD	Piñon Ridge Mill	TBD
General Mill Foreman	TBD	Piñon Ridge Mill	TBD
Plant Manager	TBD	Piñon Ridge Mill	TBD
Vice President Regulatory Affairs	TBD	Corporate Office	TBD
Chief Operating Officer	TBD	Corporate Office	TBD

(Off-site emergency and agency contacts on next page)

OFF-SITE EMERGENCY AND AGENCY CONTACTS

Name	Phone Number
Basin Clinic (Naturita)	(970) 865-2665
Bureau of Land Management (BLM) – Montrose Office Norwood Office Fire Reporting	(970) -240-5300 (970) 327-4261 (970) 257-4800
Colorado Air Pollution Control Division (APCD)	(303) 692-3100
Colorado Department of Public Health and Environment (CDPHE)	(303) 692-2000
Colorado Division of Oil and Public Safety (OPS)	(303) 318-8547
Colorado Environmental Release and Incident Reporting Line	(877) 518-5608
Colorado Radiation Control Program (Hazardous Materials and Waste Management Division)	(303) 692-3300
Colorado Radiation Incident Reporting Line	(303) 877-9757
Colorado State Patrol (CSP)	(303) 239-4501
Emergency Response (Colorado and Utah)	Call 911
EPA National Response Center	(800) 424-8802
EPA Region 8 Emergency Spill Response Spill Report Line	(800) 227-8914
Mine Safety & Health Administration (MSHA) Reporting Line	(800) 746-1553
Montrose County Dispatch (Emergency)	911
Montrose County Sheriff's Office	(970) 864-7333
Montrose Local Emergency Planning Committee (LEPC)	(970) 525-4510
Montrose Memorial Hospital	(970) 249-2211
Nucla/Naturita Fire Department – Naturita Fire House Nucla Fire House	(970) 865-2330 (970) 864-7331
Paradox Fire Department – Fire House	970-859-7330
San Miguel Power Association (SMPA)	(970) 864-7311
St. Mary's Hospital (Grand Junction)	(970) 244-2001
Utah Highway Patrol	(801) 965-4518

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Piñon Ridge Mill Evacuation Plan (24” x 36”)

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A Incident Reporting Form
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Definition and Acronyms

AED	Automated External Defibrillator
ALARA	As Low As Reasonably Achievable
amsl	above mean sea level
APCD	Colorado Air Pollution Control Division
BLM	Bureau of Land Management
BZ	Breathing Zone
CDPHE	Colorado Department of Public Health and Environment
COO	Chief Operating Officer
CSP	Colorado State Patrol
EFRC	Energy Fuels Resources Corporation
EPA	U.S. Environmental Protection Agency
ICS	Incident Command System
GM	Geiger Müller
LEPC	Local Emergency Planning Committee
LSA	Low Specific Activity
MC	Material Containment
Mill	Piñon Ridge Mill
MSDS	Material Safety Data Sheet
MSHA	Mine Safety & Health Administration
NaI	Sodium iodide
OPS	Colorado Division of Oil and Public Safety
PA	Public Announcement
PM_{10}	Particulate Matter less than 10 microns
PPE	Personal Protective Equipment
QA	Quality Assurance Officer
rad	Radiation Absorbed Dose
rem	Roentgen Equivalent in Man
RH	Radiological Health (prefix for procedure)
RQ	Reportable Quantity
RSO	Radiation Safety Officer
RST	Radiation/Security Technicians
RWP	Radiation Work Permit
SCBA	Self-contained Breathing Apparatus
SMPA	San Miguel Power Association
SPCC	Spill Prevention, Control and Countermeasure
SX	Solvent Extraction
TSP	Total Suspended Particulate
U_3O_8	Uranium Oxide (also referred to as yellowcake)
USDOT	U.S. Department of Transportation

Watch (weather) – A situation in which meteorological conditions are such that a severe weather condition is possible
Warning (weather) – A situation in which severe weather is imminent

1.0 Introduction

The Emergency Response Plan has been prepared to provide employees at the Piñon Ridge Mill site the necessary information to respond to potential emergency situations in an expedient and safe manner to prevent harm, to the extent possible, to employees, the public, or the environment. This plan provides response procedures to incidents that may be encountered during operations at the Piñon Ridge Mill (Mill). The procedures were developed to ensure that personal safety is not compromised, responsibilities are assigned, the emergency is mitigated, the public and environment are protected, and that follow-up monitoring and reporting are performed when incidents occur at the Mill.

Incident response contacts and telephone numbers, both on-site and off-site are presented at the beginning of this plan to facilitate a rapid response to incidents. Detailed incident response procedures are presented in Section 4.0.

Emergency contact information will be updated as needed on all copies of this plan and at all posted locations to ensure rapid response to incidents. Posted locations will include:

- Plant Manager's Office
- Mill Foreman's Office
- Safety Department Office
- Guard Gate
- Administration Building
- Change Room
- Control Room

1.1 Facility Description

The Mill processes uranium and vanadium ore from area mines. The milling operation involves grinding the ore into a fine slurry and then leaching it with sulfuric acid to separate the uranium and vanadium from the remaining rock. Uranium and vanadium are then recovered from solution and precipitated as concentrates, which are sealed in 55-gallon, steel drums and transported off site.

The Mill is located in Montrose County approximately 12 miles west of Naturita, Colorado on an approximately 880 acre property in Paradox Valley (see Figure 1). Paradox Valley is elongated at approximately 15 miles long and 5 miles wide and oriented approximately west-northwest to south-southeast. The Piñon Ridge Mill is located at:

16910 Highway 90
Bedrock, CO 81411
(970) XXX-XXXX

Mesas on either side of the valley rise to more than 2,000 feet above the valley floor. The elevation within the valley where the Mill site is located ranges from approximately 6,000 feet above mean sea level (amsl) to the south to approximately 5,400 feet amsl to the north. The surrounding areas are used for cattle grazing, agriculture, uranium mining and undeveloped land (See Figures 1 and 2). The closest residences to the Mill are located approximately 1.8 miles west-southwest, 3.1 miles southeast, and 3.2 miles northwest of the Mill site property

boundary. The site access point to the mill is located at mile marker 23 on the south side of State Highway 90.

As shown in Figure 2, the property is divided into the “restricted area”, where uranium processing and waste disposal occurs, and the “unrestricted area”, which encompasses ancillary facilities outside of the milling and disposal areas. The site property outside of the restricted area consists of the access roads, environmental and meteorological monitoring network, groundwater production well field, soil storage area, Administration Building, Change House/Laboratory Building, Mill offices, Warehouse, Truck Shop, and propane, ammonia, and kerosene storage areas.

The restricted area of the Mill totals approximately 310 acres and consists of the ore pad, Mill facility buildings, tailings cells, and evaporation ponds. The Mill facility structures consist of the Boiler Building, the SAG Mill/Leach Tank Building, the Pre-Leaching and Thickening Area, the CCD Thickener Area, the Solvent Extraction Building, and the Drying/Packaging Building.

Types, maximum quantities, and locations of radioactive and hazardous materials are listed in Table 1 below.

Table 1
On-Site Materials List

Material	Maximum Quantity On-site	Location
Kerosene	38,100 gal.	West of Solvent Extraction Building
Ammonia	12,000 gal.	West of Solvent Extraction Building
Ammonium Sulfate	6,280 CF (solid) 11,800 gal. (solution)	Precipitation and Packaging Building
Sodium Hydroxide Solution	1,100 gal. (50%) 4,500 gal. (8%)	Solvent Extraction Building
Sodium Carbonate Solution	26,400 gal. (31%) 15,200 gal. (15%)	Southeast of Precipitation and Packaging Building
Sulfuric Acid	258,000 gal.	Southeast of Mill Facility
Sodium Chlorate Solution	98,100 gal. (39%)	Precipitation and Packaging Building
Hydrogen Peroxide	7,100 gal. (50%)	Precipitation and Packaging Building
Alamine 336	1,100 gal.	Warehouse
Isodecanol	1,100 gal.	Warehouse
Diesel Fuel	15,900 gal.	Northwest of Solvent Extraction Building, Fire Water Pump, and Emergency Generator
Gasoline	2,000 gal.	Northwest of Solvent Extraction Building
Propane	30,000 gal. 6,000 gal.	West of Reagent Unloading Area Administration Building

1.2 Facility Access

Access to the Mill site is by State Highway 90 at the main entrance located at milepost 23. Access to Paradox Valley is by three primary routes: from the east via State Highway 90, from the west via State Highway 90, and from the north via County Road Y11 off of State Highway 141 near Uravan.

Access to the site could be hampered due to a variety of emergencies including fire/explosion, chemical release, transportation accident, severe weather or wildfire emergency. There are numerous alternate access routes through and around Paradox Valley. Many of the routes include four wheel drive roads that may not accessible by all emergency vehicles or during inclement weather. Local emergency responders are aware of possible routes in and around Paradox Valley and are responsible for choosing the most appropriate route into and through the valley in an emergency situation.

The main entrance to the Mill will be the primary access point to the site whenever possible. In the event that the main entrance to the Mill site is impassable, several alternate routes to the Mill property are available. Access to the site by an alternate route requires Mill personnel to unlock gates at alternate access points and to provide an escort onto the Mill site. Advanced notice of alternate site access is required to necessitate these actions. Alternate access routes to the Mill property are listed below and shown on Figure 1.

Northwest Access Point – Turn south off Highway 90 onto unnamed ranch road located 0.9 mile west of Mill main entrance onto private property (Cooper Property). Follow 0.4 mile to northwest access point.

West Access Point – Turn south off Highway 90 on unnamed ranch road located at off-site air monitor station #4 (14700 State Highway 90 at milepost 20.2) onto private property (Cooper Property). Follow south and southeast for 2.0 miles, stay right at fork and follow 0.8 mile to west access point.

East Access Point – Turn south off Highway 90 onto County Road CC17, located 1.0 mile east of Mill main entrance. Follow south for 0.2 mile, stay right at fork and follow due west for 0.6 mile to east access point.

South Access Point – Turn south off Highway 90 onto County Road CC17, located 1.0 mile east of Mill main entrance. Follow south for 0.2 mile, stay left at fork and follow southwest and west for 1.8 mile to south access point.

Monogram Mesa Access – There is no direct access to the Mill property from Monogram Mesa. However, it offers a good visual perspective of the Mill property and may facilitate emergency response coordination in some situations. Turn south off Highway 90 onto County Road DD19, located 2.8 mile east of Mill main entrance. Follow south and southwest for 3.4 miles where it merges onto County Road EE16, follow for 0.2 mile and stay right onto County Road DD16. Mill property is north of this location. There is no direct access to Mill property from Monogram Mesa.

1.3 Types of Emergencies

Types of incidents that have the potential to occur at the Mill include fire/explosion, chemical reagent release, transportation accidents, nuclear source containment loss, medical

emergencies, severe weather, and wildfires. Because of potential radiation emissions associated with an emergency, most emergency response actions will be handled by trained personnel with the assistance of the Mill Radiation Safety Officer (RSO) or Assistant RSO. Energy Fuels will maintain contact with local agencies and would envision these agencies assisting in providing fire protection, hazardous materials response, and/or medical assistance in an emergency. However, the emergency response facilities located at the Mill are substantial and anticipated to be capable of handling most emergencies without off-site assistance. Primary on-site medical facilities include a First Aid Station, ambulance, and helipad. Refer to Section 6.3 for a more detailed description of these facilities.

Table 2 indicates the methods by which incidents are detected at the Mill.

Table 2
Types of Potential Incidents and Methods of Detection

Type Of Emergency	Detection Method
Fire/explosion	Visual observation by personnel and/or fire detection system
Chemical Spill	Visual observation by personnel and/or automated alarm
Transportation Accident	Notification by transportation contractor or law enforcement agency
Nuclear Source Containment Loss	Visual observation by personnel and/or radiation survey
Medical	Notification by personnel
Severe Weather	Visual observation by personnel or notification by local warning systems
Wildfires	Visual Observation by personnel

A summary of each type of postulated incident above is provided below:

1.3.1 Fire/Explosion

Fire/explosions are detected by integrated fire detection systems and/or by direct observation. Most fire/explosion emergencies can be handled by personnel in the area or on-site emergency response personnel. Details of appropriate response measures are located in Section 4.1 of this plan.

1.3.2 Chemical Reagent Spill

Chemical reagent spills are detected by visual observation by personnel or by alarm systems. Most spills of chemicals can be handled by personnel in the area or on-site emergency response personnel. Details of appropriate response measures for specific chemical reagents

are provided in the Material Containment Plan. Section 4.2 of this plan provides general instructions for response to any chemical reagent spill.

1.3.3 Transportation Accidents

Transportation accidents are immediately reported by the driver of the vehicle, personnel witnessing the accident, or emergency responders at the scene of the accident. Response to transportation accidents occurring on the Mill property will be handled by Mill personnel, on-site emergency response personnel, and, if necessary, off-site emergency responders. Accidents occurring off the Mill property are handled by the appropriate off-site emergency responders and contracted emergency responders. Mill personnel may provide assistance and provide consultation depending on the location and circumstances of the accident. In particular, Mill personnel may assist with radiological screening, surveying, and clean-up at an off-site accident location involving radioactive material. Details of appropriate response measures are located in Section 4.3 of this plan.

1.3.4 Loss of Sealed Nuclear Source Containment

The Mill will use density gauges containing nuclear material in the Mill facility buildings and areas. These are the only instruments at the plant using sealed nuclear sources. Any incidents leading to damage of a nuclear density gauge are to be reported immediately to the RSO or Assistant RSO. In addition, the Safety Department conducts inventory, leak tests and shutter tests of the gauges every three years. Details of appropriate response measures are located in Section 4.4 of this Plan.

1.3.5 Medical Emergencies

Medical emergencies can result from medical conditions or from an injury occurring on the Mill property. Medical emergencies are to be reported immediately to the Safety Department by the personnel experiencing the emergency or other personnel. In most cases, on-site emergency personnel will be able to attend to the medical emergency and transfer ill or injured personnel to the Basin Clinic or regional hospital. Details of appropriate response measures are located in Section 4.5 of this plan.

1.3.6 Severe Weather

Severe weather has the potential of occurring in the area of the Mill. Types of severe weather that have the potential to initiate an emergency include heavy rain, lightning, flooding, hail, heavy snow, high winds, and tornadoes. Detection of the severe weather will be by visual observation by Mill personnel and/or by warnings provided by local authorities. Most severe weather situations will restrict outdoor activities only. In rare cases, Mill personnel may be instructed to take cover in the buildings in which they are currently located. Details of appropriate response measures are located in Section 4.6 of this plan.

1.3.7 Wildfires

The Mill is located in an area with a moderate to substantial potential for wildfires. For the purposes of this plan, wildfires are limited to those fires outside of the restricted area. Fires

breaching the restricted area will be treated as a fire/explosion and appropriate measures are outlined in Section 4.1. Detection of wildfires will be by visual observation by Mill personnel. Most wildfires will affect outdoor operations only. Details of appropriate measures are located in Section 4.7 of this plan.

1.4 Classification and Notification of Incidents

Incidents at the Mill are classified as either an “Alert” or a “Site Area Emergency”. In general, the alert classification is issued for incidents that have little or no off-site impacts and the site area emergency classification is issued for incidents with potential off-site impacts. Each incident will be evaluated by the appropriate on-site emergency response personnel (see Sections 4.1 to 4.6) and a determination of the classification of the emergency will be made on a case-by-case basis.

1.4.1 Alert

An alert is defined as an incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to have significant off-site impacts. An alert may require mobilization of the Mill emergency response personnel or off-site emergency responders or involve severe exposure or injury to on-site personnel, but does not indicate an expectation of off-site consequences.

Alerts will be authorized by the Mill Incident Commander and are announced to Mill personnel and other on-site emergency responders involved via the public announcement (PA) system, handheld radios, and/or telephone. Off-site emergency responders, if necessary, are notified of alerts via telephone or cellular phone. Initial and follow-up notifications to the CDPHE and other off-site agencies are conducted under direction of the RSO as necessary.

1.4.2 Site Area Emergency

A site area emergency is defined as an incident that has led or could lead to a release to the environment of radioactive or other hazardous material and that could require emergency responders to protect off-site persons or property.

Site area emergencies are authorized by the Mill Incident Commander and are announced to Mill personnel and other on-site emergency responders involved via the PA system, handheld radios, and/or telephone. Off-site emergency responders are notified of site area emergencies via telephone or cellular phone. Potentially affected residents in the vicinity of the Mill site may be notified by the Montrose County Sheriff’s Office via reverse 911 calls.

Table 3 describes examples of conditions that may cause initiation of an alert or a site area emergency.

Table 3
Examples of Initiating Conditions

Type of Incident	Alert Conditions	Site Area Emergency Conditions
Fire/explosion	May effect radioactive material or safety systems	Involves radioactive material or compromises safety systems
Chemical Reagent Spills	Spill that is contained within the Mill site and does not cause an uncontrolled airborne release of radioactive material or hazardous gases	Spill beyond the property boundary or involving an uncontrolled airborne release of radioactive material or hazardous gases
Transportation Accident	Does not include an uncontrolled release of radioactive or hazardous materials	Includes an uncontrolled release of radioactive or hazardous materials
Nuclear Source Containment Loss	Minor loss of containment that can be contained or controlled in a timely manner by on-site personnel	Loss of containment that cannot be contained or controlled in a timely manner by on-site personnel
Medical Emergency	Involves injuries, medical conditions, and number of injured personnel that are within the capabilities of the on-site medical facilities	Involves injuries, medical conditions, or number of injured personnel beyond the capabilities of the on-site medical facilities
Severe Weather	May affect radioactive material or safety systems	Compromises safety systems or the integrity of radioactive
Wildfire	Involves a wildfire outside of the license boundary	Involves wildfires that breach the property boundary and may threaten Mill buildings

1.4.3 Notifications

The regulatory agencies that are to be notified are listed for each type of incident in Sections 4.1 to 4.7. The contact numbers for Mill emergency response personnel, local emergency responders and off-site agencies are located in the front of this plan. Initial incident notifications will be made to the Control Room and then forwarded to the Mill Incident Commander. Notification will include the following information:

- the type and available specifics of the incident,
- any injuries, and
- any initial actions that have already taken place.

