Subcontractor & Uncleared Visitor

Training

Course #553.05

WELCOME TO

PANTEX!

PanTEX

SECURING AMERICA

October 2016

Hello!

The staff at CNS Pantex would like to welcome you to the Pantex Plant. The following pages will provide important information in which you are required to read and comply. Failure to comply with the rules and requirements of the Pantex Plant could result in immediate removal of access privileges; and in some circumstances, civil and/or criminal prosecution. If you have any questions after reading this information, please ask your escort or point-of-contact for clarification.

After reading the following information, a Training Completion Report, PX-3864, must be completed in order to receive credit in Pantex Learning Management System (LMS).The following page illustrates the proper way to fill out the PX-3864. All highlighted areas must contain the information requested. The completed form is to be left with Access Control personnel before entering the facility.

Contact the section Point of Contact (POC) for questions or clarifications about the information contained within this book. For general information, contact Carrie Brain, (806) 477-6652.

Have a safe and security conscious visit to the Pantex Plant.

Document Symbols

This symbol indicates a point of contact for more information.

This symbol indicates an important note.

OUO
(Upon completion and submission to Pantex Plant)

Instructions:
1. PRINT legibly, use BLACK INK --- stay inside the boxes
2. VERIFY Header information is complete and correct
3. Complete Badge No. field at bottom; Sign & Date

Index No: PX-3864
Page 1 of 1
Issue No.: 19

Training Completion Report

(Ref. WI 02.03.02.03.03. WI 02.03.02.03.05, WI 02.03.02.03.06)

Employee Name: John Doe
Badge No. (or SSN): 1 2 3 4 5 6 7 8 9

Item Name: Pantex Visitor/Contractor Orientation
Item No.: 5 5 3 . 0 5
Item Type: S T
Item Revision Date: 1 2 (M M) 1 2 (D D) 0 7 (Y Y)

Test Version:
Instructor Badge No:
Score:
Complete: X (Y) ☐ (N)
RIDS: A
Workflow Route No.:
TSR Related?: ☐ (Y) X (N)

This training completion report will be used to activate your account in the training database. Please fill out the form completely and legibly, as all information is needed.

Print Company Name: ABC Company
Plant Contact: Jane Pantexan
Date of Birth: 07-04-57

****

ACKNOWLEDGMEN
By signing and returning this
I acknowledge that I have read and unders

Pantex Visitor/Con
#553.05

Further, I acknowledge that failure to follow and compl
of this facility could result in immediate rem
and in some circumstances, civil and/o

PLEASE VERIFY ALL INFORM ON IS CO
SIGN AND DATE

ALL highlighted areas must be completed to receive credit for completion.

OFFICIAL USE ONLY
May be exempt from public release under the Freedom of Information Act (5 U.S.C. 552) exemption number(s) and category: __6 Personal Privacy__
Department of Energy review required before public release: Name/Org: ___Don Gerber_ Classification Officer signature on file Date:__11/03/08
Guidance (if applicable) PX-297551 B&W Pantex 9/05

Badge No. (or SSN): 1 2 3 4 5 6 7 8 9
Employee Signature: John Doe
Training Completion Date: 1 1 (M M) 1 1 (D D) 0 7 (Y Y)

OUO
(Upon completion and submission to Pantex Plant)

Markings are for training use only

You Have a Right to a Safe and Healthful Workplace

IT'S THE LAW!

- You have the right to notify your employer or the local Department of Energy (DOE) office about workplace hazards, without reprisal. You may ask that your name not be used.
- You have the right to participate in the activities referenced in 10 CFR 851 "Worker Safety and Health Program," on official time.
- You have the right to access copies of DOE worker protection publications; the worker safety and health program for your workplace; and the standards, controls, and procedures that apply to your workplace.
- You have the right to have access to some accident and illness recordkeeping logs and the information in records of any workplace illness or injury that you experienced.
- You have the right to observe monitoring or measuring of hazardous agents, to receive the results of your own monitoring, and be notified when monitoring results indicate an overexposure.
- You have the right to have a representative accompany the DOE's Director for enforcement or the Director's authorized personnel during the inspection of your workplace.
- You have the right to request and receive results of inspections and accident investigations.
- You have the right to decline to perform an assigned task because of your reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious physical harm to you, coupled with your reasonable belief that there is insufficient time to seek effective redress through the normal hazard reporting and abatement procedures.
- Your employer must post this notice in your workplace.

Title 10 CFR Part 851 requires DOE contractors to provide their workers with a safe and healthful workplace. To obtain more information about those requirements and your rights, seek advice or assistance, or report an emergency, contact your immediate supervisor, your organizational management, your local National Nuclear Security Administration Production Office (NPO), the DOE Office of Environment, Health, Safety and Security (http://energy.gov/ehss/environment-health-safety-security), the CNS Pantex Employee Concerns Office or the CNS Pantex 10 CFR 851 Program Office.

Points of Contact:

NPO – Pantex Employee Concerns Office: (806) 477-3623

CNS Pantex Employee Concerns Office: (806) 477-5348 or (806) 477-5337

CNS Pantex 10 CFR 851 Program Office: (806) 477-6801

Security Awareness and Operations Security (OPSEC)

Point of Contact

OPSEC Administrator (806) 477-6366

Pantex Mission:

Pantex is responsible for maintaining the safety, security and reliability of the nation's nuclear weapons stockpile.

Overview of Pantex Safeguards and Security (S&S) responsibilities

There are six primary functions within the S&S Program:

1. **Program Planning and Management** establishes planning and management requirements for the overall S&S program.
2. **Information Security** establishes security requirements for the protection and control of information and matter required to be classified or controlled by statutes, regulations, or DOE directives.
3. **Personnel Security** assures that individuals with access to classified information and Special Nuclear Material (SNM) do not pose a threat to the nation's security. Personnel Security coordinates background investigations for all prospective employees to ensure they are eligible, under DOE requirements, to receive an access authorization (security clearance).
4. **Physical Protection** establishes requirements for protection of the physical aspects of security, including access control, alarms, barriers, and security systems installation and maintenance.
5. **Protective Force** exists for the protection of Special Nuclear Material, personnel, information, the environment, and government property from theft, diversion, sabotage, and malicious acts that could impact national security or the health and safety of employees and the public.
6. **Nuclear Material Control and Accountability (NMC&A)** provides management, control and accountability for all nuclear materials.

Access Control

"Access Control" is the process of permitting or denying access to information, facilities, nuclear materials, resources, or designated security areas. Access Control measures include hardware and software features, physical controls, operating procedures, administrative procedures, and various combinations of these, designed to detect or prevent unauthorized access to Department of Energy interests.

Escort Procedures

In some areas of the plant, visitors and sub-contractors must be escorted. The individual providing the escort is responsible for oversight and control of personnel in a security area who do not have the proper need-to-know or access authorization for that particular area. If you must be escorted in order to conduct your work at Pantex, it is your responsibility to stay with the person escorting you at all times. Failure to follow your escort's guidance or direction can result in immediate – and possibly permanent – removal from Pantex Plant.

Protection of Government Property

All employees are responsible for government-owned property provided for their use.

Property removal
Government-owned property may not be removed from the Pantex Plant for any reason other than for official business or DOE/NNSA approved activities. Employees must have an approved property pass before removing government property from the plant.

Potential punishments
Conversion of government-owned property to personal use, misuse, or abuse is prohibited and punishable up to and including termination. Acts of theft or unlawful possession of property may result in fines of $1000 to $10,000 and/or 1 to 10 years of imprisonment.

Badge Procedures
Security Badges are an important element of the access control system. It is your identification and allows you access into Pantex facilities. Security badges are issued at Access Control in Building 16-12. A security badge is issued only after an employee has been approved for access and has completed an Initial Security briefing.

Wear Badge
Badges must be worn at all times while on DOE property. Place badge photo side out on the outer most piece of clothing, in a location above the waist.

1. **Lost Badge**
If you lose your badge, report to Access Control, Bldg. 16-12.

2. **Stolen Badge**
If your badge is stolen, report it immediately to Access Control at (806) 477-3908 or (806) 477-3909. If it is after hours, call the Operations Center (OC) at (806) 477-5000.

3. **Forgotten Badge**
If you forget your badge, you may choose to return home or Access Control can issue a temporary badge for one day. If badge is lost or forgotten two or more times within a 12 month period, your management will be notified. Repeat offenders may risk losing access to Pantex property.

4. **Badge Replacement - Your badge must be replaced if:**
   - Your contract company changes
   - Your name or physical appearance changes
   - It is faded or damaged

5. **Badge Verification**
When entering Pantex, the security badge is used as verification to ensure only authorized personnel have access to the facility. Upon entering the Pantex facility present your badge for examination by the Security Police Officer or use the automated Argus System.