Initial notifications are made by telephone. The Incident Reporting Form in Appendix A includes the information that needs to be reported during the initial notification of an incident.

Follow-up incident reports are more detailed than the initial notifications and are prepared under the direction of the Vice president of Regulatory Affairs in accordance with the CDPHE Rules and Regulations Pertaining to Radiation Controls, 6 CCR 1007-1 Sections 4.51 through 4.54,

where applicable. Follow-up reporting may be sent via facsimile, email, or postal service, as requested by the recipient agency.

For details of follow-up incident report and record keeping requirements, refer to Section 8.1.

2.0 Responsibilities

2.1 Key Individuals by Position

Normal day to day operations at the Mill involve a staff of approximately 85 personnel. Key positions and responsibilities in day to day operations at the Mill include the following:

Executive Vice President and Chief Operating Officer (COO) – Responsible for directing the daily operations of Energy Fuels Resources Corporation including mineral exploration, ore production, Mill processing, and the design and construction of new facilities.

Vice President Regulatory Affairs – Responsible for all health and safety and environmental permitting and compliance for the company and reports directly to the COO.

Quality Assurance Officer (QA Officer) – Responsible for verifying that Safety Department personnel are complying with applicable regulations and permits at the Mill, mine sites, and other company facilities. This person coordinates directly with the RSO and Plant Manager at the Mill and reports to the Vice President of Regulatory Affairs.

Radiation Safety Officer (RSO) – Responsible for health and safety and environmental compliance at the Mill and will report directly to the Vice President of Regulatory Affairs. The RSO will have extensive training and experience in radiation health physics. The RSO will be the primary contact between CDPHE/MSHA and the Mill and will work closely with the Plant Manager to maintain a safe work environment.

Assistant RSO: Responsible for directing the radiation/security technicians (RSTs) in monitoring of radiation levels and other health, safety, and environmental parameters throughout the Mill site. The Assistant RSO reports to the RSO, has similar training to the RSO and fills in temporarily for the RSO when required.

Radiation/Security Technicians (RST): Responsible for monitoring throughout the Mill site for both health and safety and environmental purposes. They are also responsible for security at the Mill, especially at the start and end of shifts when personnel are entering and leaving the facility. Mill security includes electronic pass cards and a turnstile at the entrance to the facility so that only authorized personnel may enter. RSTs report directly to the Assistant RSO.

Plant Manager – Responsible for authorizing the resources necessary to operate the plant in a safe and environmentally sound manner. The Plant Manager reports to the COO.

General Mill Foreman – Responsible for Mill operations and the health and safety of all workers. The General Foreman works closely with the Safety Department to insure that health and safety procedures are implemented properly. The General Mill Foreman is responsible for supervising the Shift Foremen and reports to the Plant Manager.

Shift Foremen – Responsible for the Mill operations and health and safety of the workers on their shift and reports to the General Mill Foreman. In addition, the Shift Foremen is typically the Mill Incident Commander on duty and as such has overall authority to declare an alert or site area emergency and is the first responder to all incidents.

2.2 Emergency Response Team

Table 4 shows the personnel designated to respond to incidents at the Mill. During off-shift periods, weekends, holidays, and extended outages these personnel will be on call or will designate their responsibilities to alternate personnel.

Table 4
Emergency Response Personnel and Responsibilities

Title	Responsibilities
Vice President of Regulatory Affairs	• Executive Decisions Relating to Incidents • Support
Mill Incident Commander (1)	• Assume Command of Emergency Response • Assessment of Incident • Develop Action Plan • Account for Personnel, Contractors, and Visitors • Respond to Injuries as Needed • Determine Need for Off-site Emergency Responders and Notify as Necessary
Plant Manager	• Corporate Notification • Notification of Off-site Emergency Responders for Assistance • Emergency Response Oversight • Coordination with Mill Incident Commander
Radiation Safety Officer (RSO) and Assistant RSO	• Radiological and Chemical Emergency Response Oversight • Radiological and Chemical Monitoring Oversight • Occupational Safety and Medical Incident Response • Occupational Safety Monitoring • CDPHE and other off-site agency notifications (initial and follow-up) • Emergency Response Training and Exercises/Drills • Coordinate with Mill Incident Commander • Maintain and Update Emergency Response Plan
Radiation/Security Technicians	• Radiological and Chemical Emergency Response • Radiological and Chemical Monitoring • Occupational Safety Monitoring
Emergency Response Personnel (2)	• Emergency Response Actions • Follow Emergency Instruction as Provided by the Mill Incident Commander

Title	Responsibilities
All Mill Personnel	• Provide Medical Response in Life Saving Situations • Notify to Mill Control Room of Incidents • Follow Emergency Instruction as Provided by the Mill Incident Commander or Supervisor

Notes:
(1) The Mill Incident Commander position is typically held by the Shift Foreman or General Foreman
(2) Emergency response personnel consist of employees that have received the required Mill emergency response training

2.3 Off-Site Assistance and Notifications

Although most incidents can be handled by on-site emergency response personnel, some situations will require the assistance of off-site emergency responders and agencies. In general, alerts do not require off-site assistance and site area emergencies do require off-site assistance, although this will not always be the case. Table 5 identifies the off-site agencies and organizations that may be contacted and their emergency response capabilities.

Table 5
Off-site Assistance
(see front of plan for contact information)

Agency/Organization	Capabilities
Paradox Fire Department	Emergency Fire and Ambulance Response
Nucla/Naturita Fire Department	Emergency Fire and Ambulance Response
Montrose County Sheriff's Office	Emergency Response and Reverse 911
Basin Clinic	Basic Medical Treatment
Montrose Memorial Hospital	Full Medical Treatment and Care
St. Mary's Hospital	Full Medical Treatment and Care
San Miguel Power Association	Electrical Power Service (e.g. shut-off)
To Be Determined	Propane Service
Bureau of Land Management (BLM)	Wildfires on, or Threatening, BLM Land
CDPHE	Response Coordination Support
Montrose County Local Emergency Planning Committee	Notification/Coordination of Off-site Alerts

3.0 Incident Command System

To effectively manage incidents, emergency responders implement what is called the “Incident Command System” (ICS). This system provides an organizational structure, builds safety into the system to protect emergency responders and the public, and effectively uses needed resources. The ICS is implemented during any situation encountered by Mill personnel in which off-site assistance is determined to be necessary or unnecessary. It also provides for an easy transition between persons in command. This system is applied to manage all situations that involve fire/explosion, chemical spills, transportation accidents, nuclear source containment loss, medical emergencies, severe weather, and wildfires.

Note: This system must be understood by Mill personnel who respond to off-site requests for emergency assistance involving radioactive material shipment accidents since this system is used at emergency scenes by public sector emergency responders under the requirements of OSHA and EPA hazardous material emergency regulations.

Whenever an incident occurs on the Mill site, the ICS will be activated by the Mill Incident Commander. The Mill Shift Foreman or General Mill Foreman assumes the role of the Mill Incident Commander until such a time that command may be transferred to other responders.

The **Mill Incident Commander**:

- Assumes command of the incident and all response actions,
- Reports to the emergency scene to assess the emergency situation,
- Takes action to account for all personnel, contractors and visitors and to respond to injuries as needed
- Develops an action plan,
- Determines the need for off-site assistance, and
- Gives directions to mitigate the emergency.

Mill standard operating procedures will be followed. Depending on the type of emergency, the Mill Incident Commander determines the command staffing needed to manage the incident and the need for emergency responders. The Mill Incident Commander will also establish a command post location and wear an incident commander “IC” vest.

If warranted, the RSO or Assistant RSO will prepare a scene safety plan for review by the Mill Incident Commander and emergency responders as necessary.

Other positions that are staffed as needed during an incident to address:

- Safety
- Operations
- Planning
- Logistics
- Administration
- Command Support
- Staging
- Public Information Distribution
- Site Liaison
- HazMat Operations Supervision
- Entry Team Supervision

- Decontamination Supervision
- Support Team Supervision
- Research
- Medical Treatment
- Security
- Radiation Safety
- Environmental Coordination

Most incidents require only the Mill Incident Commander and the safety positions to be staffed. Mill management team members, upon their arrival at the emergency scene, are to support the Mill Incident Commander as needed. Mill management team members will not assume the role of Mill Incident Commander unless they have been trained to do so. Mill management team members will keep the Energy Fuels corporate office personnel updated on the status of the incident as needed.

If off-site emergency response from the fire department is required, a transfer of command will be made between the Mill Incident Commander and the senior responding officer when the fire department arrives at the Mill. The former Mill Incident Commander will work closely with and assist the fire department incident commander with information on Mill buildings, building floor plans, hazards, processes and safety concerns. When the fire department leaves the Mill site, command will be transferred back to the Mill Incident Commander to terminate the emergency. Transfer of command is always done in a face-to-face meeting between the Mill Incident Commander and fire department officers/incident commanders.

The Mill Incident Commander will review emergency specific procedures in Sections 4.1 to 4.7 (such as fire/explosion, chemical spills, transportation accidents, nuclear source containment loss, medical emergencies, severe weather, and wildfires) for actions to be taken and job assignments that are to be made.

The Mill Incident Commander ensures that RSO, assistant RSO, and RSTs will be involved in equipment and personnel monitoring for radiation and chemical exposure. Monitoring is performed such that the safety of the individuals performing the monitoring is not compromised and lifesaving efforts are not impeded.

The Mill Incident Commander will ensure through the Safety Department that all personnel and equipment are monitored prior to leaving the site. In the event that injured people are being transported to the hospital, monitoring will be conducted based on the degree of injury. In the event of a life and death situation, monitoring can be conducted on equipment and personnel at the hospital when possible. **Under no circumstances will monitoring supersede lifesaving efforts.**

When the emergency has been adequately addressed, the Mill Incident Commander will terminate command and declare that the emergency is over. Follow-up documentation and reports will be prepared in accordance with Section 8.1.

4.0 Emergency Response Measures

4.1 Fire/Explosion

General Response Procedures:

- Initial assessment by Mill personnel at the scene
- Notification of fire/explosion to the Mill Control Room by personnel or fire alarm
- Announcement of fire/explosion and location over the Mill PA and hand-held radios with evacuation instructions
- Initiation of the Incident Command System
- Assessment of the fire/explosion
- Notification of the fire department for assistance, if necessary
- Accountability check for personnel from buildings or areas involved
- Notification of the off-site agencies, as required
- Incident response to extinguish or control the fire
- Termination of the incident
- Return of systems to normal
- Assessment of doses to response personnel and the public, if any
- Follow-up reporting of the incident

Notifications and Reporting (see front of plan for contact information):

Position/Agency	Situation	Time
Mill Incident Commander (Shift Foreman on duty or General Mill Foreman)	All fire/explosions	Immediately
Radiation Safety Officer or Assistant Radiation Safety Officer	All fire/explosions located within the license boundary	Immediately
Local Fire Department (911)	If off-site assistance is required	Immediately
Colorado Environmental Release and Incident Reporting Line	If fire/explosion involves non-radiological chemicals	Immediately
Colorado Radiation Incident Reporting Line	If fire/explosion involves radiological process chemicals or materials	Immediately
MSHA Reporting Line	Incident results in death or injury which has a reasonable potential to cause death	Immediately
EPA National Response Center	If fire/explosion involves a substance at or above the reportable quantity (see Table 6)	Within 24 hours

All agencies notified of the incident initially should be notified again when the emergency has been terminated and the plant is back in compliance and operating.

EPA Administrator, MSHA, CDPHE, and/or Colorado Air Pollution Control Division (APCD) may require a written follow-up report.

Mill personnel will take the following actions:

Notify the Mill Control Room of the fire/explosion. The Mill Incident Commander will go to the location of the fire/explosion and, if warranted, an announcement with evacuation instructions will be made to personnel over the Mill PA system and hand-held radios.

Evacuate to the Assembly Area (gravel parking lot south of the Mill facility) if instructed to do so by means of the phone, PA system, hand-held radios, or other evacuation signal. If the pathway to the Assembly Area is blocked by hazards (e.g. smoke, fire or spill), proceed to the Assembly Area by an alternate route (see Figure 3 or Evacuation Plan posted at the Mill). If instructed to do so or if the Assembly Area is compromised, proceed to the Alternate Assembly Area (west of the Truck Shop).

Attempt to control and/or extinguish incipient fires. An "incipient fire" is a fire in the initial or beginning stage and which can be controlled or extinguished with portable fire extinguishers or small hose systems without the need for protective clothing and breathing apparatus. Efforts to control and/or extinguish an "incipient fire" using a portable fire extinguisher will be based on your personal training and only attempted if:

- you can identify the "class of fire" burning (Class A, B, C, D, or K);
  - Class A: Ordinary Combustibles
  - Class B: Flammable liquids and gases
  - Class C: Electrical Equipment
  - Class D: Combustible Metals
  - Class K: Cooking Oils and Fats
- there is a portable fire extinguisher in the immediate area, which is "rated" for the class of fire that is burning;
- your life and safety is not in danger and your evacuation path is not blocked by the smoke and heat from the fire (If your life or safety is in danger or the evacuation path is impacted, then evacuate the area immediately to the Assembly Area);
- you have been trained to use the portable fire extinguisher and extinguish fires; and
- the fire is still in the incipient stage or can be defined as "incipient".

Follow instruction as provided by the Mill Incident Commander upon arrival.

The Mill Control Room will initiate the Incident Command System and the following actions will be taken:

Notify the Mill Incident Commander.

The Mill Incident Commander will proceed immediately to the location of the fire/explosion and will:

- meet with the person that has discovered and reported the fire/explosion;
- evaluate the growth and spread of the fire, the impact on the building, process or Mill operations and check on treatment for any injured persons;
- determine if off-site support from the fire department is necessary;
- assume command of the emergency until the arrival of the fire department, if necessary; and

- continue to assess the growth and spread of the fire and contact off-site support as necessary.

If warranted, the local fire department will be contacted by dialing 911. The fire department will request the following information:

- the fire/explosion location, type, and size
- any injuries, and
- any initial actions that have already taken place.

Wherever possible, efforts will be made to prevent an on-site fire from causing a wildfire. These efforts may include making a firebreak or wetting surrounding vegetation. If an on-site fire does cause a wildfire, the measures outlined in Section 4.7 will be employed.

If support of the fire department is necessary, the Mill Incident Commander will instruct the Security Guard on duty to allow entrance of off-site emergency responders and arrange for an escort to take them to the scene of the incident. Upon arrival, the Mill Incident Commander will turn over command of the fire/explosion emergency to the senior fire department officer and will provide whatever assistance possible.

The Mill Incident Commander will contact appropriate supervisors and management personnel to account for evacuated personnel (see Section 5.1.1).

The Mill Incident Commander will assign personnel to make the necessary off-site agency notifications as required by the specifics of the incident outlined above.

The Mill Incident Commander will assign personnel to begin calling, by phone or hand-held radio, management personnel and other personnel as necessary to notify them of the fire/explosion or to request that they return to the Mill to assist with the incident.

If water from fire hydrants is going to be used for the fire emergency, the Mill Incident Commander will assign personnel to monitor the operation and fuel level of the diesel driven fire pump and the level of the water in the tank supplying water to fight the fire.

In buildings that have fire suppression systems, the Mill Incident Commander will check on the operation of those systems, if the size of the fire/explosion is large enough to cause the system to operate. The following buildings contain fire suppression systems:

- Solvent Extraction Building (mister)
- Change House/Laboratory Building (sprinkler)
- Warehouse (sprinkler)
- Administration Building (sprinkler)

After a fire is extinguished, the Mill Incident Commander will ensure that all fire suppression equipment and systems are recharged, replaced, or returned to normal operation or status as soon as practical.

Monitoring and Incident Follow-up

Safety Department personnel will monitor for radiation and/or chemical exposure as necessary. Monitoring will be performed such that the safety of the individuals performing the monitoring will not be compromised. Radiation contamination on all personnel and equipment involved in the emergency response will be monitored prior to leaving the site. See the Health & Safety

Plan for procedures for Release of Equipment to Unrestricted Areas (RH-070); Beta and/or Gamma Exposure Rate Surveys (RH-110); Alpha Beta Gamma Contamination Surveys (RH-120); and Personnel Release Surveys(RH-200).

In the event that injured people are being transported to the hospital, monitoring will be conducted based on the degree of injury. In the event of a life and death situation, monitoring can be conducted on equipment and personnel at the hospital, when feasible. **Under no circumstances will monitoring supersede life saving efforts.**

If smoke from a fire/explosion is leaving the Mill property, monitoring for radiation or toxic chemicals will be conducted. This monitoring can be accomplished with the use of colorimetric gas tubes (for chemical concentration) combined with the analysis of the perimeter air monitoring filters.

All water runoff within the Mill is contained and controlled. Runoff generated during fire fighting operations is to be controlled and pumped to one or both of the stormwater ponds. If smoke from a fire/explosion leaves the Mill property, then monitoring should be conducted for radiation or other toxic chemicals as necessary.

In the event that sample results indicate that personnel could have been exposed to levels in excess of regulatory limits or if individuals exhibit symptoms of chemical exposure, then these individuals will be referred to the local hospital for evaluation by staff physicians. Exposure of off-site individuals will be evaluated in the same manner.

The Mill Incident Commander will determine when the incident has ended and the plant can return to normal operations. He will then assign personnel to notify the appropriate agencies that the incident is over.

Safety Department personnel will investigate the cause of the fire/explosion and develop corrective measures to prevent future occurrences.

Follow-up reporting of the incident to regulatory agencies will be conducted under the direction of the Vice President of Regulatory Affairs.

4.2 Chemical Reagent Spill

General Response Procedures:

- Initial assessment by Mill personnel at the scene
- Determination of type and hazardous characteristics of material released and the category of the spill
- Notification of the Mill Control Room by personnel
- Announcement of the spill and location over the Mill PA and hand-held radios with, if warranted, evacuation instructions
- Initiation of the Incident Command System
- Assessment of the spill
- Accountability check for buildings or areas involved
- Notification of fire department for assistance, if necessary
- Notification of off-site agencies, as required
- Control and containment of spill
- Initiation of cleanup
- Termination of the incident
- Return of systems to normal
- Assessment of doses to response personnel and the public, if any
- Follow-up reporting of the incident

Notifications and Reporting (see front of plan for contact information):

Position/Agency	Situation	Time
Mill Incident Commander (Shift Foreman on duty or General Mill Foreman)	All spills	Immediately
Radiation Safety Officer or Assistant Radiation Safety Officer	All spills	Immediately
Local Fire Department (911)	If off-site assistance is required	Immediately
Colorado Environmental Release and Incident Reporting Line	If spill is a release and involves non-radiological chemicals above reportable quantity or any amount in waters of the State (including dry gullies)	Immediately
Radiation Incident Reporting Line	If spill is a release and involves radiological chemicals above reportable quantity or any amount in waters of the State (including dry gullies)	Immediately
	If loss, theft, release, contamination, fire, or explosion involving licensed nuclear material occurs	Immediately

Position/Agency	Situation	Time
Montrose LEPC (local emergency planning committee)	If spill is a release above reportable quantity	Immediately
MSHA Reporting Line	Incident results in death or injury which has a reasonable potential to cause death	Immediately
EPA National Response Center	If spill is a release above reportable quantity	24 hours
Colorado Division of Oil and Public Safety (OPS)	Incidents involving spill of petroleum products over 25 gallons, any amount in waters of the State, or not cleaned-up in 24 hours	24 hours

The material information sheets, found in the Material Containment Plan, provide specific reporting requirements for spills based on the type of chemical spilled, the quantity spilled and the location of the spill (i.e. into waters of the State). Reportable quantities that are provided on the information sheets are based on conservative values of components expected to be in the chemical based on MSDSs, design values and available analytical data. These amounts should be considered guidelines and should be used for initial reporting. Actual reportable quantities should be calculated based on the most representative analytical data for the process chemical that is available.

See Section 4.3 for reporting requirements for spills occurring in transit.

All agencies notified of the incident initially should be notified again when the plant is back in compliance and operating.

The EPA Administrator, MSHA, CDPHE, Colorado Air Pollution Control Division (APCD), and/or Montrose LEPC may require written follow-up report.

Spill Categories:

Spills will be classified in one of three categories based on their size and potential affects to human health and the environment. The categories used to classify spills at the Mill are:

Category I Spill

- The spill is small and can be controlled and cleaned-up by immediate personnel, does not include impacts to off-site property or the public, and does not exceed the appropriate reportable quantity(s).
- A Category I spill may include leakage from a tank or piping or a small spill not exceeding the appropriate reportable quantity(s).

Category II Spill

- The spill can be controlled or cleaned up with on-site personnel and does not include impacts to off-site property or the public.
- May or may not exceed the appropriate reportable quantity(s).
- A Category II spill may include one in which a substantial volume of a chemical or

solution is spilled, but is contained and can be cleaned up by Mill personnel.

Category III Spill

- The spill requires off-site emergency responders because the Mill cannot supply an adequate number of trained personnel to:
  - Safely mitigate the spill in a timely manner,
  - Prevent injury to other Mill personnel or the public,
  - Prevent further damage to the Mill and/or off-site property, or
  - Minimize damage to the environment.
- May or may not exceed the appropriate reportable quantity(s).
- A Category III spill may include a rupture or major leak from a reagent tank with impacts to off-site property or persons.

Reportable Quantities:

Reportable Quantities (RQs) and volume conversions for reagent and process chemicals used at the Mill are provided in Table 6.

Table 6
Reportable Quantities (RQ)

MATERIAL	RQ	RQ equivalent	Basis
Kerosene/ Diesel Fuel/ Gasoline	25 gal	25 gal	---
Anhydrous Ammonia	100 lb	19 gal	99.5% Solution (1)
Sodium Hydroxide	1,000 lb	157 gal	50% Solution (1)
		1,230 gal	8% Solution (1)
Sulfuric Acid	1,000 lb	70 gal	93% Solution (1)
Ore	1 lb As	1.3 ton	387 mg/kg Arsenic (2)
	10 lb Pb	3.4 ton	1,470 mg/kg Lead (2)
	0.1 Ci U	32 ton	5,100 mg/kg Uranium (2)
	0.1 Ci Ra^{226}	94 ton	1,170 ρCi/g $Radium^{226}$ (2)
	100 lb Se	122 ton	410 mg/kg Selenium (2)
Water Treatment Precipitant	1 lb As	1.6 ton	311 mg/kg Arsenic (3)
	0.1 Ci U	160 ton	1,010 mg/kg Uranium (3)

Table 6
Reportable Quantities (RQ) (continued)

MATERIAL	RQ	RQ equivalent	Basis
Pre-leaching and CCD Thickener Solutions	1 lb As	820 gal	146 mg/L Arsenic (4)
	1,000 lb H_2SO_4	2,240 gal	5% Sulfuric Acid (1)
	100 lb NH_4	2,650 gal	4,520 mg/L (4)
	0.1 Ci U	52,000 gal	0.75 g/L Uranium (1)
	0.01 Ci Th^{230}	96,000 gal	27,500 ρCi/L $Thorium^{230}$ (4)
Leaching Solutions	1,000 lb H_2SO_4	660 gal	17% Sulfuric Acid (1)
	1 lb As	820 gal	146 mg/L Arsenic (4)
	100 lb NH_4	2,650 gal	4,520 mg/L (4)
	0.1 Ci U	23,000 gal	1.67 g/L Uranium (1)
	0.01 Ci Th^{230}	96,000 gal	27,500 ρCi/L $Thorium^{230}$ (4)
Organic Solution	25 gal Kerosene	26 gal	96% Kerosene (1)
Loaded Organic Solution	0.1 Ci U	22,000 gal	1.77 g/L Uranium (1)
Loaded Sodium Carbonate Solution	0.1 Ci U	540 gal	71.7 g/L Uranium (1)
Yellowcake (wet)	0.1 Ci U	500 lb	35% Uranium by weight (1)
Yellowcake (dry)	0.1 Ci U	325 lb	100% Uranium by weight (1)
Tailings Liquor and Raffinate	1 lb As	820 gal	146 mg/L Arsenic (4)
	100 lb NH_4	2,650 gal	4,520 mg/L (4)
	0.01 Ci Th^{230}	96,000 gal	27,500 ρCi/L $Thorium^{230}$ (4)

(1) Based on design values from Piñon Ridge Basic Engineering Report (CH2M Hill 2009)
(2) Based on analytical data values of Salt Wash ore from five area uranium mines (see Appendix B)
(3) Based on analytical data values of water treatment precipitant from the Whirlwind Mine (see Appendix B)
(4) Based on analytical data values of tailings liquor from the White Mesa Mill (see Appendix B)

Mill personnel will take the following actions:

Determine the category classification of the spill (see Section 4.1).

Notify the Mill Control Room of the spill. Give the specifics of the incident including the chemical(s) involved, the volume/quantity spilled, the category classification of the spill, the type (leak, spill, containment failure, etc.), location, and if there are any injuries. The Mill Incident Commander will proceed to the location of the spill. An announcement of the spill and evacuation instructions, if warranted, will be made to personnel over the Mill PA system and hand-held radios.

Evacuate to the Assembly Area (gravel parking lot south of the laboratory/change room building) if instructed to do so by means of the phone, PA system, hand-held radios, or other

evacuation signal. If the pathway to the Assembly Area is blocked by hazards (e.g. smoke, fire or spill), proceed to the Assembly Area by an alternate route (see Figure 3 or Evacuation Plan posted at the Mill). If instructed to do so or if the Assembly Area is compromised, proceed to the Alternate Assembly Area (west of the Truck Shop).

For a Category I Spill, personnel who have been trained in chemical handling will take the following actions. These actions should only be performed if they can be done so safely.

- Control the spill – Attempt to control the source of the leak or spill by shutting valves, diverting process flows, or otherwise minimizing the source of the spill.

- Contain the Spill – Attempt to contain the spill by directing material towards sumps, berming the area to prevent spread, or covering the spill to isolate the spilled material.

- Clean the Spill – Attempt to direct the material to a sump area or otherwise collect the material. This may consist of shoveling up solid materials or spreading absorbent material over liquid spills. Refer to the material information sheet or MSDS in the MC Plan for material-specific information.

Spill response materials available to operational personnel include numerous spill response kits located throughout the site that include absorbents, disposal bags, PPE, and other materials as appropriate. These kits are located near each reagent storage area and in all process areas. In addition, high-pressure hoses, squeegees, and shovels are located throughout the facility for directing spilled materials into containment sumps.

For a Category II or III Spill, personnel will wait for arrival of the Mill Incident Commander unless instructed to evacuate. Personnel may attempt to control the source of the leak or spill only if they can do so in a safe manner. Personnel not trained in emergency response should not attempt to perform any actions in the immediate vicinity of the spill unless directed to do so by a Foreman or the Mill Incident Commander. Personnel will follow instruction as provided by the Mill Incident Commander upon arrival.

All Mill personnel are trained to control and contain chemical reagent leaks and spills that are defined as Category I and some Category II Spills. Mill emergency response personnel receive additional training that includes responding to Category II and III Spills. This training is documented on personnel training forms.

The Mill Control Room will initiate the Incident Command System and the following actions will be taken:

Notify the Mill Incident Commander.

The Mill Incident Commander will proceed immediately to the location of the spill and will:

- meet with the person(s) that discovered and reported the spill;
- evaluate the size and extent of the spill, the impact on the building, process or Mill operations, and check on treatment for any injured persons;
- determine if off-site support from the fire department or emergency responders is necessary;
- assume command of the emergency and direct personnel in controlling and cleaning up the spill; and

- continue to evaluate the size and extent of the spill and contact off-site support as necessary.

If the Mill Incident Commander determines that the incident is a Category III spill, the local fire department hazmat team will be contacted by dialing 911. The hazmat team will request the following information at a minimum:

- the spill location, type, and size
- any injuries, and
- any initial actions that have already taken place.

If support of the fire department is necessary, the Mill Incident Commander will instruct the Security Guard on duty to allow entrance of off-site emergency responders and arrange for an escort to take them to the scene of the incident. Upon arrival, the Mill Incident Commander will turn over command of the spill response to the senior fire department officer upon arrival and will provide whatever assistance possible. Mill personnel will provide whatever assistance they can as provided by their training, knowledge of site chemicals, hazards, processes, buildings and site hazardous material containers.

The Mill Incident Commander will contact appropriate supervisors and management personnel to account for evacuated personnel (see Section 5.1.1).

The Mill Incident Commander will assign personnel to make the necessary off-site notifications to agencies and/or nearby residents as required by the specifics of the incident outlined above.

The Mill Incident Commander will assign personnel to begin calling, by phone or hand-held radio, management personnel and other personnel as necessary to notify them of the spill or to request that they return to the Mill to assist with the incident.

Control and Containment Measures

General spill control and containment measures that can be employed by Mill emergency response personnel for liquid, solid, and gas materials are presented in the following sections. Refer to the Material Containment Plan and Spill Prevention Control and Countermeasure Plan for measures specific to the material spilled.

Liquid Spills

Follow steps above to initiate the Incident Command System and perform a preliminary analysis of the incident.

Isolate the area and make sure that everybody is evacuated from the hazard area.

Be familiar with the hazards of the chemical(s) and the personal protective equipment (PPE) needed before taking any actions that could cause a chemical exposure.

Determine if the container that is leaking or the spill is in secondary containment capable of containing the entire spill or leak. All reagent and process chemical tanks have secondary containment that is capable of holding the largest tank within the containment area plus a minimum of 10 percent more volume. Secondary containment is also provided around piping and sumps. If it is evident that the secondary containment will not be able to contain the volume of the spill, then determine where the overflow will occur and if its anticipated direction of travel presents any additional concerns.

If additional concerns are evident, take preventive measures at the direction of the Mill Incident Commander (using appropriate PPE) to reduce or eliminate the potential impact from an overflow. This could require the movement of equipment, erecting berms, creating a channel to divert flow, building a dam, removing other chemicals, etc.

Take corrective measures to contain, collect, and/or divert the spilled material. This may involve shutting off valves, using absorbent materials, operating pumps (shut off to stop flow or turn on to divert or collect material), directing material to containment trenches and sumps, or any number of other methods.

Initiate cleanup procedures. The degree of cleanup will depend on the amount of material spilled, the location of the spill and the feasibility of cleanup.

Determine the cause of the loss of containment (valves, piping, equipment, etc.) after the material is contained or under control and take corrective actions. Corrective actions may include repair or replacement of damaged containers, pipes, valves, etc.

Chemical Gas Leaks

Follow steps above to initiate the Mill Incident Command System and perform a preliminary analysis of the incident.

A large release of a chemical as a gas will most likely require off-site assistance (i.e. will be a Category III Spill).

Check Mill site windsocks or wind flags for wind direction. Isolate the area and make sure everybody is evacuated from the hazard area to an upwind location.

Be familiar with the hazards of the chemical(s) and the PPE needed before any actions are taken that could cause a chemical exposure. Although most gas leaks will dissipate quickly, there may be meteorological conditions that could cause the leak to move in a concentrated cloud to downwind residents.

Special precautions must be taken when materials such as anhydrous ammonia, natural gas, and propane are involved.

If a plan is developed to send a team of people in to fix the leak, the RSO or his delegate will determine the appropriate PPE based on chemical compatibility and amount and type of chemical exposure including determining the degree of respiratory protection required. For example, a gas leak may only require a full face respirator if it is relatively small and localized, but a major leak, such as a ruptured line, tank or transport carrier liquid valve may require a self-contained breathing apparatus (SCBA) and chemical protective clothing.

The use of a water spray from a fire hose and nozzle may be helpful to prevent gases or vapors from traveling distances or from leaving the Mill site. Prior to the use of water spray, consult the attached material information sheet or MSDS in the MC Plan for the chemical to determine if this is an appropriate control method.

Develop a plan for mitigating the chemical release.

Implement corrective actions.

Initiate cleanup procedures, if necessary. The degree of cleanup will depend on the amount of material spilled, the location of the spill and the feasibility of cleanup.

Determine the cause of the loss of containment (valves, piping, equipment, etc.) after the leak is under control and take corrective actions. Corrective actions may include repair or replacement of a damaged container, piping, equipment, etc.

Solid Material Spills

Follow steps above to initiate the Mill Incident Command System and perform a preliminary analysis of the incident.

Check Mill site windsocks or wind flags for wind direction. Isolate the area and make sure everybody is evacuated from the hazard area.

Be familiar with the hazards of the chemical(s) and the PPE needed, before any actions are taken that could cause a chemical exposure.

Determine whether immediate corrective measures should be taken. Chemicals in a solid form generally do not present an immediate danger to health and/or the environment.

If warranted and if it can be done safely, initiate actions to prevent the solid from being blown into the air. This usually involves covering the chemical with plastic sheeting or other readily available materials. Consult the material information sheet or MSDS(s) in the MC Plan to determine the most appropriate means of handling the chemical(s) and the appropriate PPE to wear.

Initiate cleanup procedures. The degree of cleanup will depend on the amount of material spilled, the location of the spill and the feasibility of cleanup.

Monitoring and Incident Follow-up

Mill Safety Department personnel will monitor for radiation and/or chemical exposure as necessary. Monitoring will be performed such that the safety of the individuals performing the monitoring will not be compromised. Personnel and equipment involved in the emergency response will be monitored for radiation prior to leaving the site. See the Health & Safety Plan for procedures for Release of Equipment to Unrestricted Areas (RH-070); Beta and/or Gamma Exposure Rate Surveys (RH-110); Alpha Beta Gamma Contamination Surveys (RH-120); and Personnel Release Surveys(RH-200).

In the event that injured people are being transported to the hospital, monitoring will be conducted based on the degree of injury. In the event of a life and death situation, monitoring can be conducted on equipment and personnel at the hospital, when feasible. **Under no circumstances will monitoring supersede life saving efforts.**

If determined necessary by safety personnel, monitoring of the atmosphere for radiation or toxic chemicals will be conducted. In the event that sample results indicate that personnel could have been exposed to levels in excess of regulatory limits or individuals become symptomatic of chemical exposure, then these individuals will be referred to the local hospital for evaluation by staff physicians. Exposure of off-site individuals will be evaluated in the same manner.

The Mill Incident Commander will determine when the incident has ended and the plant can

return to normal operations. Personnel will be assigned to notify the appropriate government agencies, local responders and nearby residents that the incident is over. The Mill Incident Commander will take stock of all spill response supplies and arrange for replenishment of the supplies as necessary.

Safety personnel will investigate the cause of the spill or leak and develop corrective measures to prevent future occurrences.

Follow-up reporting of the incident to government agencies will be conducted under direction of the Vice President of Regulatory Affairs.