6. Badge Surrendering

Pantex employees, consultants, and contractors on leave for 30 consecutive days or those who will be gone for an unknown time period must return their badge to Access Control, Building 16-12. Security badges are the property of DOE and shall be returned to Access Control upon request, expiration, when no longer valid or required, or upon termination.

7. Badge Cautions

- It is against the law to counterfeit, alter, or misuse your badge.
- Do not use the DOE standard badge outside the Pantex facilities unless it is for an official government purpose.
- Remove badge when off-site.
- Protect your badge from theft; do not leave your badge in plain view or in your vehicle.

Questions about badges or badging procedures should be directed to (806) 477-3908, (806) 477-3909, or (806) 477-6100

Identification of Prohibited and Controlled Items Prohibited Items

The following are examples of prohibited items; these items are **NEVER** allowed **ANYWHERE** on-site at Pantex, unless prior authorization has been received from Safeguards & Security Division.

Any type or amount of the following:

- Alcohol
- Ammunition
- Arrows
- Blackjacks
- Chemical dispensing devices for pepper spray, mace, etc.
- Clubs (for items like golf clubs, see Controlled Items list)
- Drug paraphernalia
- Controlled substances
- Drugs (prescriptions are allowed as long as they are prescribed for the employee who is using them – Medical must be notified of medication use)
- Compound bows
- Crossbows
- Explosives
- Explosive devices
- Fertilizer (Bulk)
- Firearms
- Illegal drugs
- Items that could be used to manufacture explosives
- Incendiary devices
- Knives with blade length exceeding 5 ½ inches
- Knuckles
- Nightsticks
- Nun chucks
- Stun guns
- Swords
- Technical Surveillance Equipment (i.e. any equipment specifically designed to clandestinely collect information
- Zip guns

Controlled Items

The following are examples of controlled items that are allowed on-site at Pantex, but **MUST** remain in personal vehicles in the Property Protection Area.

Any type or amount of the following:

- Cameras – At no time are pictures to be taken anytime on plant site with any type of personal equipment.
- Telephones (all types including cellular, and satellite)
  - **Exception:** Government-owned cellular telephones
- Computer Components
  - Cellular wireless cards
  - Wireless cards
    - **Exception:** Wireless cards issued for Pool Laptops in transit between 16-19 and your car
  - Bluetooth cards, devices, or adapters
  - Any other computer component or peripheral
- Computers not owned by Pantex – Exceptions for this category are given on a case-by-case basis by the Information Systems Security Site Manager (ISSM) or his designate
  - Laptops/Netbooks
  - Smart phones/PDAs (i.e. iPhones)
  - Media players (i.e. iPods)
  - Tablets, pads, and slates (i.e. iPads)
  - Game devices (i.e. PSPs)
  - Any other device with a processor and storage
- Global Positioning Systems (GPS) – (e.g., Portable (Transmit/Receive))
- On-Star
- Personal software
- Radio frequency (RF) devices
  (*Note: key fobs ARE allowed except in Nuclear Explosive Areas*)
- Recording devices (optical, video, audio, or data)
- XM or Sirius radio receivers with recording capabilities
- Any privately owned device, electronic or optical, capable of recording, processing, storing or transferring audio, computer data, video or photos.

Basically – if you can plug it in, if you can upload, download, or transmit information with it, leave it in your personal vehicle in the Property Protection Area.

OPSEC & Public Information Release

You are reminded that only those Pantex employees that have been specifically designated to speak for Pantex to the media are authorized to do so. If you are contacted by any media personnel for your comments on Pantex information, you are directed to refuse the request, and recommend that they contact the Pantex Public Affairs Department (WI 02.04.08.01.01).

If you are asked to publically contribute to a professional publication about Pantex information, you must submit the content and justification for review by submitting a PX-2209 (WI 02.02.04.06.01).

Information found in the public domain to be sensitive to Pantex or Pantex employees will be handled according to Federal Law, DOE Orders, and the Pantex Employee Manual (MNL-00018). Acts of misconduct, neglect and/or unauthorized public disclosures about Pantex are strictly prohibited and may result in criminal and/or civil penalties.

Violations may also result in disciplinary action by the Company up to, and including, discharge.

NOTE: Government-owned equipment must be pre-approved and documented before it can be brought onto the plant site. Employees planning to purchase electronic equipment for use at work should contact the Technical Security Office prior to purchase.

Electrical Devices are not permitted into a Nuclear Facility with the exception of non-transmitting watches, non-transmitting pagers, hearing aids, and internal medical devices that do not have defibrillator capabilities. All other electrical devices or medical equipment should be reported to Pantex escorts to identify allowable facilities.

Protection of Controlled Unclassified Information

Controlled Unclassified Information (CUI) is broadly defined as unclassified information that may be exempt from public release and for which disclosure, loss, misuse, alteration, or destruction may adversely affect national security, government interests, or personal privacy. As with classified information, CUI is protected by giving access only to those who have had the proper training and the need-to-know. If you require access to CUI in order to perform your job, you will receive additional protection information at that time.

Routine Access to Unclassified Controlled Nuclear Information (UCNI)

A person may only have routine access to UCNI if the person has a Need to Know (NTK) in order to perform official duties and must be a U.S. citizen who is 1.) an employee of any branch of the Federal government, or 2.) an employee of representative of a State, local or Indian tribal government, or 3.) a member of an emergency response organization, or 4.) an employee of a Government contractor or consultant, or 5.) falls into a category listed in 10 CFR 1017.

There are situations in which a non-U.S. citizen may have access to UCNI, as well. Those requirements can be found in 10 CFR 1017.

If you are granted access to UCNI, you are responsible for ensuring its protection. UCNI must not be shared with someone who is not authorized to have it. You must maintain physical control over any document in use. When not in use, it must be stored in a locked office, filing cabinet or drawer in the Personal Protection Area (PPA) or it must be

located within the Limited Area (LA) or higher level of security. You may make copies of an UCNI document, but you must limit the number of copies to the minimum number that are needed. When you no longer need the UCNI document, it must be placed in a disintegration box for proper destruction.

If you need to transmit an UCNI document onsite, the document must be in an opaque envelope stamped with the words "TO BE OPENED BY ADDRESSEE ONLY". If you need to transmit an UCNI document offsite, you may use U.S. First Class, Express, Certified or Registered mail or any means approved to send classified information. The envelope must be stamped with the words "TO BE OPENED BY ADDRESSEE ONLY".

In order to discuss UCNI over the phone, you must determine if the person is onsite or offsite. If the person is onsite (i.e. you used a 4-digit extension and they have not forwarded their phone offsite), you may discuss UCNI. If the person is offsite, you must use a secure phone (STE or vIPER) to discuss UCNI.

Identification of Classification Markings

Classified information/material is protected according to federal statutes and Presidential Executive Orders. DOE is responsible, under the Atomic Energy Act of 1954, as amended, for classifying information and material related to atomic energy and its use in weapons. Executive Orders require some types of information to be classified for other aspects of national security. The Atomic Energy Act of 1954 and Executive Order 13526 govern classification policy.

Documents are marked to indicate that they are classified. Markings at the top and bottom of each page on classified documents will indicate the information is classified as Confidential, Secret, or Top Secret. Classified information must be protected at all times. It must either be locked in a General Services Administration (GSA) approved safe, vault, or vault-type-room, or safeguarded by an authorized cleared individual.

If you require access to classified information in order to perform your job, you must hold a DOE clearance, complete a Comprehensive Security Awareness briefing, sign a SF-312 Classified Information Nondisclosure Statement, and complete additional training prior to being given access.

NOTE: Should you have any questions or concerns regarding the protection of, access to, or identification of CUI, UCNI or Classification in general, please contact the Classification office at (806) 477-5111.

Procedures for Reporting Incidents of Security Concerns

It is everyone's responsibility to help deter, detect, and prevent an incident of security concern. Incidents of security concern are actions, inactions, or events at Pantex that:

1. pose threats to national security interests and/or critical DOE assets,
2. create potentially serious or dangerous security situations,
3. potentially endanger health and safety of the workforce or public,
4. degrade the effectiveness of the Safeguards and Security programs, or
5. adversely impact the ability of the organization to protect DOE safeguards and security interests.

Any attempt to gain unauthorized access to classified information or matter, or any time classified is left unattended or unprotected are all considered Incidents of Security Concern.

When Should YOU report an Incident of Security Concern?

Immediately! Any person, who observes, finds, has knowledge or information about a potential incident of security concern must immediately report the information to their supervisor, or the Operations Center.

Working Atmosphere

Point of Contact

Vickie Moore (806) 477-5757

Working Atmosphere Policy Against Harassment of Employees

Visitors and employees at Pantex Plant have a responsibility for maintaining high standards of honesty and integrity, and for conducting themselves in a way that will assure proper performance of the Company's business for the government.

Working Atmosphere

It is the policy of Pantex Plant to provide a working atmosphere free of discriminatory insult, intimidation, and other forms of harassment. All employees and visitors share the responsibility for fostering a pleasant working atmosphere that allows individuals to achieve high performance in their duties. State and federal anti-discrimination laws prohibit harassment.

Harassment

Harassment based on race, age, color, religion, gender (including sexual harassment), gender identity, sexual orientation (including sexual orientation harassment), national origin, ancestry, genetic information, protected veteran status or disability is prohibited. Employees and visitors are also protected from retaliation or reprisal for expressing concerns individually or in groups, or raising allegations of prohibited discrimination. Harassment may be overt or subtle. However, whether it takes verbal, nonverbal, or physical form, harassment is insulting and demeaning to the recipient. Examples of harassment include, but are not limited to the following: verbal abuse, racial, ethnic and religious epithets, slurs or jokes, graffiti (remarks written or drawn on walls or other structures), obscene gestures and hazing. Even derogatory remarks shared between friends who are members of the same protected group may lead to overt acts of discrimination. The Company will not tolerate harassment at Pantex Plant.

Sexual Harassment

Sexual harassment is intolerable in the workplace and is defined to include, but not limited to:

- Making unwelcome sexual advances.
- Explicitly or implicitly making requests for sexual favors and other sexually oriented verbal or physical conduct a term or condition of employment.
- Explicitly or implicitly making requests for sexual favors and other sexually oriented verbal or physical conduct the basis for employment decisions.
- Creating a working environment that is offensive or interferes with work performance.

The Company prohibits all sexual harassment at the Pantex Plant.

Employee and Visitor Responsibility

Employees and/or visitors who believe that they or others are the victims of harassment should promptly report the harassing conduct to management. Personnel should report incidents to the immediate supervisor, any other member of management, or the Ethics & Employee Concerns Office.

Management Responsibility

Company management and subcontractors are responsible for assuring that no harassment occurs within their area of authority. Managers should give immediate attention to complaints of harassment and should report the complaints to the Ethics & Employee Concerns Office.

The Ethics & Employee Concerns Office and the reporting manager will conduct investigations, which may include conferring with the parties and witnesses named by the complainant. Because of the sensitive nature of such complaints, the Ethics & Employee Concerns Office and the reporting manager must investigate the incident with particular care and the incident should remain, to the extent possible, strictly confidential.

Sanctions

If the investigation reveals that the complaint is valid, the Company will take prompt action to stop the harassment immediately and to prevent its recurrence.

Harassment by Non-company Contractors

Should investigation reveal that an employee or visitor has become the victim of harassment or sexual harassment by a non-company contractor with whom the employee has work-related contact, it will be the responsibility of the Ethics & Employee Concerns Office to act accordingly in dealing with the vendor, contractor or other employer of the person involved.

Sexual Harassment Policy

Sexual harassment is a form of misconduct that undermines the high standards of integrity and honesty established by the Company. Specifically, Federal Regulations define sexual harassment as the deliberate, unwelcome or repeatedly unsolicited verbal comments, gestures, or physical contact of a sexual nature.

Any employee or visitor who participates in deliberate or repeated unsolicited verbal comments, gestures, or physical contact of a sexual nature is engaging in sexual harassment and is also interfering with work productivity.

The Company prohibits the display of sexually suggestive visuals such as pinups, calendars, posters, cartoons, quotes and/or signs. Such displays could create a hostile work environment, which is a form of sexual harassment.

The Company will not tolerate sexual harassment in the work environment. Employees or visitors should report sexual harassment to a member of the supervisory chain or to any designated Company contact.

For additional information or questions, contact the Plant Ethics & Employee Concerns Office, (806) 477-5348.

Substance Abuse Program

The Pantex substance abuse program complies with all applicable Federal requirements. All subcontractors at Pantex are subject to for-cause (reasonable suspicion) and post incident, injury, accident or occurrence testing for illegal drugs and/or being under the influence of alcohol. Subcontractors that test positive for illegal drugs or alcohol misuse will permanently lose site access.

Beryllium Awareness

Points of Contact

Ken Meyer (806) 477-4209
Rosemary Camarillo (806) 477-5958

Beryllium is a lightweight metal. Beryllium dust can cause lung disease if inhaled. Beryllium is NOT radioactive.

Only a small percentage of the human population has the potential to be affected by beryllium. If you are reading this information, you are not expected to have any exposures. This information is for your general awareness and you will be given additional information if you are assigned to work in potential exposure areas.

Normal operations and maintenance do not release beryllium into the air. When there is a chance of releasing beryllium, exhaust systems are used if possible to capture the dust at the point of generation. Respirators are sometimes required if exhaust systems cannot be effectively used.

Pantex has also identified facilities with beryllium contamination from past operations. All active facilities that were previously contaminated have been cleaned to allowable levels as required by federal regulation for a safe workplace. These facilities have been released for normal operations and maintenance. Any demolition or other modifications to these facilities require a beryllium work permit which will specify protective equipment and controls.

Beryllium Medical Surveillance Program
The Pantex Occupational Medicine Department (OMD) offers beryllium testing (called Be-LPT) to anyone who feels they have been exposed to beryllium. The beryllium test is a voluntary blood test used to identify individuals who have acquired a sensitivity or allergy to beryllium.

For questions about beryllium issues or work place monitoring, contact Industrial Hygiene at (806) 477-4209 or (806) 477-5958. For questions about medical testing for beryllium contact Occupational Medicine at (806) 477-5993.

Counterintelligence at Pantex

Points of Contact

Michael Lowe, Senior CI Officer (806) 477-5361
Amanda Hammer, Deputy Senior CI Officer (806) 477-5312
Bruce Johnston, Cyber CI Officer (806) 477- 3631
Michelle Abell, CI Awareness Coordinator (806) 477- 5374

To mitigate the threat to Pantex employees from both insider and foreign collection attempts, the DOE implements a required reporting system. If you, or a fellow Pantex employee experience any of the following, you must report it to the Pantex Field Office:

- All Foreign travel – this includes embassies or consulates in the U.S.
- Any substantive professional, personal, or enduring financial relationship with sensitive country foreign nationals
- Any contacts with foreign nationals who make requests that could be attempts at exploitation or elicitation
- Requests for unauthorized access to classified or otherwise sensitive information
- Unusual solicitations (anyone of any nationality)
- Anomalies (behavior that is inconsistent with the expected norm)

Additional information can be obtained from your Pantex Field Office and the Counterintelligence Web Site, located on the Pantex intranet. The Pantex Counterintelligence Team is here to support national security initiatives and encourages each employee to report any suspicious activity.

Emergency Preparedness

Points of Contact (including Emergency Numbers)

Operations Center	(806) 477-5000 (24 hrs.)
Emergency Services Dispatch	(806) 477-3333 (24 hrs.) for Fire or Medical Emergency
Radiation Safety	(806) 477-5555 (24 hrs.)
Security	(806) 477-3922 (24 hrs.)

Although most of the Pantex emergency planning and emergency preparedness responsibilities are addressed by the Emergency Management Department, emergency preparedness is part of everyone's job. If there is an emergency, site-level drill or exercise, you should participate by responding appropriately for the event.

As a visitor/contractor to the plant, your Point of Contact (POC) is the person/group that is sponsoring your visit. Questions regarding emergency procedures or protective actions can be addressed by your POC or immediate job supervisor. If you are under escort by a Security Police Officer, the officer will provide direction for protective actions.

Individual Responsibilities

It is your responsibility, regardless of your employer or contracting tier, to take appropriate protective actions when you discover, or receive a report of, an unsafe condition. These responsibilities include, but are not limited to:

- Take actions to ensure your safety.
- Warn other personnel in the immediate area of the unsafe condition.
- Take actions to isolate the unsafe condition, if appropriate.
- Notify your POC/supervisor and the appropriate Plant emergency services of the unsafe condition.
- Assist co-workers and other personnel with implementation of protective actions, if necessary.

- Follow directions provided by emergency response personnel or as communicated by:
  - ✓ Public Address (PA) announcement
  - ✓ Alpha-numeric page
  - ✓ Two-way radio
  - ✓ Outdoor warning sirens activation (personnel should seek additional information as to whether the sirens were activated for severe weather or a hazardous materials release).

Announcements that are precursors to additional potential weather warnings.
While the above-mentioned notification systems should provide warning to the vast majority of plant personnel and visitors, each individual must exercise common sense and general safety awareness. For example, if you are working outdoors or preparing to work outdoors with a storm approaching and you are not aware of any weather warnings, contact your POC/supervisor or the Operations Center, extension 5000, to confirm any weather warnings that might be in effect at the current time.