4.3 Transportation Accidents

General Response Procedures:

- Notification of local law enforcement and State Patrol by carrier
- Notification of Mill Control Room by carrier
- Notification of the off-site agencies, as required (carrier)
- Mill emergency response team preparation and mobilization to the accident scene (if required)
- Report to scene incident commander for information and instructions, if one has been established
- Conduct remediation of incident
- Termination of the incident
- Assessment of doses to response personnel and the public, if any

Notifications and Reporting <u>by Carrier</u> (see front of plan for contact information). This responsibility may be designated to Mill personnel depending on the stipulations of Energy Fuels' contract with the carrier and the specifics of the incident:

Position/Agency	Situation	Time
Local Law Enforcement (911)	Accidents meeting any of the conditions below (1)	Immediately
Colorado State Patrol/ Utah Highway Patrol	Accidents meeting any of the conditions below (1)	Immediately
	Accidents involving radiological materials (even if no damage or injuries)	Immediately
Mill Control Room	All Accidents	Immediately
Colorado Environmental Release and Incident Reporting Line	Accidents involving non-radiological materials and meeting any of the conditions below (1)	Immediately
	Accidents involving release of non-radiological materials above the reportable quantity or any amount in waters of the State (including dry gullies)	Immediately

Position/Agency	Situation	Time
Radiation Incident Reporting Line	Accidents involving fire, breakage, spill, or suspected contamination of radioactive material	Immediately
	Accidents involving release of radiological materials above the reportable quantity or any amount in waters of the State (including dry gullies)	Immediately
	If loss, theft, release, contamination, fire, or explosion involving licensed nuclear material occurs	Immediately
Montrose LEPC	If spill is a release above reportable quantity	Immediately
MSHA Reporting Line	Incident results in death or injury which has a reasonable potential to cause death	Immediately
EPA National Response Center	Accidents meeting any of the conditions below (1)	12 hours
	Accidents involving release of materials above the reportable quantity or any amount in waters of the State (including dry gullies)	24 hours
Colorado Division of Oil and Public Safety (OPS)	Accidents involving spill of petroleum products over 25 gallons, any amount in waters of the State, or not cleaned-up in 24 hours	24 hours

(1) A transportation accident must be reported to local law enforcement (911), Colorado State Patrol/Utah Highway Patrol, Colorado Environmental Release and Incident Reporting Line, and EPA National Response Center if it meets any of the following conditions:
- Fatality or injury requiring hospital treatment
- Evacuation of public longer than 1 hour
- Major artery shut down more than 1 hour
- Flight pattern or routine altered
- Fire, breakage, spill, or suspected contamination of radioactive material

All agencies notified of the incident initially should be notified again when the incident is terminated.

EPA Administrator, CDPHE, U.S. Department of Transportation (USDOT), and/or OPS may require written follow-up report.

Responsible Parties

The trucking companies transporting ore, chemical reagents and fuel to the Mill and yellowcake and vanadium oxide from the Mill to other processing facilities are required under USDOT regulations to have an emergency response plan in place for responding to accidents and cargo spills. As part of its contracting program, Energy Fuels will verify that these plans are in place. In addition, carriers of low-level radioactive shipments (i.e. ore, yellowcake, etc.) may incorporate the Energy Fuels emergency response teams into their emergency management planning for incidents occurring within a reasonable distance from the Mill. **The extent to which Mill personnel will travel to respond to an incident will be included in the contract with the carrier.** The Energy Fuels response teams will have expertise in radiation control and will have the necessary specialized monitoring equipment that is generally not available to most law enforcement agencies, fire departments, and other first responders. The incident response procedure in this section includes the actions to be taken by Mill personnel only in the event of an off-site accident involving low-level radioactive material. Refer to the Spill Response and Medical Emergency procedures in this plan (Sections 4.2 and 4.5, respectively) for guidelines to respond to transportation accidents on the Mill property. Off-site transportation accidents in which radiological materials are not included are best handled by trained local law enforcement and hazmat response teams.

Generally the shipping company has either an in-house emergency response team or has hired a contractor to deal with these types of shipments. This plan provides guidance to Energy Fuels personnel in the event they are asked to respond to a transportation accident. This procedure provides guidance to persons responding to a shipping accident involving ore, yellowcake, or other radioactive material, particularly when the material has leaked or spilled from its container. Leakage or spillage can range in severity from a small leak in a single container to a truckload of spilled material. While this guide addresses the worst-case incident, less severe accidents may require a correspondingly reduced response effort.

The Mill emergency response team will be available to provide assistance and consultation to the carrier if they have been included in the carrier's emergency response plan, as requested. If a non-Mill emergency response team has taken control of the scene prior to the arrival of the Mill emergency response team, then the Mill emergency response team will report to that teams Incident Commander, identify themselves, and offer to provide assistance.

If necessary, Energy Fuels may dispatch a clean-up crew, but only in extreme circumstances. Typically, a clean-up crew from a pre-qualified contractor will be sent to the accident site by the transportation contractor. In this case, the emergency response team will provide guidance, consultation, and assistance as required and requested by the Incident Commander on the scene. However, the RSO will, at a minimum, oversee the cleanup effort and ensure workers are adequately protected, monitored and that any residual radiological contamination is consistent with regulatory requirements and limits specified in Energy Fuels procedures (e.g., Procedure RH 020, Decontamination; Procedure RH 070, Release of Equipment to Unrestricted Areas; and Procedure RH 200, Release Limits).

A spill cover kit is carried by the transport truck with each outgoing shipment of uranium or vanadium concentrates. A typical spill kit may contain the items as listed below:

- Gloves
- Shoe covers
- Coveralls

- 4 NIOSH approved dust respirators with user instructions
- “Caution Radioactive Materials” tape
- 1,000 ft^2 plastic sheeting
- Tent stakes
- Nails
- Hammer
- Knife

Transportation Accident Response Procedure

The carrier should follow the Carrier Response Procedures (Appendix B) in addition to procedures outlined in the carrier’s emergency response plan. The Carrier Response Procedures are supplied to the carrier with the shipping papers. The following procedures are for Mill personnel responding to a transportation accident (In a case that off-site accident involves low-level radioactive material).

Notify the Mill Control Room and RSO of the accident (carrier).

Notify local law enforcement (911) and State Patrol (carrier).

Verify that the carrier will be making the necessary regulatory notifications. If it is the responsibility of Mill personnel to make those notifications, they will be conducted under the direction of the RSO.

Assemble and prepare the Mill emergency response team for responding to the accident. The RSO will determine the level of response required based on the information available and will assemble the emergency response team and appropriate equipment and PPE. Equipment, PPE, and other materials that the team may bring include:

- Copy of Emergency Response Plan
- Survey instrument(s), paper, pens, clipboards, Petri dishes, and contamination swipes
- Protective clothing - coveralls, respirators, shoe covers, and rain suits
- Urine specimen containers
- Camera
- Credit card or other line of credit
- HEPA drum mounted vacuum, if available
- Air sampler
- Phone
- Empty drums for disposal of PPE
- Empty drums for containerization of material, if necessary

If emergency personnel from local authorities have set-up an incident command at the scene, report to the incident commander for instruction and to provide assistance.

Upon reaching the accident, evaluate the area to determine environmental conditions and the physical layout. This evaluation will determine the sequence of events needed to perform the clean-up.

Don protective clothing and set up monitoring systems.

Demarcate the area of the spill with caution tape, rope, signs, etc.

Perform radiation surveys. See the Health & Safety Plan for the Alpha Beta Gamma Contamination Surveys (RH-120) procedure.

Cover any spilled concentrate with plastic sheeting, light water mist, or surfactant depending on wind conditions.

Upright any overturned drums to prevent further spillage, if feasible.

Prepare a clean-up plan. Prior to the commencement of any clean-up activities, approval must be obtained from the Colorado Department of Public Health & the Environment (CDPHE) (or other appropriate state agency). The RSO is to contact CDPHE for review and approval of the cleanup.

If the Mill clean-up crew is notified that they are needed at the site, the crew will bring the following pre-packaged equipment:

- Caution tape and signs
- Extra respirator filters
- Any materials requested by the person on-site that is not readily obtainable at the site
- Air samplers, sampler filter papers, survey meters, urine specimen containers, dosimeters, sample bags, contamination swipes, appropriate check sources, pen, paper, and clipboard
- Roll of plastic sheeting
- Polyethylene rope or equivalent
- Coveralls (2 pair per team member)
- Respirator, air-purifying or helmet style with charger and 2 battery packs (1 for each team member)
- Shoe covers (1 pair per team member)
- Rubber boots (1 pair per team member)
- Rubber gloves (2 pair per team member)
- Rain suit (1 per team member)
- Flashlight and extra batteries (1 per team member)
- Personal clothing (for each team member)

Repackage concentrate, if feasible. Seal the drums. Use plastic sheeting and tape as necessary.

Package all contaminated soils or items. Material may be collected with a drum-mounted HEPA vacuum, if available. Vacuuming may be limited to hard surfaces and a light dusting of material. There are commercial vacuum services available that are capable of vacuuming up most spilled material. Soils will be removed where the concentrate is present on the soil. It is expected that in most cases an inch of soil removal will be sufficient. If necessary, snow or ice will be packaged in plastic lined drums along with contaminated soil. Pavement, concrete or other hard surfaces may have to be cleaned with water or some other form of cleaning agent. Prior to the use of water or cleaning agents, the area must be bermed and surface drains covered or isolated to prevent the spread of contamination. All residues and liquids will be collected and placed in plastic bags or plastic lined drums. Care should be taken to minimize the amount of liquid generated.

Collect confirmatory soil samples from areas where clean-up has occurred plus areas outside the clean-up area that are considered representative of the pre-spill soils. **Confirmation soil**

samples will be collected by Mill personnel regardless if the clean-up was performed by Mill personnel or an independent contractor.

Ship contaminated materials from the spill site in compliance with DOT regulations. Shipping containers must be sealed securely, properly labeled, and have the required shipping papers.

Monitoring and Incident Follow-up

Conduct alpha and beta-gamma surveys to verify that radioactivity levels are below applicable State or Federal guidelines. Decontaminate the site further if necessary. Swipes may be taken and counted for removable contamination. See Alpha Beta Gamma Contamination Surveys (RH-120) procedure in the Mill Health & Safety Plan for release limits.

Monitor personnel prior to leaving the controlled area. See the Personnel Release Survey (RH-200) procedure.

Urine samples may be requested from personnel (including non-Mill personnel) involved in the clean-up operation. See the Bioassay (RH-050) procedure in the Mill Health & Safety Plan for details.

Cleanup will be considered complete only after review and approval by the appropriate authorities.

Document the survey results. The RSO or his designee will evaluate the emergency and file reports in accordance with CDPHE Rules and Regulations Pertaining to Radiation Control, 6 CCR 1007-1, Section 4.51 to 4.54.

4.4 Nuclear Source Containment Loss

General Response Procedures:

- Notification of incident to the Mill Control Room by personnel
- Announcement of incident and location over the Mill PA and hand-held radios and, if warranted, evacuation instructions
- Initiation of the Incident Command System
- Assessment of the incident
- Notification of the off-site agencies, as required
- Mitigation of the incident
- Termination of the incident
- Return of systems to normal
- Assessment of doses to response personnel and the public, if any

Notifications and Reporting (see front of plan for contact information):

Position/Agency	Situation	Time
Mill Incident Commander (Shift Foreman on duty or General Mill Foreman)	All incidents	Immediately
Radiation Safety Officer or Assistant Radiation Safety Officer	All incidents	Immediately
Colorado Radiation Incident Reporting Line	All incidents involving confirmed loss of containment	Immediately
MSHA Reporting Line	Incident results in death or injury which has a reasonable potential to cause death	Immediately

All agencies notified of the incident initially should be notified again when the plant is back in compliance and operating.

CDPHE will require a written follow-up report.

Overview

This procedure provides the response plan for the loss of containment of a nuclear source occurring on the Mill property. The loss of containment of the radioactive source for a nuclear density gauge is unlikely. However, depending on the degree of loss and location, an emergency situation could result due to the strength (concentration) of the radioactive material and the relatively high levels of radiation involved.

Mill personnel will take the following actions:

Notify the Mill Control Room if damage or suspected damage to a nuclear density gauge is discovered. The Mill Incident Commander will proceed to the location of the incident and, if warranted, an announcement of the incident with evacuation instructions will be made to personnel over the Mill PA system and hand-held radios.

Evacuate to the Assembly Area (gravel parking lot south of the Mill facility) if instructed to do so by means of the phone, PA system, hand-held radios, or other evacuation signal.

Isolate the area surrounding the source to prevent inadvertent entry by personnel.

The Mill Control Room will initiate the Incident Command System and the following actions will be taken:

The Mill Control Room will notify the Mill Incident Commander.

The Mill Incident Commander will proceed immediately to the location of the nuclear density gauge and:

- meet with the person that has discovered and reported the incident; and
- evaluate the degree of damage that has occurred.

The Mill Incident Commander will notify the RSO or Assistant RSO and determine the need for agency notifications.

Isolate the area surrounding the source to prevent inadvertent entry by personnel and insure that personnel are not subject to inadvertent exposure, if not done already; maintain maximum practical distance from the source.

The Safety Department or their designee will provide guidance as to the level of radiation exposure and the need to minimize exposure time and maximize distance from the source. With the exception of direct contact with the source for an extended period of time, exposures should not exceed regulatory limits.

The RSO or Assistant RSO will determine the location of the source.

Initiate a Radiation Work Permit (RWP). The Mill Incident Commander will oversee conduct of the RWP with the assistance of the Safety Department.

Retrieve the source and/or correct the containment failure as directed by the requirements of the RWP. Special precaution must be taken due to the potential for high levels of radiation.

Monitoring and Incident Follow-up

Safety Department personnel will document and file the radiation exposure of all individuals involved in the recovery of the nuclear source(s) and the corrective measures taken to correct the containment failure. Surveys will be conducted of the area to insure that leakage of radioactive material from the source has not occurred and/or has ceased and that the source has been secured and contained.

The Mill Incident Commander will determine when the incident has ended and the plant can return to normal operations. He will then assign personnel to notify the appropriate agencies that the incident is over.

Investigate the cause of the loss of containment and develop corrective measures to prevent future occurrences.

The Vice President of Regulatory Affairs will direct preparation of a report to CDPHE in accordance with the requirements of CDPHE 6 CCR 1007-1, 4.5.3 and no later than within 30

days of the incident detailing the nature of the incident, the individuals involved, and the results of incident monitoring including an evaluation of the amount of radiation exposure received by any of the individuals involved.

4.5 Medical Emergency

General Response Procedures:

- Notification of medical emergency to the Mill Control Room by personnel
- Initiation of the Incident Command System
- If warranted, call 911.
- Provide First Aid and/or CPR to the injured personnel
- Conduct contamination surveys on the injured if the injuries are not life threatening
- Conduct surveys and decontamination of emergency response equipment
- Assess exposures to personnel and outside emergency response personnel
- Follow-up reporting of the incident

Notifications and Reporting (see front of plan for contact information):

Position/Agency	Situation	Time
Mill Incident Commander (Shift Foreman on duty or General Mill Foreman)	All medical emergencies	Immediately
Radiation Safety Officer or Assistant Radiation Safety Officer	All medical emergencies located within the license boundary	Immediately
Local Fire Department (911)	If off-site assistance is required	Immediately
Colorado Radiation Incident Reporting Line	If the medical emergency involves radiological exposure	Immediately
MSHA Reporting Line	Incident results in death or injury which has a reasonable potential to cause death	Immediately

CDPHE may require a written follow-up report.

Overview

This procedure provides a plan for responding to medical emergencies occurring on the Mill property. Mill workers will attempt to provide first aid to injured workers within the scope of their training and the medical supplies available. Because medical emergencies can vary from minor to life threatening injuries or illness, the degree of response by Mill personnel will vary. If the injuries are severe, it may be necessary to contact off-site emergency responders with more advanced training, equipment and supplies that can mobilize to the site by ambulance or helicopter. Care must be taken at all times to minimize contamination of Mill workers, emergency personnel and emergency treatment facilities from hazardous materials and radiation during medical emergencies. **Under no circumstances will the concern for contamination supersede life saving efforts.** Incident response procedures for other incidents that may cause or occur concurrently with a medical emergency should be followed as well as this response procedure.

Mill personnel will take the following actions:

Notify the Mill Control Room of the incident. Give the specifics of the medical emergency including the nature of the medical emergency, the location of the injured personnel and any medical treatment that has been given. The Mill Incident Commander will proceed to the location.

The first person on the scene of a medical emergency will attempt to assess the nature and seriousness of the injury or illness, within the limits of their training. Depending on the training of the first person on the scene, initial attempts should be made to assist with breathing, the control of bleeding, or starting CPR. First Aid kits are available in the Safety Department office, control room, Truck Shop, laboratory, Warehouse, and change house (which contains the First Aid Station). The first responder will provide medical assistance such that the responder does not put himself at undue risk from the accident hazards. Use extreme caution where the injured person may be exposed to or in contact with electrical hazards.

If the injured/ill person is in a location where they may receive further harm or injury and the first person on the scene can move the injured/ill person without doing serious additional harm or injury, the first person on the scene should attempt to move the injured/ill person to a safer location. If the injured person is tangled in moving equipment and you are trained to shut off the equipment, do so immediately, otherwise call the Mill Foreman or the control room for assistance.

Follow instruction as provided by the Mill Incident Commander upon arrival.

The Mill Control Room will initiate the Incident Command System and the following actions will be taken:

Notify the Mill Incident Commander.

The Mill Incident Commander will proceed immediately to the location of the incident and will:

- meet with the person that has reported the incident and the injured person(s);
- evaluate the extent of each injury;
- determine if the injury(s) can be treated on-site or will require off-site ambulance or medevac response (medical helicopter evacuation);
- assume command of the emergency until the arrival of off-site support, if necessary; and
- continue to assess the health of the injured person.

The guard at the main gate will be notified to open and close the gate to allow in off-site emergency responders and to direct and/or escort them to the injured person(s). If a helicopter evacuation is needed, then the helipad should be manned and lighted if necessary to aid in the landing.

Depending on the nature of the work the individual has been performing or the area the individual has been working in, a radiation survey of the injured personnel may be required prior to leaving the area. See the Personnel Release Surveys (RH-200) procedure in the Health & Safety Plan. If there is any doubt as to the potential for contamination, then a survey should be conducted. Under no circumstance will the need for a survey supersede life saving efforts.