The following warnings (except for the tornado warning) have no specific personnel protective actions associated with them, beyond providing a precursor to additional potential weather warnings. However, all personnel should use caution when going/working outdoors and contact your supervisor/POC for further direction.

- "Lightning Warnings are in effect" - Lightning strike within 35 miles of the Pantex Plant.
- "Lightning Warnings with Personnel Safety Conditions are in effect" - Lightning strike within 10 miles of the Pantex Plant.
- "Severe Weather Warning for High Winds is in effect" - The National Weather Service (NWS) has issued a "High Wind Warning" for an area that includes the Pantex Plant.
- "A Severe Weather Warning with Personnel Safety Conditions for High Winds is in effect" - weather information source(s) indicates 50+ mph sustained or gusty winds at or near the Pantex Plant.
- "The National Weather Service has issued a Severe Thunderstorm ****Watch*** - Plant personnel should remain alert for possible severe weather warnings." The NWS has issued a Severe Thunderstorm Watch for Carson County.
- "A Severe Thunderstorm ****Warning*** is in effect". All plant personnel should remain indoors - The NWS issues a "Severe Thunderstorm Warning" for Carson County or any of the eight surrounding counties.
- "The National Weather Service has issued a Tornado ****Watch.*** Plant personnel should remain alert for possible severe weather warnings." - The NWS has issued a "Tornado Watch" for Carson County.
- "A Tornado ****Warning*** is in effect. All plant personnel Seek Shelter from Severe Weather immediately. Cease operations, cease transportation activities, and place materials in a safe and stable configuration." - The NWS has issued a Tornado Warning for Carson County or any of the eight surrounding counties or there is a report of a tornado, funnel cloud, or rotating wall cloud near the Pantex Plant by Plant personnel. (Seek Shelter from Severe Weather procedures will be discussed in the protective actions section.)

Definitions of NWS, watch and warning:

Watch–a watch is used when the risk of a hazardous weather has increased significantly, but its occurrence, location, and/or timing is still uncertain. It is intended to provide enough lead time so that those who need to set their plans in motion can do so.

Warning—a warning is issued when hazardous weather is occurring, is imminent, or has a very high probability of occurring. A warning is used for conditions posing a threat to life or property.

Protective Actions

Protective actions may be necessary in the event of emergency. The most prevalent protective actions for personnel at the Pantex Plant are:

- Avoid the Area
- Shelter for Hazardous Material Release
- Shelter for Severe Weather
- Shelter for Security Event
- Evacuation

These actions may be used individually or in combinations, as the situation warrants.

Shelter for Hazardous Material Release

Shelter-in-Place for Hazardous Material Release is a standard protective action to protect personnel from an airborne hazardous material release (either radiological or chemical). Ask your supervisor or point of contact if you need more information. If you are directed to Shelter-in-Place for Hazardous Material Release:

- Move indoors (if outdoors).
- Move to the innermost area of the building or structure (put as many barriers as possible between you and the outside environment).
- Close exterior doors and windows.
- Close as many interior doors and windows within the building as possible.
- Turn off and cover exhaust fans (laboratory hoods, bathroom vent fans, kitchen fryer hoods, etc.), if possible.
- Turn off air conditioners, heaters, and air-handling units that draw in outside air, if possible.
- Refrain from eating, drinking, smoking, applying cosmetics, using tobacco products or chewing gum. Remain inside until either an "All-Clear" message or other instructions are received from the Operations Center or your supervisor.
- If you are in a vehicle and need to Shelter-in-Place for Hazardous Material Release, roll up windows and close vents that draw in outside air (including heater and air conditioning vents). Proceed to a safe area that is upwind of the incident area.
- ***Personnel with Medical Conditions*** If you have a pre-existing medical condition and are required to take medication during a Shelter-in-Place for Hazardous Material Release emergency, be sure you follow these guidelines prior to taking medicine or injections:
  - ✓ Wash your hands, face, and/or the injection area.
  - ✓ Proceed with administering of medication.
  - ✓ Report to the Occupational Medicine Department after termination of the emergency protective action.

Shelter for Severe Weather

Seek Shelter from Severe Weather is the protective action taken to protect personnel from the effects of severe weather. Employees and visitors are directed to seek the best shelter available in the amount of time available. To assist in making this decision, a sampling of Plant structures is listed below by general type and in order of declining level of protection:

- Sturdy or rugged buildings like 12-130, 12-37, 12-75, 12-116, bays or cells ***(highest level of protection)***
- Brick buildings without windows
- Brick buildings with windows
- Cinder block buildings
- Metal buildings
- Temporary buildings and/or modular trailers ***(lowest level of protection)***

If time permits, move to a more substantial building. However, it is safer to go to the center of a modular trailer than to be caught outdoors by a tornado while trying to get to a more substantial building.
If inside a building, the safest place is on the lowest level, in a small room in the interior portion of a building, away from all exterior doors and windows. Put as many walls as possible between you and the outside of the building to provide additional protection. If you cannot get to the lowest floor, center hallways are often the most reinforced part of a building.
Once you are in the safest location available:

- Protect yourself under a sturdy object, such as a heavy table or under stairs (modular office furniture is not suitable).
- Hold onto the sturdiest object available.
- Remain in place until the danger has passed and an "All Clear" message is received from the Operations Center (usually over the PA system).

Shelter for Security Event

The Shelter for Security Event protective action involves a series of protective measures implemented by the Protective Force and plant personnel to maximize the protection afforded national security assets and minimize the risk to plant personnel health and safety during an actual or potential security-related event or incident. These protective measures may be implemented individually, or in combination with other actions, to enhance the effectiveness of the Protective Force response and mitigate the consequences associated with event culmination, while limiting the exposure of plant personnel to adverse impacts.

The Shelter for Security Event protective action may be specific to an area or event. Subsequently, plant personnel must be attentive to public address (PA) announcements, pager messages, and instructions from Security personnel or other emergency responders, and implement the directed actions as quickly as possible.

Response:

- Stop work.
- Secure classified materials/systems/repositories.
- Cease operations, cease transportation activities, and place materials in a safe and stable configuration. Report to, or remain at, your designated shelter location. (Shelter for Security Event may be applied to a building/facility, zone, or the entire plant.)
- Implement personnel and/or material accountability if directed by the OC or emergency response personnel.
- Implement Deny Access protective measures, if applicable to your work location.
- Restrict movement in ramps between security zones or the entire plant.
- Secure access to shelter location, if possible.
- Stay clear of doors and windows.

- Contact the Operations Center, (806) 477-5000, to report suspicious personnel or activities.
- Evacuate a building/facility, zone, or the entire plant at the direction of emergency response personnel.

Building Evacuation

You may need to evacuate an area as result of emergency or as otherwise directed by a supervisor, Building Manager or PA announcement. If you are in another area of the Plant not affected by the building evacuation, then you should remain clear of the evacuated area and evacuation routes.

If evacuation is required:

- Evacuate the building using the safest and fastest route possible, avoiding the area of the emergency condition to the greatest extent possible.
- Travel to the evacuation destination (*muster station*, an alternate on-site location, or an off-site location) designated by emergency responders.
  - ✓ ***A muster station*** is a specified location that is a safe distance and direction from the evacuated emergency scene. A muster station provides instructions on how to respond to a specific emergency, and a means of receiving and transmitting information. You will find maps for muster stations in most buildings on site. If your assigned muster station appears not to be in a safe location during an evacuation, immediately proceed in a safe direction and manner to another muster station and promptly report your location to the Operations Center, (806) 477-5000.
- Follow directions of Security Police Officers (SPOs), Firefighters, other emergency responders, or supervisors.
- Contact the OC at (806) 477-5000, advising the Plant Shift Superintendent (PSS) of the emergency condition, evacuated location, any emergency assistance required (i.e. injuries), any unaccounted for personnel from the evacuated location, and any other pertinent information.
- Do not attempt to reenter an evacuated building. Initial emergency responders are responsible for controlling access to the evacuated area.
- Follow the instructions posted or provided by the PSS, Security Police Officers (SPOs), firefighters, other emergency responders, or supervisors.
- Contact Radiation Safety at (806) 477-5555 if you evacuated because of a tritium alarm.
- Complete a PX-970 and provide the information to emergency responders and/or the OC.
- Remain at the muster station until given the all clear or otherwise directed by emergency response personnel or other competent authority.

Specific evacuation routes are not spelled out, because they are dependent on the incident, its location, and the current meteorological conditions.

Personnel Accountability

Personnel Accountability is a critical step in the protective action process, especially in conjunction with evacuation from an impacted facility. The objective of accountability procedures is to ensure that search, rescue, and/or assistance efforts can be initiated promptly to provide for the safety of building/facility personnel who may be injured, trapped, or unaware of the emergency condition. Additionally, a timely and accurate accountability of personnel can prevent the initial emergency responders (i.e. firefighters) from conducting a needless, and potentially hazardous, search and rescue mission.

- Muster Station Accountability - In the event of a building evacuation, muster stations have been identified for specific zones and buildings to allow for evacuated personnel to have a pre-designated location to report so that

personnel accountability may be performed. Once at the muster station, personnel are to complete a PX-970 and submit it to the Operations Center. Building Wardens should have a general knowledge of personnel located in their facility, while Supervisors are responsible for knowledge of their personnel's whereabouts (i.e., on plant site, off site, etc.). When the PX-970 is received, the Plant Shift Superintendent (PSS) compares the personnel listed on the form to the PeopleSoft database for facility occupants to determine if personnel are missing.

- Plant-Wide Personnel Accountability - Although plant-wide accountability is not a specific program requirement, there are situations and/or strategic decisions where plant accountability information would be beneficial to the Emergency Manager. Use of Plant-Wide Personnel Accountability is initiated when an emergency situation necessitates the accountability of on-site personnel, including visitors and subcontractors; typically, in conjunction with Seek Shelter from Severe Weather or Shelter-in-Place for Hazardous Material Release protective action.

NOTE: In the event of any accountability, visitors and subcontractors to the site should always report to their POC, supervisor, or Security Police Officer (SPO) escort as well as following site requirements.

Emergency Notification

The Plant Shift Superintendents (PSSs) monitor plant safety systems, including weather-related systems, to ensure plant personnel are provided with event-specific information as rapidly as possible. In addition to issuing directions to "Seek Shelter from Severe Weather," if severe weather threatens the Pantex Plant, the PSS is responsible for issuing other protective actions, as well as the "All Clear" when emergency conditions no longer exist.

Fire Safety

If there is an indication of a potential fire, either by sight, smell, or activated alarm system, evacuate immediately. Evacuate potentially burning buildings by the nearest available exit. This reduces the potential for becoming lost in confusing and smoky conditions, overcome by rapidly developing fire, moving into the fire area, or hampering emergency response efforts.

If you are in a potentially burning building:

- If time allows, activate manual fire alarm pull station.
- Evacuate to the assigned muster station (only if the route is safe and not involved in the fire).
- Follow posted instructions, public address system announcements, or other provided directions.
- Remain at the muster station, or at a safe location away from the affected building(s), until an "All Clear" message has been issued by the Operations Center.

Environmental Management System (EMS)

Points of Contact

EMS Hotline (806) 477-2367

Pantex is committed to excellence in environmental stewardship. Your Company has adopted the Pantex Environmental Policy that establishes the basic principles for conducting work within the Pantex boundaries. You are our partner in protecting the environment while you are working here. We encourage you to look for opportunities that exceed the basic criterion of compliance, whether in waste management, pollution prevention, energy

conservation or in the use of recycled materials, to accomplish your work. Your active support will help Pantex maintain national recognition as a leading DOE/NNSA facility.

Environmental Policy

- To Excel In:
  - Implementing appropriate controls and actions to minimize environmental impacts caused by our activities, products and services;
  - Continual improvement of our protection of the environment in Plant processes, including pollution prevention and recycling;
  - Strict compliance with relevant regulations and requirements;
  - Setting and reviewing environmental objectives and targets;
  - Documenting, implementing, and maintaining the EMS;
  - Communication of this policy to all employees; and
  - Availability of the policy to the public

Pantex Environmental Programs

- Pantex has a number of program sdesigned to help us meet our responsibilites:
  - Environmental Management System
  - National Environmental Policy Act (NEPA) Program
  - Air (Emissions) Compliance Programs
  - Water Compliance Programs (Waste Water, Storm Water, Drinking Water)
  - Cultural Resource Program (History)
  - Petroleum Storage Tank Compliance Program
  - Natural Resource Management Program*
    - *Migratory birds frequently visit the Pantex site. Federal laws protect these birds, and their nests. Pantex is also home to wildlife species than can pose a nuisance. If you encounter any wildlife; please leave it and its home alone.
  - Environmental Monitoring Program
  - Waste Management Program
  - Pollution Prevention/Waste Minimization Program
  - Environmental Remediation Program**
    - **Pantex Plant has analyzed and identified 254 areas of historic solid waste management as “Solid Waste Management Units” (SWMUs). Any soil disturbance (for example, digging, trenching, etc.) is subject to a SWMU Interference Notification Permit that must be approved by the Texas Commission on Environmental Quality.
  - Site Sustainability Performance Program

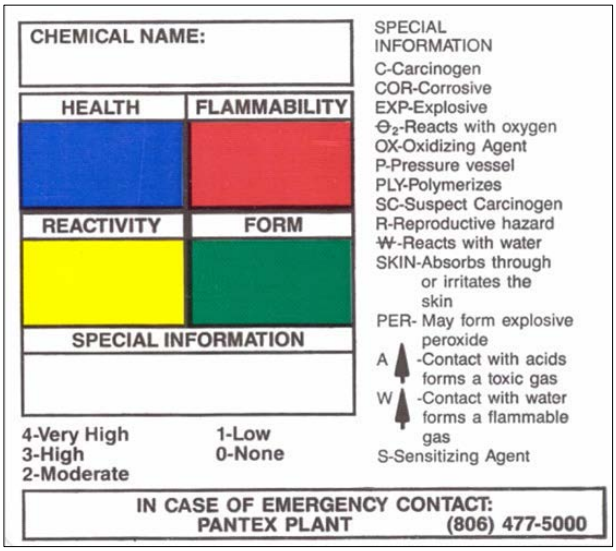
Spill Prevention and Control

Pantex maintains a plan for spill prevention and control. When a spill is observed, the Pantex Operations Center is notified as a central point of command for the activity.

Energy Management

The vision of Pantex Energy Management is to provide sustained and superior energy management services, and to position Pantex to meet NNSA energy requirement needs through 2025 and beyond. Energy Management's mission is to incorporate renewable energy and energy efficiency technologies site-wide.

Hazardous Chemicals



Point of Contact

Thorban Weaver (806) 477-5933

At Pantex, hazardous chemicals are labeled with a Plant-specific label. The hazards criteria on the Pantex label vary slightly from the hazards on the National Fire Protection Association (NFPA) label.

Visitors and contractors must not bring any hazardous chemicals onto the Plant site without prior approval from Hazard Communication. When a chemical has been approved for use, the unused portion must be removed from the site when work is completed.

If a pregnant female reports her pregnancy to her supervisor, and the supervisor is unable to determine the reproductive hazards of the chemicals with which that employee works, they may send a list of chemicals, with Safety Data Sheets (SDS), to the Hazard Communication Group (HAZCOM) for analysis. HAZCOM and Industrial Hygiene will do the evaluation and return recommendations to the subcontractor supervisor.

Traffic Safety

Point of Contact

Dick Prather (806) 477-6212

Pantex encompasses a fairly large area that requires driving vehicles, so traffic safety is a major concern. Always wear your seatbelt. Because of special safety requirements, it is essential to obey all posted speed limits. Park in designated areas only. Traffic monitoring is in effect.

NOTE: If any vehicle approaches you with its warning lights on, pull over, stop completely, and let the vehicle pass. Remain stopped until all vehicles in the group have passed. If you are following a group of vehicles with flashing lights, remain at least 300 feet behind. Never attempt to pass a convoy of vehicles or any vehicle with flashing lights!

You may encounter material moves within the ramps. Be alert. A Walker/Spotter, wearing an orange/red vest, escorts material being moved by forklift. If a material move is approaching, stop and move as far to the side of the ramp as possible. Remain there until it has passed. Remain at least 25 feet behind. Always follow the directions of the Walker/Spotter.

Warning Signs

Point of Contact

Dick Prather (806) 477-6212

As you move around the Plant, you may notice any number of warning signs. Heed them. Warning signs and barricades are common around construction sites, so be especially careful near these areas. Never enter a construction area without both authorization and the proper safety equipment. Never violate a barricade.

Footwear Policy

Point of Contact

Thorban Weaver (806) 477-5933

Proper footwear is a significant aspect of the Pantex Dress Code and is vital in meeting our internal safety goals. Employees should be aware of the role their footwear plays in minimizing injuries and promoting safety at work.

Pantex is an industrial worksite with great variation in quality of walking surfaces. All employees, regardless of the nature of their work, may encounter smooth surfaces, gravel surfaces, and/or uneven surfaces during the course of their work each day. All employees must wear appropriate footwear, as prescribed by safety requirements. This may include safety shoes and other personal protective equipment as required for employees working in operating areas, such as bays, cells, craft shops, labs and warehouses.