If an injured/ill person is to be transported to the hospital and the injured personnel may be radiologically contaminated, the Mill Incident Commander will direct Safety Department

personnel to proceed to the hospital to aid in contamination control, surveying, and documentation. Every effort should be made to minimize the area of a clinic or hospital involved in the care of potentially contaminated personnel. The Safety Department representative must insure that the number of people involved in the care and treatment is kept to a minimum and that the area of treatment is isolated or controlled as much as possible.

The Mill Incident Commander will designate personnel to notify the CDPHE of any medical incident requiring off-site hospitalization.

If the injury is minor and can be treated on-site, assist the injured person to the on-site First Aid station.

All persons involved with medical treatment or handling of the patient will use appropriate universal precautions and PPE (gloves, safety glasses, masks, etc.) available in the first aid kits on the Mill site to prevent the spread of diseases or getting body fluids on themselves.

Monitoring and Incident Follow-up

In the event that injured people are being transported to the hospital, monitoring will be conducted based on the degree of injury. In the event of a life threatening situation, monitoring can be conducted on equipment and personnel at the hospital, when feasible. **Under no circumstances will monitoring supersede life saving efforts.**

Safety Department personnel will document and file reports for exposure to hazardous materials or radiation of the injured person(s) and individuals involved in their removal and transport. Surveys will be conducted of the equipment, personnel, and areas involved in the treatment of an injured or ill person. See Alpha Beta Gamma Contamination Surveys (RH-120) procedures in the Health & Safety Plan for additional details on conducting the radiation surveys. The RSO or his designee will evaluate the emergency and file reports in accordance with CDPHE Rules and Regulations Pertaining to Radiation Control.

If an individual, a piece of equipment, or area is found to be contaminated, an immediate decontamination effort will be initiated. The decontamination will be directed by the RSO in consultation with the emergency medical care responders. A soap and water wash followed by brushing with a soft brush is usually sufficient to decontaminate people and medical equipment. Decontamination will continue until surveys indicate the levels of contamination have been reduced to levels that are ALARA or to the levels specified in the Release of Equipment to Unrestricted Areas (RH 070) procedure in the Health & Safety Plan.

The RSO will generate a written follow-up report within 30 days of the incident detailing the nature of the incident, the individuals involved, and the results of incident monitoring including an evaluation of the amount of radiation exposure received by the individuals involved.

4.6 Weather Emergency

General Response Procedures:

- Announcement of the weather alert over the Mill PA system and radios
- Advise personnel to take precautions
- Termination of the weather emergency and corresponding announcement over the Mill PA system and radios
- Evaluation of damage to Mill after the weather event has passed
- Mitigation of damage, if necessary
- Assessment of doses to response personnel and the public, if any

Notifications and Reporting (see front of plan for contact information):

Position/Agency	Situation	Time
Mill Incident Commander (Shift Foreman on duty or General Mill Foreman)	All weather emergencies	Immediately
Radiation Safety Officer or Assistant Radiation Safety Officer	All weather emergencies that effect safety or radiation control systems	Immediately
MSHA Reporting Line	Incident results in death or injury which has a reasonable potential to cause death	Immediately

Overview

This procedure provides the response procedure to severe weather. Severe weather can happen at any time at or near the Mill. The National Weather Service can make declarations of severe weather in the form of watches or warnings. A watch is a situation in which meteorological conditions are such that a severe weather condition is possible. A warning is a situation in which severe weather is imminent.

Mill personnel will take the following actions:

Follow instructions as received by means of the phone, PA system, or hand-held radios. These may include staying indoors or assembling in specific areas of the building you are in.

The Mill Control Room will initiate the Incident Command System and the following actions will be taken:

The National Weather Service or the Montrose County Emergency Management Coordinator will make a declaration of severe weather in the form of watches or warnings.

When the threat of severe weather is detected by a change of weather conditions, heard as a broadcast by the media, the weather service, or by a contact from local emergency management representatives, an announcement will be made over the Mill PA system or using hand-held radios. Give the specifics of the severe weather and advise personnel of what actions to take.

Potential responses to severe weather emergencies or conditions follow:

- Severe Rain – Stay inside of buildings or other covered areas until rain has subsided. If it is necessary to go outside during the storm, do so with caution.

- Lightning – Stay inside of buildings away from doors and windows. Stay away from items that could act like lightning rods. Remain inside until the storm has subsided.

- Flooding – Move into Mill buildings until the flooding has subsided. Stay away from drainages and do not attempt to cross-flowing water.

- Hail – If a hailstorm occurs, seek shelter inside of buildings or covered areas until the storm subsides.

- Snow – Snow at the Mill is not an uncommon occurrence. During periods of heavy snow or large accumulation of snow, personnel may be directed to stay indoors or perform outdoor tasks with caution.

- High Winds – During high wind conditions, personnel should seek shelter in Mill buildings and only perform work outside with caution. Conditions where high winds have transported material across or off the site will be evaluated by the RSO for potential corrective actions.

- Tornado – Tornado weather conditions will produce a “watch” or a “warning” situation. When a “watch” is issued, personnel should be informed of the situation by the various foremen at the Mill. When a “warning” is issued an announcement should be made over the Mill public address system and personnel should seek shelter in the most protected area of a building.

Certain severe weather conditions (i.e. flooding) may cause failure of or damage to Mill operational or safety systems. Following severe weather conditions, the Plant Manager will direct Mill personnel to physically inspect the Mill site for damage caused by severe weather, and invoke other sections of this plan as required to safely mitigate the damage. The Mill personnel inspecting the site may include Safety Department and/or security staff.

4.7 Wildfires

General Response Procedures:

- Initial assessment by Mill personnel at the scene
- Notification of wildfire to the Mill Control Room by personnel
- Announcement of wildfire and location over the Mill PA and hand-held radios
- Advise personnel to take precautions
- Initiation of the Incident Command System
- Assessment of the wildfire
- Notification of the fire department or BLM for assistance, if necessary
- Incident response to extinguish or control the fire
- Termination of the incident

Notifications and Reporting (see front of plan for contact information):

Position/Agency	Situation	Time
Mill Incident Commander (Shift Foreman on duty or General Mill Foreman)	All wildfires	Immediately
Radiation Safety Officer or Assistant Radiation Safety Officer	All wildfires located within the license boundary	Immediately
Local Fire Department (911) and/or BLM wildfire reporting line	If off-site assistance is required	Immediately
MSHA Reporting Line	Incident results in death or injury which has a reasonable potential to cause death	Immediately

Wildfires breaching the property boundary should be treated as a fire/explosion and the measures outlined in Section 4.1 should be employed.

All agencies notified of the incident initially should be notified again when the emergency has been terminated and the plant is back in compliance and operating.

MSHA may require a written follow-up report.

Mill personnel will take the following actions:

Notify the Mill Control Room of the wildfire. The Mill Incident Commander will go to the location of the wildfire and, if warranted, an announcement with instructions will be made to personnel over the Mill PA system and hand-held radios.

Attempt to control and/or extinguish incipient fires. An “incipient fire” is a fire in the initial or beginning stage and which can be controlled or extinguished with portable fire extinguishers or small hose systems without the need for protective clothing and breathing apparatus. Efforts to control and/or extinguish an “incipient fire” using a portable fire extinguisher will be based on your personal training and only attempted if:

- you can identify the “class of fire” burning (Class A, B, C, D, or K);
  - Class A: Ordinary Combustibles
  - Class B: Flammable liquids and gases
  - Class C: Electrical Equipment
  - Class D: Combustible Metals
  - Class K: Cooking Oils and Fats
- there is a portable fire extinguisher in the immediate area, which is “rated” for the class of fire that is burning;
- your life and safety is not in danger and your evacuation path is not blocked by the smoke and heat from the fire (If your life or safety is in danger or the evacuation path is impacted, then evacuate the area immediately to the Assembly Area);
- you have been trained to use the portable fire extinguisher and extinguish fires; and
- the fire is still in the incipient stage or can be defined as “incipient”.

Follow instruction as provided by the Mill Incident Commander upon arrival.

The Mill Control Room will initiate the Incident Command System and the following actions will be taken:

Notify the Mill Incident Commander.

The Mill Incident Commander will proceed immediately to the location of the wildfire and will:

- meet with the person that has discovered and reported the wildfire;
- evaluate the growth and spread of the wildfire, the potential to breach the restricted area and become a fire/explosion;
- determine if off-site support from the fire department or BLM is necessary;
- evaluate whether or not evacuation of any Mill site buildings will be required;
- determine measures that can be taken to prevent an off-site wildfire from breaching the restricted boundary;
- assume command of the emergency until the arrival of the fire department or BLM, if necessary; and
- continue to assess the growth and spread of the fire and contact off-site support as necessary.

If warranted, the local fire department or the BLM wildfire reporting line will be contacted. The operator will request the following information:

- the wildfire location and size
- any injuries, and
- any initial actions that have already taken place.

Off-site wildfires will be controlled primarily by the local fire department and/or BLM. Mill emergency response personnel may provide assistance upon request as long as the capacity to control the fire if it reaches the license boundary is not compromised. The first priority of Mill emergency response personnel will be to protect the Mill facilities on the Mill property.

If support of the fire department and/or BLM is necessary, the Mill Incident Commander will instruct the Security Guard on duty to allow entrance of off-site emergency responders and arrange for an escort to take them to the scene of the incident. Upon arrival, the Mill Incident Commander will turn over command of the wildfire emergency to the senior fire department officer and will provide whatever assistance possible.

The Mill Incident Commander will assign personnel to make the necessary off-site agency notifications as required by the specifics of the incident outlined above.

The Mill Incident Commander will assign personnel to begin calling, by phone or hand-held radio, management personnel and other personnel as necessary to notify them of the wildfire or to request that they return to the Mill to assist with the incident.

If water from fire hydrants is going to be used for the wildfire emergency, the Mill Incident Commander will assign personnel to monitor the operation and fuel level of the diesel driven fire pump and the level of the water in the tank supplying water to fight the fire. Sufficient water will be reserved to protect the Mill buildings and structures.

After a fire is extinguished, the Mill Incident Commander will ensure that all fire suppression equipment and systems are recharged, replaced, or returned to normal operation or status as soon as practical.

Monitoring and Incident Follow-up

Because wildfires only include those fires that are outside of the restricted area, there is very little likelihood of chemical or radiological exposure associated with a wildfire.

In the event that monitoring results indicate that personnel could have been exposed to levels in excess of regulatory limits or if individuals exhibit symptoms of chemical exposure, then these individuals will be referred to the local hospital for evaluation by staff physicians. Exposure of off-site individuals will be evaluated in the same manner.

The Mill Incident Commander will determine when the incident has ended and the plant can return to normal operations. He will then assign personnel to notify the appropriate agencies that the incident is over.

Safety Department personnel will investigate the cause of the wildfire and develop corrective measures to prevent future occurrences if the wildfire was caused by Mill operations.

Follow-up reporting of the incident to regulatory agencies will be conducted under the direction of the Vice President of Regulatory Affairs.

5.0 Protective Actions

5.1 On-Site Protective Actions

5.1.1 Evacuation and Accountability

Evacuations may be required in response to incidents involving hazardous materials, fire/explosions, wildfires, equipment failure (such as a storage tank), bomb threats or unusual radiation levels. Individual personnel, management team members, the Mill Incident Commander or the fire department may initiate a building or site evacuation.

An announcement of an evacuation will be made over the Mill PA system. If warranted, off-site emergency responders will be notified by calling 911. Notification may also be made using the phone system or hand-held radios.

Assembly Areas

Upon hearing the evacuation announcement, personnel, contractors and visitors will immediately leave the building and proceed to the Primary or Alternate Assembly Area, as directed (See Figure 3). Evacuation announcements will direct evacuees to the Alternate Assembly area if safety at the Primary Assembly Area is compromised due to the incident or any other reason. The Assembly Area locations are:

<u>Mill Facility Assembly Areas</u>

- Primary - Personnel parking lot in front of (south of) the change house. Access from facility buildings is available through change house.
- Alternate – West of the Truck Shop on west side of Mill facility. Access is available through the Truck Shop.

<u>Administration Building Assembly Areas</u>

- Primary – Front parking area southwest of the administration building. Access from building through nearest safe exit.
- Alternate – Side parking area north of the administration building. Access from building through nearest safe exit.

Mill personnel, visitors, and contractors should not leave the Mill site until they are directed to unless they are in imminent danger.

Evacuation Routes

The Mill facility is large and various evacuation routes are available. Primary evacuation routes or exits may be blocked by fire, smoke, or leaks and spills involving hazardous materials. Because routes and exits can be blocked, people should be familiar with multiple exit pathways out of Mill buildings. Evacuees should choose the most direct and safest route, which will depend on their location and the location and severity of the incident. Upon exiting a building during a chemical (hazardous material) or fire/explosion emergency, people should check windsocks located on the Mill site for wind direction and proceed 90 degrees away from the

wind direction or upwind to be safe from chemical vapors or smoke. After exiting the Mill facility, evacuees will proceed to the designated Assembly Area. The assembly areas and evacuation routes are shown on Figure 3 and on the Piñon Ridge Mill Evacuation Plan located at various locations throughout the Mill.

The evacuation exits from the Mill facility include:

- South through the Change House/Laboratory Building;
- West through the Truck Shop;
- West through the Fueling Station emergency exit gate;
- North to the tailings cell area and then west through the northwest emergency exit gate;
- North to the tailings cell area and then east through the Truck Wash emergency exit gate (northeast corner of ore pad); and
- East through the exit gate at the Truck Wash emergency exit gate.

Accountability

The Mill access gate requires the use of an issued gate card (key). Each card is unique to each employee and when used to enter the site, logs each employee into the system. This information can be accessed and serve as a list of personnel on-site.

Visitors will sign in at the Guard Gate and/or Administration Building when entering the Mill site and will be given a visitor's badge and escorted. Upon leaving the Mill site visitors will deposit their visitor's badge with the Guard.

Contractors will be issued a visitor's badge and may be issued a contractor's badge and/or a dosimeter depending on the duration of their site visit, the nature of their work, and the level of training they have received. The visitor's/contractor's badge is used for access to various areas of the site.

Mill operations, utility and maintenance supervisors will account for their personnel, contractors, and visitors at the designated Assembly Area. The Plant Manager or his designee will account for office staff, safety staff, and laboratory staff.

During any building or Mill site evacuation, the security guard will (on their own or at the direction of the Mill Incident Commander, Mill management or the fire department) account for personnel on the Mill site by using sign-in/out records, time cards, radiation exposure badges, visitor sign in/out records or by contacting supervisors for personnel, contractors and visitors. This visitor's/ contractor's badge will serve as an accountability mechanism for contractors and visitors. The security guard will then notify the person requesting the accountability check and the Mill Incident Commander of the results.

If someone is missing, the Mill Incident Commander will assign someone to begin a search of buildings and the Mill site. If the fire department is on-site, a fire department rescuer with a Mill personnel escort, if possible, can begin a search of buildings and the Mill site.

Injured evacuees will receive immediate treatment in accordance with the Medical Emergency Response procedure outlined in Section 4.5.

Mill Safety Department personnel will monitor for radiation and/or chemical exposure of evacuees as necessary. Monitoring will be performed such that the safety of the individuals performing the monitoring will not be compromised. Personnel and equipment involved in the

emergency response will be monitored for radiation prior to leaving the site. See the Health & Safety Plan for procedures for Release of Equipment to Unrestricted Areas (RH-070); Beta and/or Gamma Exposure Rate Surveys (RH-110); Alpha Beta Gamma Contamination Surveys (RH-120); and Personnel Release Surveys(RH-200).

5.1.2 PPE and Supplies

Respirators and PPE are available in designated areas of the Mill facility based on the hazards associate with the materials stored or used in that portion of the facility. Some areas of the Mill facility may not require respirators and/or only minimal PPE. The specific location and means of obtaining emergency use respirators and PPE will be communicated to Mill personnel during job training. Inventories and adequacy of emergency respirators and PPE will be evaluated with annual inspections.

Alarm pull handles and phones are available throughout the Mill for communicating incidents to the Mill control room. In addition, supervisors and Mill management personnel will have hand-held radios.

5.1.3 Contamination Control

During an incident, only emergency response personnel will be allowed in an area of potential contamination or danger. Prior to termination of the incident, the affected area(s) will be surveyed for radiological and chemical contamination, as the RSO or Assistant RSO deems necessary. The survey of the area will be conducted in accordance with the Beta and/or Gamma Exposure Rate Surveys (RH-110) and Alpha Beta Gamma Contamination Surveys (RH-120) procedures in the Mill Health & Safety Plan. Mill personnel will not be allowed to return to the area until termination of the incident.

5.2 Off-site Protective Actions

In the event of a site area emergency, where off-site impacts are probable, imminent or realized, the Mill Incident Commander will make protective action recommendations to off-site emergency responders and planners. Although unlikely, the necessity for off-site protective actions is dependent on the incident and weather and may include public evacuation (including distances and directions), closure of the highway, access restriction to off-site property, or other actions as recommended by the Mill Incident Commander, RSO, or off-site emergency responders. Nearby residents may be notified by reverse 911, administered by the Montrose County Sheriff's Department, or by direct communication from Mill personnel, if necessary.

5.3 Exposure Control Program for Emergency Responders

5.3.1 Radiation Protection Program

Emergency response to incidents may be required for the safety of Mill personnel, safety of the off-site public, protection of the environment, and protection of valuable property. In some cases, emergency response may result in above normal exposures to emergency response personnel. Only the RSO and Assistant RSO are allowed to authorize exposures to Mill personnel above administrative control limits. The procedures for permitting of emergency doses are:

- Evaluation of incident – includes monitoring to determine environmental radiological levels
- Estimation of exposure – includes calculation of expected radiological and chemical exposure during the response based on environmental radiation and toxic chemical levels and the emergency response actions that need to be taken (see Radiological Dose Calculation (RH-300) procedure in the Mill Health & Safety Plan)
- Evaluation of personnel record – includes review of the personnel exposure and health records
- Issuance of an emergency Radiation Work Permit (RWP) (see Radiation Work Permits (RH-060) procedure in the Mill Health & Safety Plan)

5.3.2 Exposure Guidelines

In accordance with the EPA Manual of Protective Action Guides (EPA 1991), the following table indicates the permissible doses in an emergency situation and conditions that apply.