Employees working in areas where safety shoes are not required should remember that Pantex is an industrial site and wear adequate footwear. Adequate footwear, as defined in this policy, shall meet the following minimum criteria:

1. The entire foot shall be enclosed.
2. Shoe uppers shall be of leather or a comparable material.
3. The material shall be of sufficient strength and firmness to minimize potential for injury from a falling object.
4. Soles shall be of sufficient thickness to prevent penetration of metal particles, and shall be of leather or oil resistant material, i.e., rubber or neoprene.
5. Height of the heel shall not exceed two inches.
6. Diameter of the heel shall be at least one inch at the tread surface.

Footwear such as sandals, open heels, open toes, spiked heels and platform soles are considered unsafe and shall not be worn.

Integrated Safety Management (ISM)

Point of Contact

F.W. George, Jr. (806) 477- 6801

CNS is committed to maintaining robust environmental, safety, and health programs, and has established safety as the first imperative of the corporation. The CNS ISM Program, that also incorporates applicable 10 CFR 851 Worker Safety and Health Program requirements, is outlined in CNS MNL-352254.

In light of the many diverse Pantex work hazards, CNS commits to perform all work safely, in a manner that strives for the highest degree of protection for the public, the workers, and the environment. In addition, CNS seeks continuous improvement to sustain excellence in the quality of all Pantex processes and products.

To achieve these goals, CNS has adopted the following ISM Principles and Core Functions, which are reflected in policies and procedures. CNS managers and supervisors are expected to incorporate these principles into process documents, work instructions, manuals or other management controlled documents that control work activities. While these principles apply to all work, the exact implementation of these principles is flexible and can be tailored to the complexity of the work and the severity of the hazards and environmental risks.

ISM Guiding Principles

1. **Line Management Responsibility for Safety**
   Line management is responsible for the protection of the public, the workers, and the environment. More specifically, CNS line managers are responsible for integrating ES&H into work, and for assuring active communication up and down the management line and with the workforce.

2. **Clear Roles and Responsibilities**
   Clear and unambiguous lines of authority and responsibility for assuring safety shall be established and maintained at all organizational levels within CNS and its subcontractors. At CNS-Pantex, this principle is manifested in contract language, position descriptions, work authorization documents, and other agreements related to ES&H.

3. **Competence Commensurate with Responsibilities**
   Personnel shall possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities. CNS management will take steps to assure that the appropriate depth and breadth of technical talent in ES&H is available, and that CNS has in place the means for periodically evaluating competencies. Competence includes training, experience, and fitness for duty.

4. **Balanced Priorities**
   Resources shall be effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, workers, and the environment shall be priorities whenever activities are planned and performed.

5. **Identification of Safety Standards and Requirements**

Before work is performed, the associated hazards shall be evaluated and an agreed-upon set of standards and requirements shall be established which, when properly implemented, will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

The level of the hazard dictates the level of formality used to analyze the hazards and to establish controls. Pantex uses the facility hazard classification process to determine the level of formality required to address the hazards associated with each Pantex operation. Safety standards and requirements are currently flowed into the contractual requirements.

6. **Hazard Controls Tailored to Work Being Performed**
   Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and associated to the hazards. CNS recognizes that tailoring requires judgment to be exercised at the appropriate decision level.

7. **Operations Authorization**
   The conditions and requirements that must be satisfied for operations to be initiated and conducted shall be clearly established and agreed upon. The level of formality for authorizing operations is dependent on the level of hazard and the program requirements. Operations authorization is maintained using the change control process to maintain the safety basis authorized by NNSA.

ISM Core Functions

ISM is implemented through the following ISM Core Function framework which assures work processes at the activity, facility, and site levels, methodically and formally assess hazards and implement appropriate controls to mitigate any potential negative consequences.

1. **Define the Scope of the Work**
   Missions are translated into work. Expectations are set and tasks are identified and prioritized. Then resources are allocated.
2. **Identify and Analyze the Hazards**
   Hazards associated with the work are identified, categorized, analyzed, and communicated to the workers.
3. **Develop and Implement Hazard Controls**
   Controls to prevent/mitigate hazards are identified, the safety envelope is established, and controls are implemented.
4. **Perform Work within Controls**
   Readiness is confirmed and work is performed safely.
5. **Provide Feedback and Continuous Improvement**
   Feedback information on the adequacy of controls is gathered; opportunities for improving the definition and planning of work are identified and implemented; line and independent oversight is conducted.

Explosive Hazards & Identification

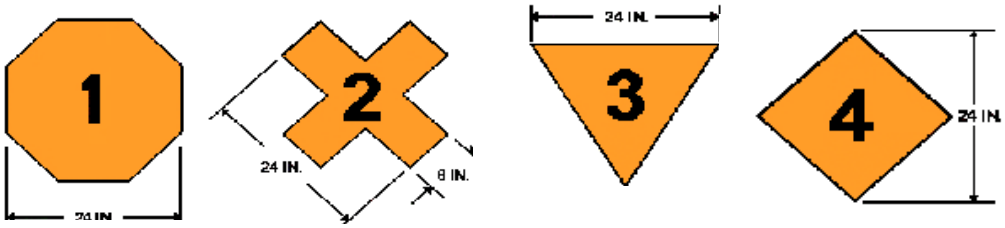
Point of Contact

John Taylor (806) 477-6392

Pantex performs a significant amount of work involving explosives. Regardless of your job position or work station location, while you are physically at Pantex, you will be exposed to potential explosive hazards should there be an explosives accident.

Explosive hazards consist mainly of what we call “blast” and “fragment.” Blast, (overpressure) can cause damage to eardrums, the sinuses, and the lungs. Fragments can cause impact or penetration damage to the body. The seriousness of these injuries is dependent on the amount and type of explosives, structures, and one’s specific location in relation to those explosives.

Explosive buildings and areas at Pantex can be identified by the presence of large orange placards or fire symbols. This is what they look like:



Shipments of explosives can be identified by diamond-shaped orange placards such as these:

Differing Professional Opinions (DPO) Process

Point of Contact

F.W. George, Jr. (806) 477-6801

CNS is committed to ensuring that all of our employees and subcontractors are free to raise concerns, complaints and questions without fear of intimidation, reprisal or retaliation. In keeping this commitment, CNS maintains a variety of well-established internal employee concern and complaint processes, including an internal DPO process outlined in CNS MNL-352222.

CNS employees and subcontractors are encouraged to first report concerns to their immediate supervisor, any level of organizational management or use established internal concern or complaint resolution systems in a good faith effort to resolve issues at the lowest possible level of the organization. In certain instances, an employee or subcontractor may

decide that routine internal processes did not or cannot adequately resolve a differing professional judgment, opinion or technical concern. Our internal DPO process exists for use in these cases. Our DPO process is intended to supplement, not replace, existing internal processes designed to address employee concerns and complaints. Our DPO process is not intended to be the first step used to report concerns or to be used as a way around other internal processes. If a decision is made to initiate the CNS DPO process, employees and subcontractors must submit form UCN-22782.

In addition, Department of Energy (DOE) Order 442.2 establishes DOE's DPO process and associated requirements. CNS employees and subcontractors also have the right to report environment, safety and health technical concerns that have not been resolved through routine work processes through the DOE's DPO process.

DOE's DPO process can be found in Attachment 2 of DOE Order 442.2 and on the DOE's DPO webpage located at: http://energy.gov/ehss/doe-differing-professional-opinions.

The following types of concerns are generally not within the scope of the CNS DPO process:

- Concerns that are administrative in nature.
- Personnel concerns, such as performance elements, evaluations and ratings, or work assignments by management.
- Contract concerns such as cost/schedule performance, fees, or contract negotiations.
- Concerns related to collective bargaining.
- Concerns that shall be addressed through the grievance process or personnel appeal procedures.
- Concerns that relate to fraud, waste, or abuse, as these issues must be referred to the Office of Inspector General.
- Concerns submitted anonymously or for which confidentiality is requested.
- Concerns that have been considered and already addressed under this process or another internal evaluation process, such as Causal Factors Analysis or similar evaluation process, unless significant new information is available.

CNS employees and subcontractors may submit these types of concerns through the CNS Employee Concerns Program or other internal concern/complaint processes.

General Employee Radiation Training (GERT)

Points of Contact

Bill Hayes (806) 477-5243
Gary Britten (806) 477-4428

The material presented in the following section is General Employee Radiation Training (GERT) for subcontractors. This training material is provided to personnel who will require ENTRY into posted radiological areas or who could potentially receive occupational radiation exposure. This means that you may be permitted to routinely enter radiological controlled areas, encounter radiological barriers, postings, radioactive material, or radiation producing devices.
If you will be using, handling, moving or operating any radioactive material or generating radioactive waste, additional training is required. Radiological work at Pantex requires the following training and must be completed prior to performing radiological work.

- Radiological Worker I (CR 7.06 and JT 7.10)

- Radiological Worker II (CR 7.04 and JT 7.12)

Contact your Pantex Point-of-Contact (POC) if additional Radiological Worker training is needed or you have questions concerning this information. **Table 1** shows what radiological posted areas personnel may enter with GERT training. Several radiological posted areas can be entered without an ESCORT while other areas **require a radiological escort** as well as completion and approval of the PX-5263 *Checklist for Subcontractor/Visitor Access to Pantex Plant*.

The need for dosimetry services may be required to enter some posted radiological areas. If a dosimeter is required, it can be requested by completing a PX-2868, *Dosimetry Information Form*. If there are any questions, call (806) 477-5243 or (806) 477-5110.

GERT is provided to personnel entering radiological controlled areas at Pantex and will **NOT** be performing work with radioactive materials. Individuals are responsible for observing and obeying radiological postings and work procedures.

Table 1. Types of Posted Areas GERT Allows Entry

GERT Allowed Entry	
Posted Radiological Areas	**Pantex**
Controlled Area	Yes—Unescorted Access
Radioactive Material Area (RMA)	Yes—Unescorted Access*
Radiation Area (RA)	Yes—ONLY under Escort & RSD Approval*
High Radiation Area (HRA)	No
Very High Radiation Areas (VHRA)	No
Airborne Radioactivity Area (ARA)	No
Radiological Buffer Area (RBA)	Yes—ONLY under Escort & RSD Approval*
Contamination Area (CA)	Yes—ONLY under Escort & RSD Approval*
High Contamination Area (HCA)	No
Soil Contamination Area (SCA)	Yes—NO Soil Disturbance*
Fixed Contamination Area (FCA)	Yes—NO Disturbance of Fixed Contamination*
***No handling, using or touching of Rad Material**	

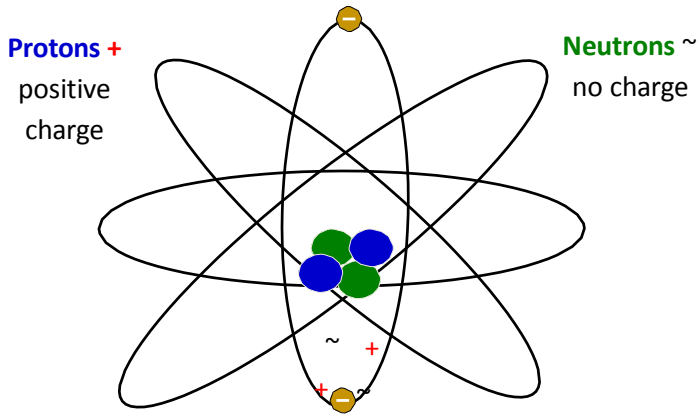
After completing GERT, you will be able to identify:

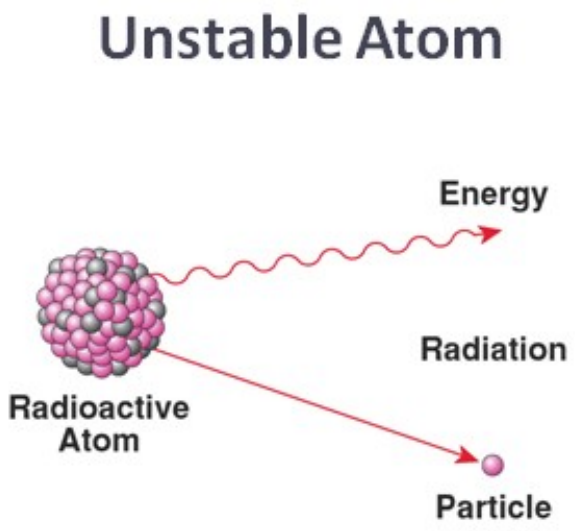
- Hazards associated with radiological areas and radioactive material,
- Limitations as a trained general employee during access to or work in Controlled Areas
- Responsibilities for complying with radiological requirements, including his/her expected response to abnormal radiological events or emergencies.

Basic Radiation/Radiological Materials Fundamentals, and Radiation Protection Concepts

All matter is composed of atoms. Atoms are composed of three basic particles: protons, neutrons, and electrons. As shown, protons have a positive charge, electrons a negative, and neutrons have no charge. Most atoms contain a ratio of neutrons and protons that renders them stable. Stable atoms do not emit excess energy. Unstable atoms need to rid themselves of excess energy. This energy is called radiation. Simply stated, radiation is energy emitted through space in the form of particles or rays.

Stable Atom





There are two types of radiation.

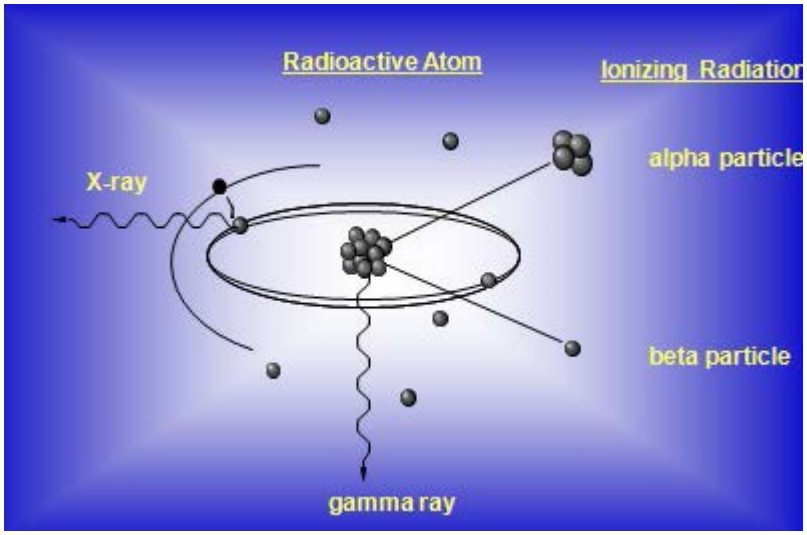
1. Ionizing
2. Non-Ionizing

The difference between the two types is their wavelength, frequency and their origin. Frequency is defined as the amount of energy the wave can carry. The shorter the wavelength, the higher the energy. Radio waves have very large wavelengths, measured in kilometers, and microwaves have shorter wavelengths, measured in centimeters. The origin of radiation can be from the nucleus and/or the orbiting electron. The nucleus produces gamma and particulate radiation and the outer electron produce electromagnetic radiation.

Non-ionizing radiation does not have enough energy to remove an electron. Even though non-ionizing radiation is capable of causing biological damage, it is not a major radiological concern. Types of non-ionizing radiation include:

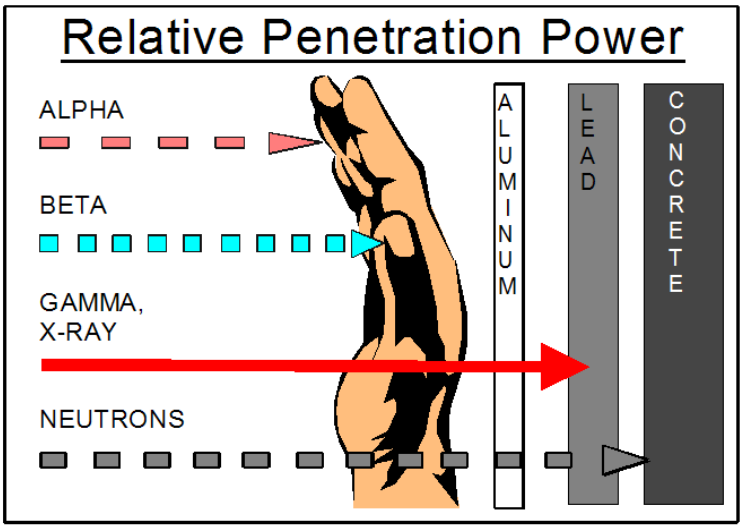
- Radio waves
- Microwaves
- Infrared
- Visible Light
- Ultraviolet Light

Ionizing radiation <u>has enough</u> energy to remove electrons. Ionizing radiation is the greatest concern. Unstable atoms contain too much energy and, therefore, try to become stable by releasing their excess energy in the form of particles or rays. Remember, this release of energy is known as radiation.



There are four basic types of ionizing radiation:

- *Alpha particles*
- *Beta particles*
- *Neutron particles*
- *Gamma/X-rays or waves*



Alpha particles can be stopped by your layer of skin or a sheet of paper. Beta particles have more energy and can be stopped by material such as aluminum or plastics. Gamma/X-rays must be shielded by extremely dense material like lead or tungsten. Neutron shielding must contain large hydrogen rich material, such as water or concrete.