Table 7
Guidance on Dose Limits for Workers Performing Emergency Services

Dose Limit[a] (rem)	Activity	Conditions
5	All Incidents	None
10	Protection of Valuable Property	Lower dose not practicable
25	Life Saving Efforts or Protection of Large Populations	Lower dose not practicable
>25	Life Saving Efforts or Protection of Large Populations	Only on a voluntary basis to persons fully aware of the risks involved

a Sum of external effective dose equivalent and committed effective dose equivalent to non-pregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident.

Derived from Table 2-2 of the EPA Manual of Protective Action Guides

It is very unlikely that exposure to Mill personnel would exceed 25 rem, even in an emergency situation, given the radioactivity levels of the materials at the Mill. However, Mill personnel that may receive a dose of 25 rem or more on a voluntary basis in order to save lives or protect large populations must be fully aware of the risks involved. If Mill personnel voluntarily performs actions that may lead to an exposure of 25 rem or more, they must be familiar with the information on the following tables at a minimum prior to performing those actions.

Table 8
Health Effects Associated with Whole-Body Absorbed Doses Received Within a Few Hours[a]

Whole Body Absorbed Dose (rad)	Early Fatalities[b] (percent)	Whole Body Absorbed Dose (rad)	Prodromal Effects[c] (percent affected)
140	5	50	2
200	15	100	15
300	50	150	50
400	85	200	85
460	95	250	98

a Risks will be lower for protracted exposure periods
b Supportive medical treatment may increase the dose at which the frequencies occur by approximately 50 percent
c Forewarning symptoms of more serious health effects associated with large doses of radiation
Derived from Table 2-3 of the EPA Manual of Protective Action Guides

Table 9
Approximate Cancer Risk to Average Individuals from 25 Rem Effective Dose Equivalent Delivered Promptly

Age at Exposure (years)	Appropriate Risk of Premature Death (deaths per 1,000 persons exposed)	Average Years of Life Lost if Premature Death Occurs (years)
20 to 30	9.1	24
30 to 40	7.2	19
40 to 50	5.3	15
50 to 60	3.5	11

5.3.3 Monitoring

Personal radiation monitoring of Mill personnel and off-site emergency responders will be performed using dosimeters. Refer to the Personal Radiation Monitors (RH-210) procedure in the Health & Safety Plan. Mill personnel have assigned dosimeters that they use in everyday operations, which will also continue to be worn during emergency situations. Off-site emergency response personnel will be assigned visitor dosimeters upon arrival at the site. In addition, urine and fecal bioassays may collected from emergency response personnel (Mill and

off-site) following the incident as deemed necessary by the RSO. Refer to the Bioassay (RH-050) procedure in the Health & Safety Plan.

The RSO will review area air monitoring data along with personnel incident response records (duration and location of response actions) to estimate the inhalation exposure of personnel to radiation and toxic chemicals. Refer to the Occupational General Air Particulate Survey (RH-130) and Occupational Breathing Zone Survey (RH-150) procedures in the Health & Safety Plan.

All personnel and equipment involved in emergency response will be decontaminated and surveyed. Decontamination measures will vary depending on the situation and are outlined in the Decontamination (RH-020) procedure. Personnel surveys will be conducted in accordance with the Personnel Release Surveys (RH-200) procedure. Contaminated items to be released from the Mill site will be done so in accordance with the Release of Equipment to Unrestricted Areas (RH-070) procedure. Contaminated items (PPE and waste) that cannot be cleaned and materials used for decontamination will be sealed in drums or plastic bags in accordance with applicable regulations. The wastes will be disposed of in accordance with applicable regulations based on the nature of the material and levels of contamination.

5.4 Medical Treatment

An on-site First Aid Station is located in the change house. In addition, First Aid kits are located in the Safety Department office, control room, shop, laboratory, warehouse, and administration building. The supplies available at the First Aid Station and kits allow for treatment of minor injuries and initial treatment and stabilization of more serious injuries.

The Basin Clinic in Naturita has the capability to handle minor and some serious injuries. They include treatment for injuries such as sprains, strains, minor burns, and broken bones. The Basin Clinic is also equipped to stabilize injured personnel with more serious injuries for transport to a hospital.

Serious injuries, such as serious burns or chemical exposure, may require care at a hospital. The two closest hospitals are Montrose Memorial Hospital in Montrose, CO and Saint Mary's Hospital in Grand Junction, CO. These facilities have capabilities for short-term treatment of any injuries that may occur at the Mill during an incident and long-term care for most injuries that may occur. In addition, they have sufficient beds available for incidents that involve multiple injuries.

If an injured person is found to be contaminated, an immediate decontamination effort will be initiated, if possible without endangering the life or health of the injured person. If an injured person is radiologically contaminated and must be transported to the clinic or hospital, the Mill Incident Commander will direct Safety Department personnel to proceed to the clinic or hospital to aid in contamination control, surveying, and documentation. Every effort should be made to minimize the area of a clinic or hospital involved in the care of potentially contaminated personnel. The Safety Department representative must insure that the number of people involved in the care and treatment is kept to a minimum and that the area of treatment is isolated or controlled as much as possible.

Refer to Section 4.5 for specific actions to be taken in a Medical Emergency.

5.5 Medical Transportation

The Mill has an ambulance to transport injured personnel to the Basin Clinic or a hospital. In addition, two ambulances are available at both the Paradox Fire Department and the Nucla/Naturita Fire Department. If injuries occur requiring care not available at the Mill or the Basin Clinic, injured personnel would be transported by ambulance or medevac helicopter to Montrose Memorial Hospital or Saint Mary's Hospital. Both the Mill site and the Basin Clinic have helipads to facilitate a medevac response. If a medevac transport is required and the injured personnel are still located at the Mill site, the medevac transport will be arranged to occur directly from the Mill helipad to avoid an unnecessary and potentially detrimental transport to the Basin Clinic in Naturita.

6.0 Emergency Response Equipment and Facilities

6.1 Command Center

During an incident, the primary command center location is the Mill Facility control room, located in area 100 of the Mill facility. The control room has access to all alarm systems and process control systems making it the optimal location to monitor and manage an incident. The control room will only be evacuated in situations where imminent danger resulting from an incident is present.

In the event that the control room must be evacuated, the alternate location for the command center is the training room in the Administration Building. The primary command center will only be evacuated in a situation where there is imminent danger present such as a fire or chemical release that may engulf the control room.

Direction will be given over the PA system, phone, and/or hand-held radios as to which command center location emergency responders must report to. The Administration Building is sufficiently distant from the Mill facility that a single incident is unlikely to make both locations unusable, but close enough that it will not unnecessarily hamper communications or emergency response. The computer network will allow any computer station on the network, including terminals in the Administration Building, to access the Mill alarm and process control systems with appropriate access codes.

Sufficient communication and network access is available at both command center locations to allow for dispatch of all emergency response personnel, both on-site and off-site.

6.2 Communications Equipment

Primary communications on-site during an emergency are conducted with hand-held radios and the PA system. Back-up on-site systems are the telephone and cellular phone systems. For off-site communications, the primary system is the telephone system and the back-up system is the cellular phone system. Because cellular phones are used periodically during normal operations, testing of them is not required on a periodic basis.

6.3 On-Site Medical Facilities

An on-site First Aid station is located in the change house. Contents of the on-site First Aid station include supplies for treatment of most minor injuries such as sprains, strains, and minor burns. The First Aid station is also equipped to stabilize injured personnel with more serious injuries for transport to the Basin Clinic or a hospital by medevac helicopter or ambulance.

An ambulance is located on-site at the Administration Building and contains similar First Aid equipment for treating and stabilization of injured personnel. A helipad is also located on site for the transportation of injured personnel to the nearest hospital (either Montrose Memorial Hospital in Montrose, CO or St. Mary's Hospital in Grand Junction, CO).

6.4 Emergency Monitoring Equipment, Instrumentation and Supplies

The Mill stocks an adequate supply of emergency monitoring equipment, instrumentation, and supplies to respond to incidents that may occur. Monitoring of the atmosphere and radiation in an emergency situation is conducted by the RSTs under direction of the RSO or Assistant RSO. This equipment is primarily distributed between the Safety Department offices in both the Mill the Administration Building and the Safety Equipment Rooms in the Change House and Laboratory Building. The following emergency monitoring equipment and supplies are available for use in the event of an incident:

- Sodium iodide (NaI) detectors
- Geiger Müller (GM) detectors
- Pancake probes
- Zinc sulfide alpha scintillators
- Scalers
- Full-face, half-face, and powered-air respirators
- SCBAs (Self-contained Breathing Apparatus)
- General air samplers
- Breathing Zone (BZ) samplers
- Colorimetric gas tube samplers
- Gas detectors
- Fire Extinguishers
- Automated External Defibrillator (AED)
- First Aid kits
- Incident Command emergency response kits contain:
    - Check lists of emergency responses
    - Check lists of individual responsibilities
    - Material Containment Plan
    - Spill Prevention Control and Countermeasure Plan
    - Material Safety Data Sheets
    - Copy of this procedure
    - Emergency Response Guidebook
    - Incident Command Vests
    - Clipboards, Paper, writing utensils
    - Emergency Telephone List

Inspections of all emergency response equipment will be conducted at least quarterly. Equipment found not to be in operating condition will have a work order written to initiate immediate repair or replacement. Missing equipment will be replaced immediately (if available on-site). Equipment not readily available on-site will be acquired as soon as practicable.

All inspections will be documented on the appropriate report form and submitted to the RSO or Assistant RSO for review. Inspection forms will be maintained in the filing system.

In addition to the equipment that may used at the scene of an incident to evaluate exposures, there are three on-site and two off-site air monitoring stations including two on-site meteorological stations. The equipment at each site is listed below:

Site 1 – North Site: This site is located near the northern boundary of the Mill site.

- 10-meter meteorological tower
  - wind speed, wind direction, and sigma theta (10-meter);
  - vertical wind speed (10-meter);
  - temperature (2-meter);
  - relative humidity (2-meter);
  - delta temperature (2-meter and 10-meter);
  - barometric pressure (2-meter);
  - solar radiation (2-meter);
  - precipitation (ground level); and
  - evaporation (ground level).
- PM_{10} Sampler (2-meter)
- TSP (Total Suspended Particulate) Sampler (2-meter)

Site 2 – East Site: This site is located near the southeastern boundary of the Mill site.

- 30-meter meteorological tower
  - wind speed, wind direction, and sigma theta (30-meter);
  - vertical wind speed (30-meter);
  - temperature (30-meter);
  - relative humidity (2-meter);
  - delta temperature (2-meter and 30-meter);
  - barometric pressure (2-meter); and
  - solar radiation (2-meter).
- PM_{10} Sampler (2-meter)
- TSP Sampler (2-meter)

Site 3 – West Site: This site is located near the western boundary of the Mill site.

- TSP Sampler (2-meter)

Site 4 – Cooper Site (Upwind): This location is approximately 3 miles upwind (northwest) of the Mill facility.

- TSP Sampler (2-meter)

Site 5 – Carver Site (Downwind Resident): This location is approximately 3.5 miles downwind (southeast) of the Mill facility, and was chosen as the site of the nearest residence.

- TSP Sampler (2-meter)

Meteorological measurements can be read at the base of each tower and downloaded. This information can then be used to estimate potential exposure to on-site and off-site areas. The PM_{10} samplers run one of every three days and can be analyzed for particulates less than 10 microns in size. The total suspended particulate (TSP) samplers run continuously and can be collected and analyzed for a variety of radiological parameters following an event in which potential contamination is suspected.

6.5 Means for Limiting Releases

Releases of pollutants as a result of an incident at the Mill could be caused by fires/explosions, chemical spills, or loss of nuclear source containment. Several technologies and practices are employed to limit releases as much as practical.

6.5.1 Fire/Explosion Protection

Mill personnel are trained in fire prevention practices upon employment to reduce the likelihood of a fire or explosion at the Mill. These practices include good housekeeping, recognizing potentially hazardous situations, use and storage of flammable materials and fighting small fires with fire extinguishers. Mill emergency response personnel are trained in advanced firefighting techniques including use of proper firefighting PPE and equipment (e.g. fire hydrants, hoses).

Fire extinguishers, smoke detectors and pull alarms are located in the buildings throughout the Mill site. In addition, automatic sprinkler systems are located in the Change House/Laboratory and Administration Buildings. The Solvent Extraction (SX) Building is an area of particular concern in regards to fire/explosion protection due to the storage, handling and usage of flammable liquids in this building. The SX Building is equipped with a water mist system with UV/IR fire detection specifically designed for the equipment in the building. In addition, the equipment and instrumentation in the SX Building is fire-resistant.

The Mill facility is equipped with a fire hydrant system comprising of hydrants located outside of the buildings, no more than 250 feet apart, and within 100 feet any part of a building or fire hazard. Portable fire hose carts that are equipped with not less than 150 feet of 2 ½ inch fire hose and two 100 foot lengths of 1 ½ inch fire hose and a 2 ½ inch x 1 ½ inch gated wye are available at the Mill for use with the fire hydrants. The fire hydrants are supplied by the 320,000-gallon raw water tank and a diesel firewater pump.

The various fire protection systems are visually inspected daily and are tested annually at a minimum to ensure that they are working properly. Some components of the system are tested on a more frequent basis. Examples include starting of the firewater pumps and checks of fuel levels weekly and monthly inspections of the fire extinguishers.

6.5.2 Chemical Spill Prevention

Mill personnel are trained in the prevention of and response to chemical spills. This training includes recognizing the degree of a chemical spill, prevention and control of Category I spills, and familiarization with the MC and SPCC Plans.

Various engineering controls are in place in the Mill process system to prevent chemical spills. In the event that a portion of the process is shutdown manually or automatically, the control system will sequentially shut-down upstream and downstream equipment as necessary to facilitate and safe and efficient shout-down of the system.

Several tanks at critical points through the process include additional capacity to contain surges in the process and provide a buffer in the event of a shutdown of downstream equipment due to failure, cleaning, inspection or maintenance. Critical tanks have high, critical high, low and critical low level alarms. The high and low alarms alert the control room to an impending issue with the tank capacity. The critical high and low alarms initiate an automatic sequential shutdown of appropriate portions of the process to prevent a chemical spill.

All reagent tanks and process chemicals have secondary containment that is capable of holding the largest tank in the containment plus a minimum of 10 percent more volume. In addition, secondary containment is provided around all piping, trenches, and sumps. Fire hydrants and

high-pressure hoses are located through the Mill facility to aid in suppressing vapor and solid material releases to the atmosphere.

6.5.3 Nuclear Source Containment

The loss of containment of the radioactive source for a nuclear density gauge is unlikely. If visible damage of nuclear density gauge is observed, the Mill Incident Command System will be initiated immediately to determine if containment of the source has been compromised. In addition, the nuclear density gauges are inspected for containment loss every three years.

7.0 Maintenance of Program

7.1 Maintenance of the Emergency Response Plan

Plan Review

The plan as a whole will be reviewed on an annual basis and after actual emergency situations, whichever occurs first. The review will consider the results of any actual emergency operations, input received during training classes, exercise and drill success and shortcomings, input from regulatory and other response agencies, community considerations and regulatory changes. This review will be initiated by and approved by the RSO or Assistant RSO.

Emergency contact information will be updated as needed on all copies of this plan and at all posted locations to ensure rapid response to incidents.

Because the emergency situations at the Mill could involve other non-Mill emergency response personnel, an interface program will be implemented. This program will identify those personnel/agencies (police, fire, ambulance, hospital, etc.) who would most likely interact with the response effort. Those entities will then be visited and appraised of Mill's response planning. Program improvement and effectiveness will be gained through this effort. This interface will be conducted by the RSO or Assistant RSO.

Plan Distribution

The Emergency Response Plan will be distributed to both on-site and off-site emergency response personnel, CDPHE, Montrose LEPC, and other interested parties that may be involved in emergency response or planning related to the Mill. Copies of the Emergency Response Plan are provided to the following parties.

On-site

- Plant Manager
- Mill Foreman
- Safety Department Office
- Administration Building
- Corporate Office

Off-site

- CDPHE – Radiation Control Program
- MSHA
- Montrose LEPC
- Montrose County Sheriff's
- Paradox Fire Department
- Nucla-Naturita Fire Department

Anytime revisions are made to the plan, replacement pages for the plan will be sent as soon as practical to the parties above.

7.2 Training for Responders

The training program for on-site emergency responders is designed to include both routine training and emergency response exercises and drills for situations that could occur with respect to the Milling operation. Emergency response personnel will receive refresher training on a semi-annual basis. The training and drill program will include those categories of responses as listed below:

1) Incident Command System (ICS)
2) Fire/Explosion
3) Chemical Reagent Spill

- Line Leaks
- Tank Rupture
- Baghouse Failure
- Scrubber Failure
- Impoundment Dam Failure
- Thickener-Loss of Containment

4) Spill of Radioactive Materials during Shipping
   - Yellowcake Shipment
   - Ore Shipment
5) Loss of Containment: Nuclear Source
6) Medical Emergency
7) Severe Weather

Both radiological and chemical aspects of these response categories will be addressed, as needed.

Emergency response exercises will be held at least annually and will include desk top exercises and/or response drills. Response drills will be considered and implemented, as appropriate. These drills may involve outside agencies. These drills will be structured such that they deal with actual potential Mill site or shipping emergencies.

Emergency response training, exercises, and response drills are documented by a report to the file that describes the training provided and a list of attendees. Suggested changes to the overall plan are indicated in the report. The individual performing the training makes the recommendation for changes and the Plant Manager is responsible for reviewing and acting on the recommendation. Training records are retained on file for a minimum of three years by the RSO.

7.3 Training for Others

Classroom training will be provided to Mill personnel on a semi-annual basis, or more frequently, as warranted by operational changes, plant modifications, personnel changes or regulatory requirements. Because emergency situations could involve any and all personnel at the site, new Mill personnel have this training included in their initial training program. Refresher training will be conducted periodically such that all personnel receive training at least semi-annually. During the training sessions the following important emergency response tenants will be stressed:

1) Control (defining the problem)
2) Containment (isolating the problem)
3) Cleanup
4) Disposal

The classroom program will be aimed at successful implementation of the Emergency Response Plan. Accordingly, training sessions will include, but not be limited to, the following topics:

- Incident Command System
- Review of the Emergency Response Plan.
- Identification of potential hazardous materials leaks and spills.
- Corrective actions for hazardous materials leaks and spills.

- Identifying the Mill Incident Commander and defining the response interface with governing authorities.
- Initiating the internal and external notification and emergency assistance process.
- Identifying the Assembly Areas.
- Ensuring that all personnel are accounted for, and further actions to mitigate the event can be performed in a safe manner.
- Response personnel assignments
- Initiating the isolation process.
  - Area restrictions (access controls)
  - Exposure control
  - Enclosure
  - Surveillance
  - Sampling
  - Information gathering
- Decontamination Procedures
- Determining cleanup needs.
  - Utilization of data gathered
  - Additional data needs
  - Work plan development
  - Radiation work permits
- Cleanup verification
  - Data needs
  - Agency requirements
  - Reporting needs
- Final report preparation

Training will be available to off-site emergency response personnel annually and will include incident command system refresher, participation in on-site drills and exercises, and training topics as listed above. Visitors will receive the Safety Briefing that at a minimum will include site hazards, emergency warnings, and the Assembly Areas. Unescorted visitors, such as contractors and venders, will receive the same training that is given to visitors and will also include additional training as specified in Radiation Health and Safety Training (RH-010) procedure in the Health & Safety Plan.

Classroom training is documented by a report to the file that describes the training provided and a list of attendees. Suggested changes to the overall plan are indicated in the report. The individual performing the training may make recommendations for changes to the Plant Manager. Training records are retained on file for a minimum of three years by the RSO.

7.4 Drills and Exercises

Emergency response exercises will be held at least annually and will include desktop drills and/or response exercises. The desktop drill is designed to provide emergency response personnel with the tools needed to deal with actual emergencies without the mobilization of equipment. The desktop drill provides an atmosphere in which each individual contributes ideas and aids in the development of the proper response to specific incidents. In addition, it becomes readily evident in a hands-on demonstration what will be expected of the parties involved. Each exercise will be followed by a debriefing session to further the learning experience and modify the plan as necessary.

Response exercises will be considered and implemented, as appropriate. Exercises may involve outside agencies and drills will be structured such that they deal with actual potential Mill site or shipping emergencies. At least one non-participating person will provide a critique of the exercise including their observations of plan, procedures, facilities, equipment, training, and overall effectiveness.

Emergency response exercises are documented by a report to the file that describes the training provided and a list of attendees. Individuals participating in the exercises may make recommendations for changes and the RSO is responsible for evaluating these recommendations and forwarding suggested changes to the Plant Manager for consideration. Emergency exercise records are retained on file for a minimum of three years by the RSO.

7.5 Independent Audit of the Program

The emergency program is audited annually by the Quality Assurance Officer. The Quality Assurance Officer is not involved in the day to day operations of the emergency response program and can provide an objective independent audit.

The audits include a review of the plan, procedures, training, facilities, equipment, supplies, and records associated with off-site support agency interface. The purpose of the audit is to ensure that overall emergency preparedness is being adequately maintained at the Mill.

Recommendations for changes made by the Quality Assurance Officer will be presented to Mill management in a report. It is the responsibility of the RSO to review and make necessary changes and the responsibility of the Plant Manager to determine what changes are to be made. The Quality Assurance Officer will follow-up on recommendations changes and keep records of the recommendations and changes made to the program as a result.

7.6 Letters of Agreement with Off-Site Agencies

Letters of agreement with all local off-site emergency responders and other relevant agencies are obtained and kept on record with the RSO. These letters ensure that the local responders and agencies have reviewed information that is relevant to incident response at the Mill and are aware of what actions they make be asked to take during an incident.

The letters will be reviewed annually during the independent program audit to ensure that they are up to date. The letters will be renewed at least every four years or whenever major revisions are made to the Emergency Response Plan or procedures.

7.7 Emergency Medical Technician Training

Energy Fuels encourages its employees, especially supervisors and designated emergency response personnel, to acquire advanced First Aid training through emergency medical technician training programs. The company will reimburse expenses associated with receiving this type of training and will coordinate work schedules so that employees may attend scheduled classes.

8.0 Records and Reports

8.1 Records of Incidents

After every Mill emergency, the Mill Incident Commander will conduct a critique and debriefing with the personnel involved. The Mill Incident Commander will appoint a person to take minutes of the meeting. All comments will be recorded on an incident report form, as well as recommendations for modifying Mill emergency procedures, equipment or training.

The RSO or Assistant RSO will determine if local, state or federal reports or notification will need to be prepared detailing an incident. In general, the report will describe the cause, personnel involved, equipment, injuries, damage, location of contamination, decontamination results, corrective actions, actions to prevent reoccurrences, support required, and any resulting program changes related to the incident. These reports will be made to the appropriate governing agencies, as required by the CDPHE Radiation Control Rules and Regulations. Minor incidents that do not require reporting to off-site agencies will be reported to CDPHE in the annual report.

Follow-up incident reports include:

- cause of the incident
- personnel involved
- equipment involved
- injuries that occurred as a result of the incident
- damage that occurred as a result of the incident
- description and location of any contamination that occurred as a result of the incident
- decontamination measures that occurred
- corrective actions
- monitoring conducted
- actions taken to prevent reoccurrences
- off-site support required
- any resulting program changes related to the incident

Incident reports will be retained on record with the RSO until termination of the Mill Radioactive Materials License.

8.2 Other Records

Records of training, inspections, drills, exercises, audits, inventory and maintenance of emergency equipment and supplies, reviews and updates of emergency plans, and notifications of off-site agencies will be maintained by the RSO for a minimum of three years unless otherwise specified by regulation or license requirement. All reports, investigations, and evaluations will also be maintained by the RSO for a minimum of three years unless otherwise specified by regulation or license requirement.

9.0 Related Plans and References

1. Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division 2005. "Rules and Regulations Pertaining to Radiation Control, CCR 6 1007-1 Part 4, Standards for Protection Against Radiation." Amended May 18.

2. CH2MHill 2009. "Basic Engineering Report and Cost Estimates, Design Criteria." February 4.

3. Energy Fuels Resources Corporation (EFRC) 2009a. "Piñon Ridge Mill Material Containment (MC) Plan." September.

4. EFRC 2009b. "Piñon Ridge Mill Spill Prevention, Control and Countermeasure (SPCC) Plan." September.

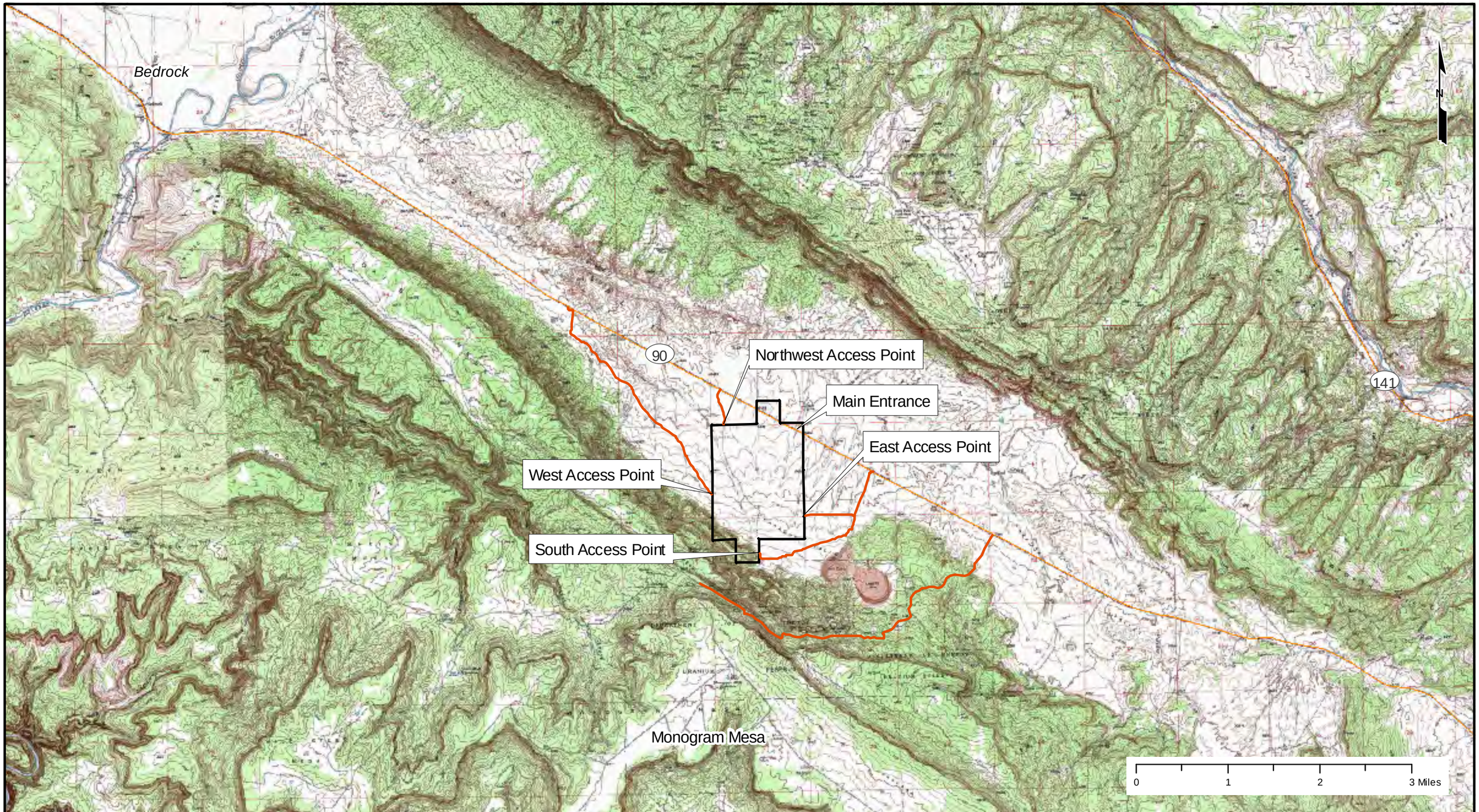
5. EFRC 2009c. "Piñon Ridge Mill Health and Safety Plan." October

6. U.S. Environmental Protection Agency (EPA), Office of Radiation Programs 1992. "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." May.

7. U.S. Nuclear regulatory Commission 1992. "Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Material Facilities." January.

8. Visus Consulting Group, Inc. 2009. "Piñon Ridge Mill Facility Operating Plan." July 17.

FIGURES



Legend

- Project Boundary
- Alternate Access Routes

Energy Fuels Resources Corporation

PROJECT	Pinon Ridge
DRAWN:	7/2/10
DRAWN BY:	Z Rogers
CHECKED BY:	
FILE NAME:	ERP_Fig1_070210.mxd

Site Location Map

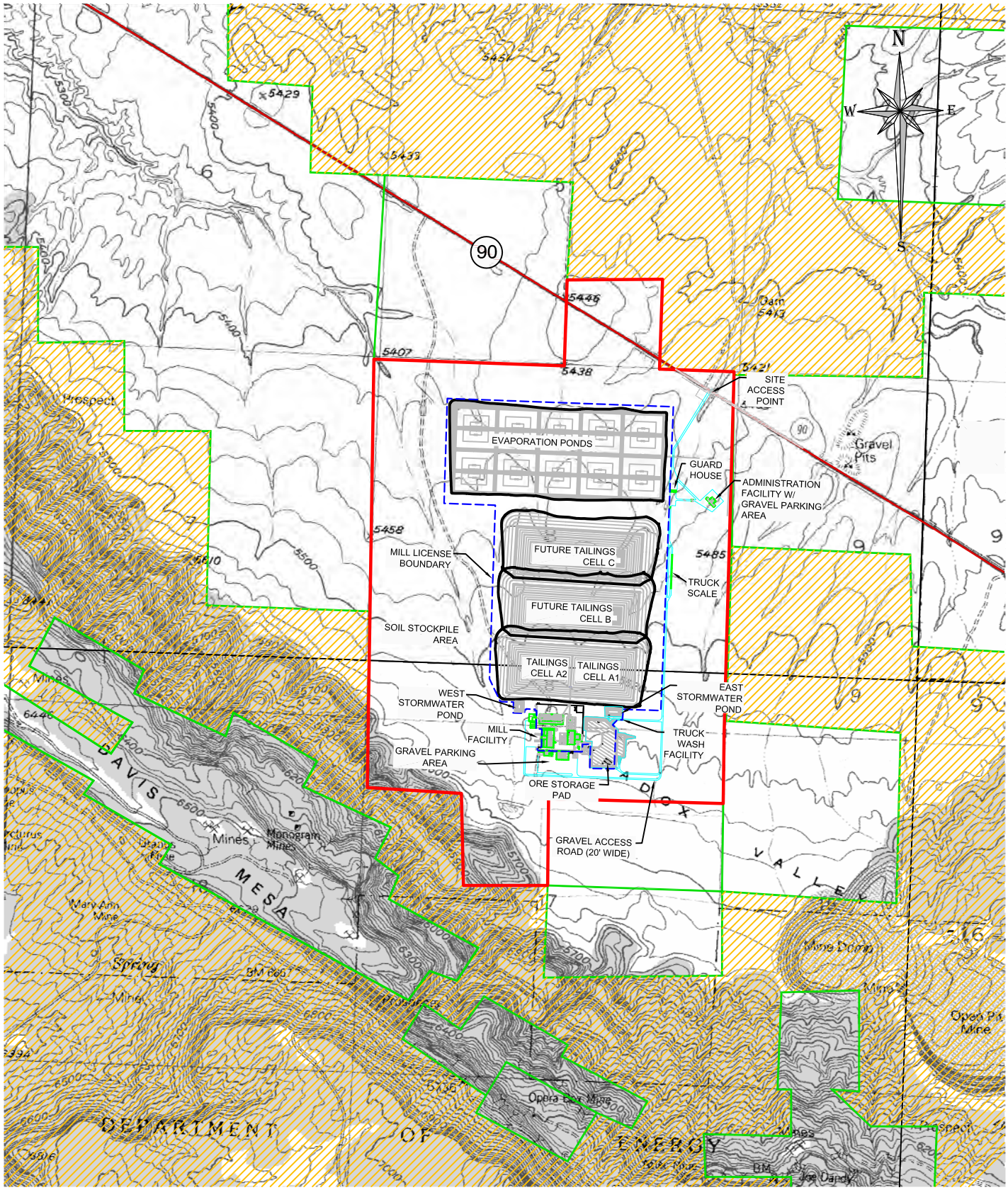
ENERGY FUELS RESOURCES
PIÑON RIDGE MILL SITE
MONTROSE COUNTY, COLORADO

ORIGINATOR: Z Rogers

APPROVED BY:

FIGURE

1



LEGEND

- BLM LAND
- PRIVATE LAND
- PIÑON RIDGE PROPERTY BOUNDARY
- MILL LICENSE BOUNDARY

2000 1000 0 2000 4000

SCALE IN FEET

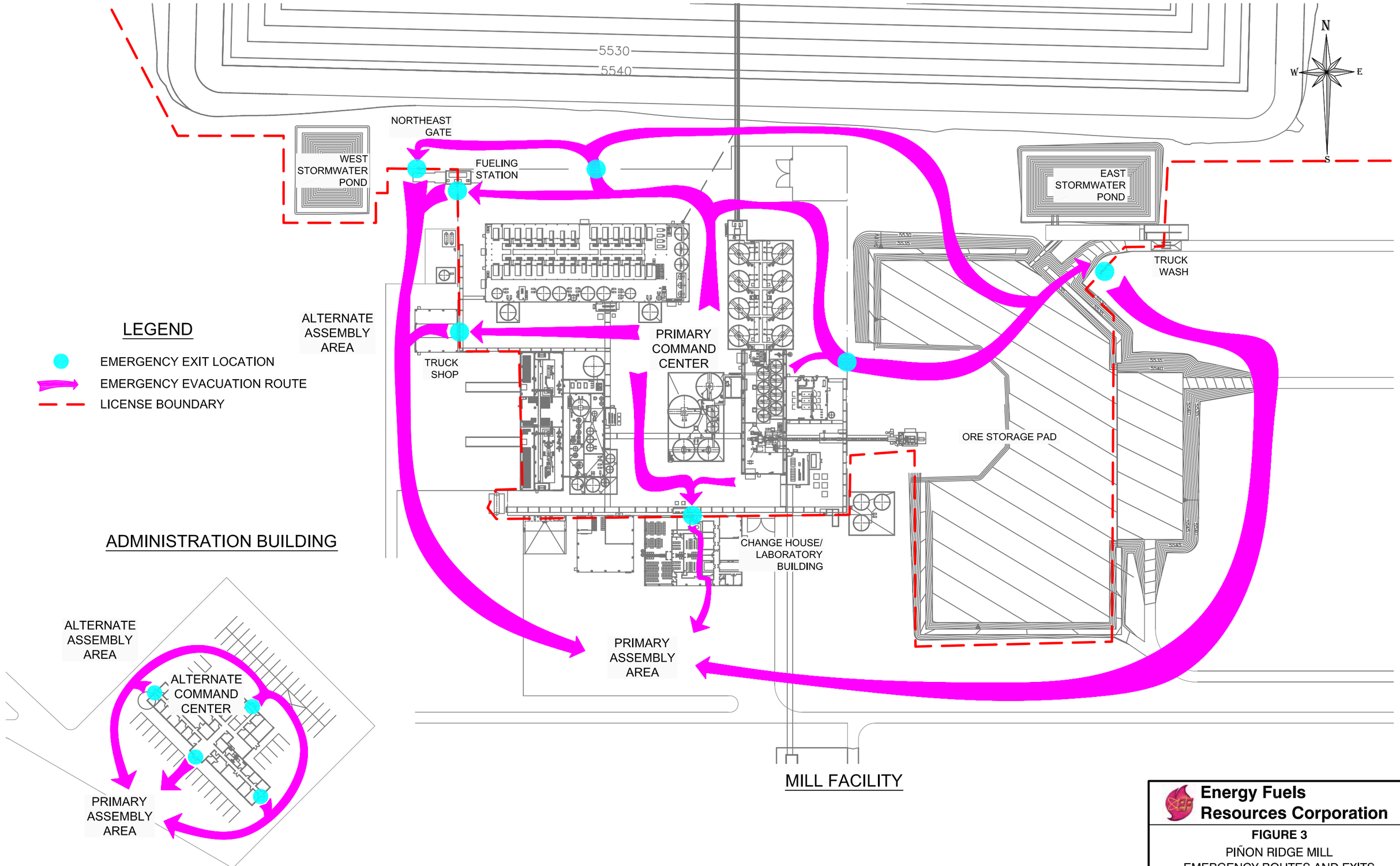
Energy Fuels Resources Corporation

FIGURE 2

PIÑON RIDGE MILL SITE MAP

Scale	Created	Drawn by
1" = 2000'	July 30, 2009	ZTR

N:\Environmental\Mill Permitting\Emergency Response Plan\Figures\Fig2_SiteArea.dwg



Energy Fuels Resources Corporation

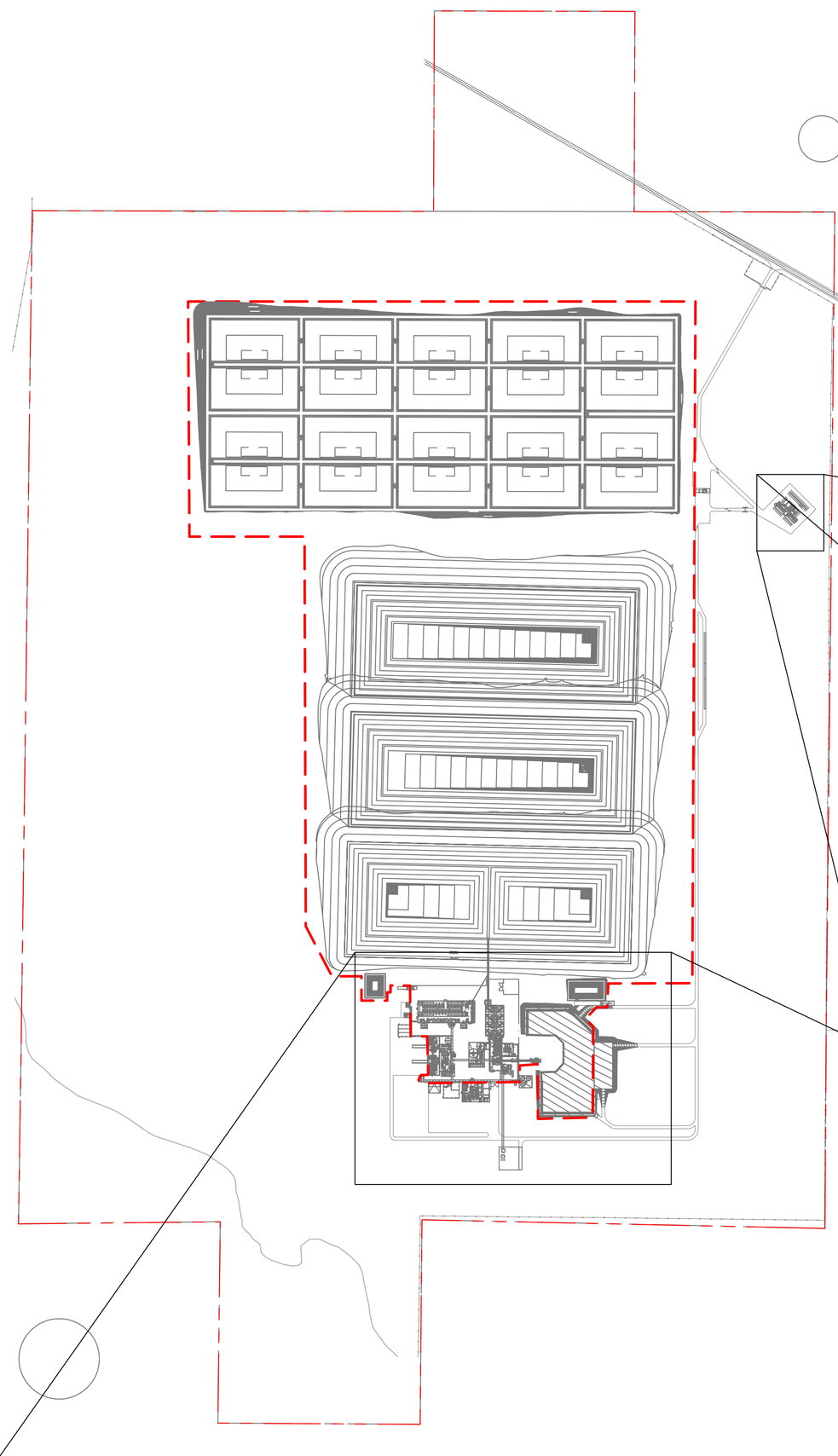
FIGURE 3

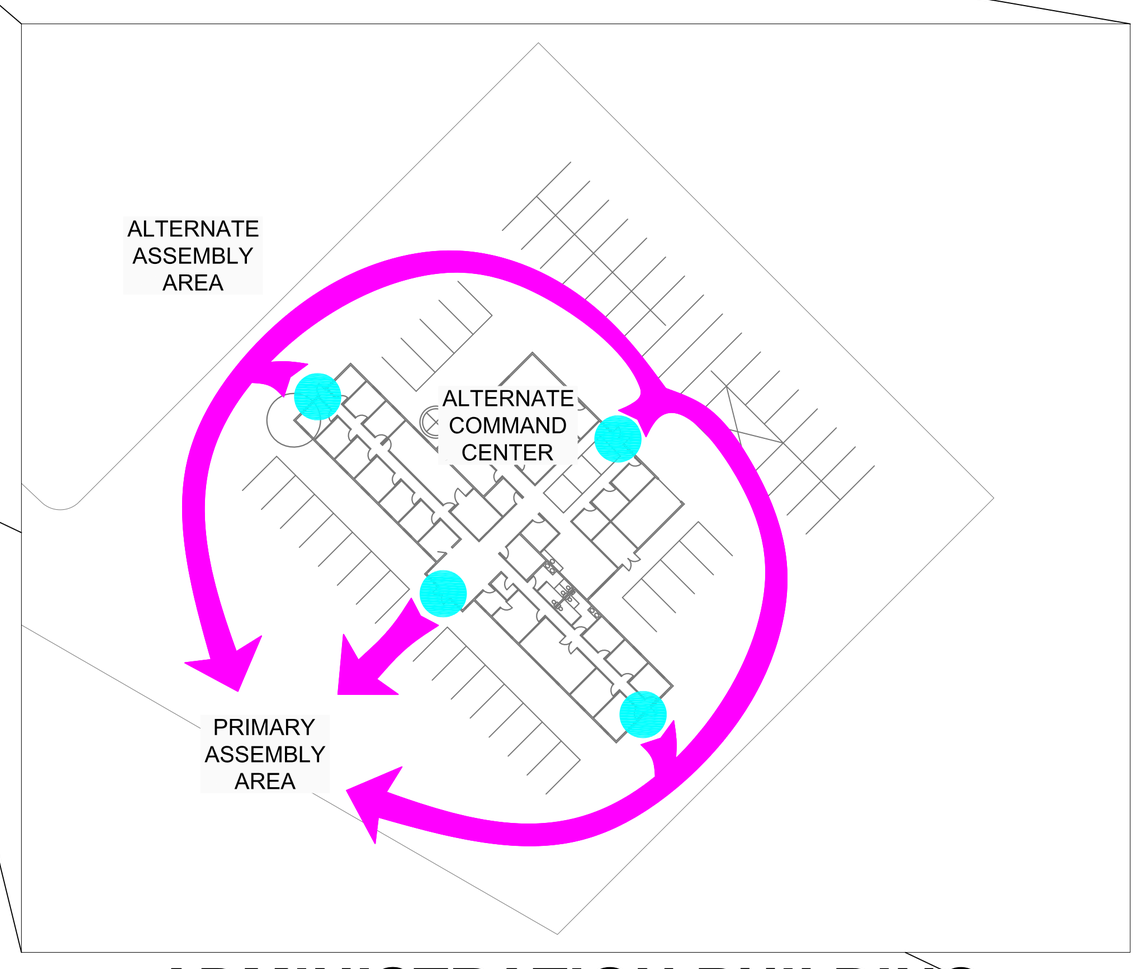
PIÑON RIDGE MILL
EMERGENCY ROUTES AND EXITS

Scale	Created	Drawn by
Varies	July 30, 2009	ZTR

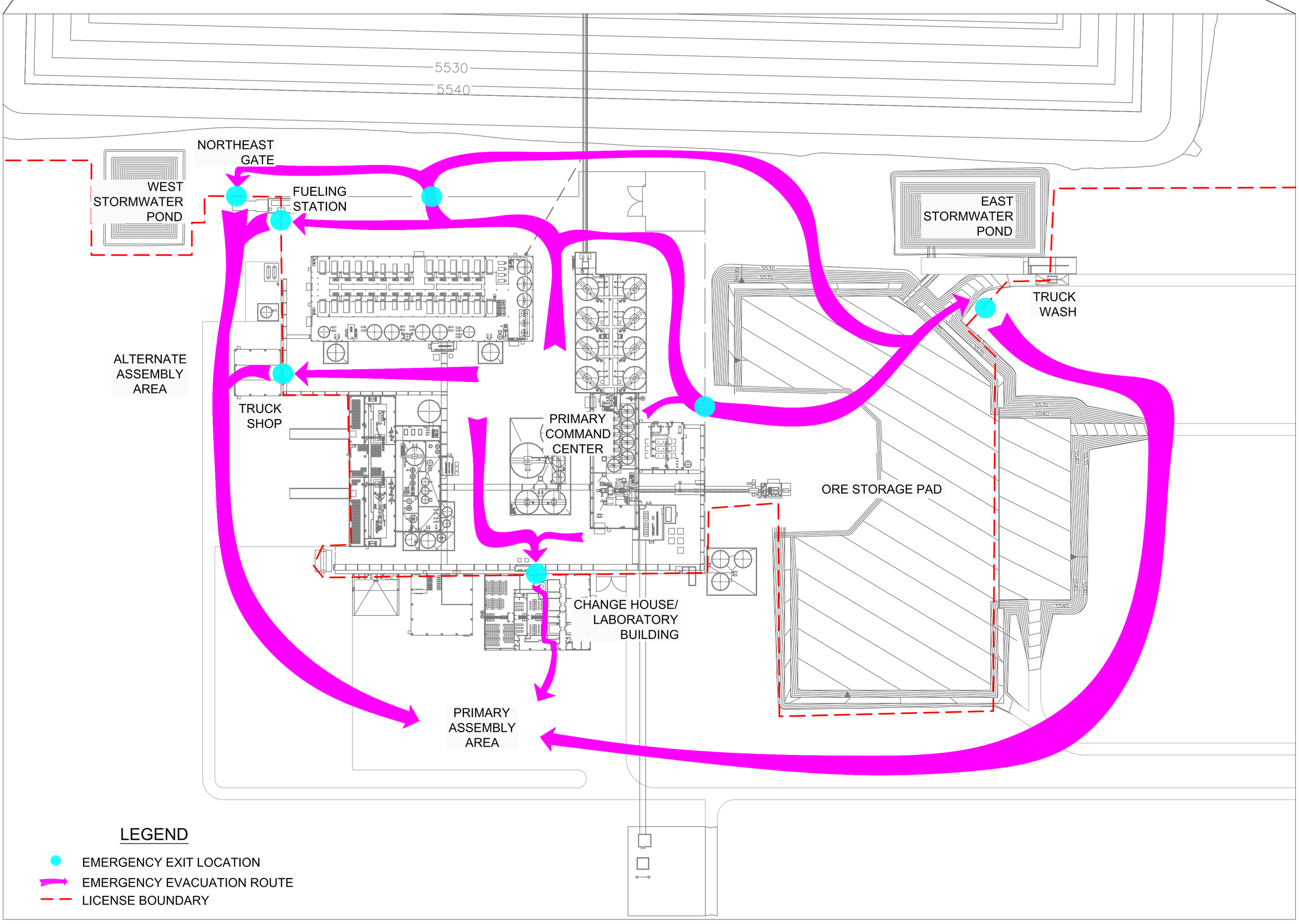
N:\Environmental\Mill Permitting\Emergency Response Plan\Figures\Fig3_MillFacility.dwg

PIÑON RIDGE MILL EVACUATION PLAN





ADMINISTRATION BUILDING



MILL FACILITY

APPENDIX A

INCIDENT NOTIFICATION FORM

INCIDENT NOTIFICATION FORM

INITIAL INFORMATION:

Incident Type: ☐ Fire/Explosion ☐ Chemical Spill ☐ Nuclear Source Containment Loss		
Date:	Time Reported: ( ) AM ( ) PM	Time Occurred: ( ) AM ( ) PM
Individual Reporting: (Your Name)		
Phone Number:	Company Name:	
Location of Incident:	Address:	
Material Involved:	City, State, Zip:	
Estimated Amount:	Severity of Incident:	
Source & Cause of Incident		
Any Injuries, Describe		

INITIAL ACTIONS

(Include Containment and/or Clean-up Efforts)

NOTIFICATIONS

Persons and/or Agencies Notified	Phone Number	Date and Time Notified	Written Follow-up Report Required?

APPENDIX B

TRANSPORTATION CARRIER EMERGENCY
RESPONSE PROCEDURES

TO CARRIER PERSON-IN-CHARGE:

KEEP THESE EMERGENCY PROCEDURES WITH YOUR SHIPPING PAPERS

1. Rescue and lifesaving should not be delayed and may be conducted with minimal potential hazards from the cargo in this vehicle. If possible, use a respirator and avoid breathing dust from spilled cargo.

2. After needed rescue, lifesaving, first aid or fire fighting, please read the attached instructions in the event of cargo spillage.

3. Please note that this vehicle is equipped with a spill kit. It should be accessible through the cargo doors.

This shipment contains uranium concentrate in the form of yellowcake (U_3O_8). Its color may be yellow, greenish-brown, or black. This material cannot explode or burn. In the event of an accident involving spillage of concentrate, the following actions are recommended in the order given, if appropriate:

1. LIFESAVING, RESCUE, AND FIREFIGHTING

   If possible, use a respirator and avoid breathing or swallowing yellowcake dust. Yellowcake on the skin or clothing is of minimal concern, and simple washing methods will remove it. If you believe you may have inhaled or ingested yellowcake, please notify the Emergency Response Team upon their arrival at the accident scene. To avoid inhalation, wear a respirator when working near the spill. To avoid ingestion of uranium, do not eat, drink or smoke while near the spill. In the event of a fire, initiate fire fighting in conjunction with occupational safety personnel. Standard fire fighting self-containing breathing apparatus' (SCBA's) will provide adequate protection against inhalation of yellowcake dust.

2. CONTACT THE LOCAL LAW ENFORCEMENT AGENCY

   Report the accident to the local police or law enforcement agency. Inform them of any spillage of "LOW SPECIFIC ACTIVITY" (LSA) radioactivity material and tell them it is called yellowcake or uranium concentrate. Ask them to notify the State Health Department. Give them the location of the accident scene and report any injured persons.

3. COVER THE SPILLED URANIUM ORE CONCENTRATE

   This trailer carries a box containing gloves, shoe covers, "CAUTION: RADIOACTIVE MATERIAL" tape, four approved dust respirators with user instruction, coveralls, 1,000 square feet of plastic sheeting, tent stakes, nails, a hammer and a knife. Put on the respirator, coveralls, gloves and shoe covers, then cover the spilled material with plastic. Secure the edges of the plastic to the ground using the tent stakes, or to the vehicle floor, etc. using the nails. The "CAUTION: RADIOACTIVE MATERIAL" tape should be positioned to provide notice to bystanders. They should be instructed to stand upwind of the spill and 25 feet or more from it.

4. FILL OUT THE QUESTIONNAIRE ATTACHED

Please obtain all of the information required on the attached form. You will need to relay this information to the carrier and the shipper.

5. TELEPHONE THE CARRIER AND THE SHIPPER (CALL COLLECT)

(a) The carrier is:

Phone the company or unit to whom the transport vehicle belongs.

(b) The shipper is:

Energy Fuels (303) 974-2140

(To be determined - insert after hours contact info here).

Read the completed questionnaire to whoever answers your call. If necessary, for complete understanding, read the questionnaire a second time.

6. WHEN HELP ARRIVES

Please cooperate with all civil authorities and the carrier and shipper personnel when they arrive at the scene. Follow their health and safety instructions for checking possible contamination on your clothing or body.

Please be assured that your exposure to this material will be safe if you have followed these instructions. The health and safety personnel who will arrive will be glad to answer any questions you have about this matter.