What is the difference between Radiation and Radioactive Contamination?

Contamination is radioactive material in an unwanted place or location. Exposure to radiation does NOT result in contamination of a worker. Only if a worker comes into contact with radioactive contamination would the potential exist for the worker's skin or clothing to be contaminated. Simply put, ***Radiation*** is energy and ***Contamination*** is unwanted radioactive material in a location. For example, radiation is like the heat you feel from a campfire; contamination is like glowing embers from the camp fire landing on your clothes.

Sources of Radiation

Annual Radiation Dose from Other Sources

	mrem/year
Smoking 20 cigarettes/day	1300
Radon in homes	200
Medical exposures (Diagnostic/nuclear medicine)	~500
Terrestrial radiation	30
Cosmic radiation	30
Round trip US by air	5
Building materials	4

Throughout time, people have been exposed to radiation. We are exposed to naturally occurring and man-made radiation from our environment and even from materials inside our bodies. The average U. S. annual radiation dose to a member of the general population is about 620 mrem per year. The 620 mrem per year is a combination of both natural background and man-made sources of radiation. The unit "mrem" is the basic unit of measurement used to estimate the amount of biological injury that has occurred to our cells from radiation.

1 rem = 1,000 mrem

Natural background radiation is the second largest contributor (about 310 mrem per year) to radiation doses. The main sources of naturally occurring radiation are:

- Radon – a gas from naturally occurring Uranium in the soil - 37%
- Cosmic/Space radiation - from the sun and outer space - 5%
- Internal - materials present in our bodies such as Potassium-40 ~5%
- Terrestrial radiation - materials in the earth's crust such as rocks and soil - 3%

Man-made sources of radiation contribute to the remainder of the annual average radiation dose. Man-made sources include the following:

- Medical uses such as x-rays and nuclear medicine ~48%.
- Consumer products such as smoke detectors, tobacco products, building materials - 2%

What are the ***Sources of Radiation at Pantex?***

- Plutonium
- Uranium
- Tritium
- Thorium
- Radiation Generating Devices (RGDs)
- Sealed Sources

Risks of Exposure to Radiation and Radioactive Materials, Including Pre-Natal Radiation Exposure

Risks in Perspective

Radiation comes from background and man-made sources. As stated above, we receive approximately 620 mrem per year from background radiation. This is separate from occupational exposures that may be received on the job. The potential risks from occupational exposure can be compared to other risks we encounter every day. The risk associated with occupational exposures at Pantex is very small and is considered acceptable when compared to health risks in other

occupations (for example, being a coal miner or a construction worker). The Department of Energy's (DOE) whole-body radiation dose limit for general employees is 5,000 mrem/year. However, Pantex has set Administrative Control Levels (ACL) well below the DOE limit.

For Subcontractors the Pantex ACL for occupational exposure is 200 mrem per year. It is each person's responsibility to comply with Pantex's ACL. If you suspect your Administrative Control Level of 200 mrem is being approached or exceeded, you should notify your Pantex point-of-contact or Radiation Safety immediately.

Although there is no scientific evidence for health effects from radiation doses below the annual DOE limit (5,000 mrem/year) for occupational exposure, we assume that any exposure, no matter how low, has an associated risk of health effects. As shown, airline flight crewmembers receive an occupational dose of 1,000 mrem/year. Nuclear power plant workers receive 700 mrem.

Health Effects

Biological effects from large doses of radiation may occur in the exposed individual or in the future children of the exposed individual. There is scientific evidence of health effects (cancer) from radiation doses well above the annual limit for occupational exposures (greater than 10,000 mrem).

Dose for Various Occupations

Occupations	mrem/year
Airline flight crewmember	400-600
Nuclear power plant worker	300
DOE/DOE contractors	75
Medical personnel	70

DOE HDBK 1131-2007 (Reaffirmed 2013)

Types of Exposure

1. Chronic Exposure

Chronic exposure refers to small radiological doses repeated over a long period of time. Examples of chronic radiation doses are occupational radiation. Although, no evidence between chronic doses is linked to cancer, we assume that any exposure, no matter how low, has a risk to health.

2. Acute Exposure

Acute exposure refers to a large dose received over a short period of time. Acute exposure doses are typically received under accident conditions, such as Chernobyl. Effects from acute doses occur soon after the event.

So what is the difference between Dose and Exposure?

- ***Dose*** is the amount of radiation absorbed by the body, which can damage the cells.
- ***Exposure*** is the amount of radiation measured in air.

Pre-natal Exposure

A developing fetus is especially sensitive to ionizing radiation because of its rapidly dividing cells. Radiation dose to the fetus may increase the chances that the child will develop conditions such as lower birth weight, slower mental growth, or childhood cancer. These effects may also be caused by many other hazards in our environment such as smoking or consuming alcohol. The risk of these effects is minimized by implementing special protective measures for the embryo/fetus. A female working on site has the option to declare her pregnancy in writing using a PX-2820 form.

Pre-natal Exposure Cont.

The form is provided to the Radiation Safety Department and the Workforce Health & Reliability Department so that they may evaluate the need for potential work restrictions. Radiation Safety does NOT review any medical records. It is typically recommended that the declared pregnant radiation worker be re-assigned so that further radiation exposure during the pregnancy is unlikely.

Benefit versus Risk

Accepting a risk is a personal matter, and each individual must weigh the benefits against the potential risk. We know that there are many benefits from ionizing radiation. However, because it may harm us if we receive too much, just like too many aspirin can kill you, we must learn to respect it and learn to work safely with and around radioactive materials.

Methods used to control radiological material through postings, signs, and labels

Radiological Controls

Radiological controls are established in order to protect individuals from exposure to radiation and intake of radioactive material. These controls include a unique identification system using certain colors and/or symbols and radiological postings.

All areas or materials controlled for radiological purposes are identified by one or more of the following:

- Signs that have the standard radiation trefoil symbol and magenta colored lettering on a yellow background. At Pantex, postings used for training purposes are ONLY black and yellow.
- Yellow and magenta rope, tape, chains, or other barriers that are used to designate boundaries of posted areas.
- Tags and labels with a yellow background and a magenta standard radiation trefoil symbol that are used to identify radioactive material. Green tags indicate that items have been surveyed and meet acceptable radiological release limits for unrestricted use.
- Radioactive material MUST be stored in a posted Radioactive Material Area (RMA) at a minimum.

Only specially-trained workers are permitted to enter areas controlled for radiological purposes. Additional radiological training is required in order to handle radioactive material.

Posted Areas GERT personnel are allowed to enter, either escorted or unescorted

Postings are used to alert personnel of potential or known radiological conditions and to aid them in minimizing exposures and preventing the spread of contamination. Below is a list of common postings that personnel could encounter. GERT trained personnel can enter several of these areas without a radiological escort, while entry into some areas require a radiological escort. Let's discuss the different areas on site and whether this GERT will permit you to unescorted entry into those areas.

Controlled Area is an area that has been established to protect individuals from exposure to radiation and radioactive contamination. Controlled Areas provide warning of the existence of/potential for a radiological hazard. This training WILL permit you to enter a Controlled Area unescorted.

Radiological Material Area (RMA) is an area where radioactive materials are used, handled or stored. At Pantex, this training WILL permit you to enter a Radioactive Material Area unescorted. This training DOES NOT permit you to touch, move, or operate radioactive materials.

Radiation Area (RA) identifies an area accessible to individuals in which radiation levels could result in an individual receiving an equivalent dose to the whole body in excess of 5 mrem in 1 hour at 30 centimeters from the source or from

any surface that the radiation penetrates. This training will NOT allow you unescorted access to this area. Entry can be allowed as long as there is an ESCORT and you have a dosimeter.

GERT trained personnel **CANNOT** perform radiological work! This means you cannot touch any radiological material, even for a second!

There are other posted radiological areas established within the Controlled Area at Pantex. GERT training WILL NOT permit you to enter these areas unless additional radiological training is completed. Some examples include:

- High Radiation Areas
- Very High Radiation Areas
- Radiological Buffer Area (RBA)
- Contamination Area
- High Contamination Areas
- Soil Contamination Area (SCA)
- Fixed Contamination Area
- Airborne Radioactivity Areas

ALARA Concepts, practices and employee responsibilities

ALARA Concept

"As Low As Reasonably Achievable" (ALARA) is a process of managing radiation exposure and is a fundamental requirement of radiation protection. ALARA is a process that is designed to control exposure to ensure workers are well below regulatory limits. The ALARA objective is to reduce doses as low as is reasonably achievable, taking into account social, technical, economic, practical, and public policy considerations. The ALARA Committee establishes annual goals; these are not regulatory limits, only goals to ensure regulatory limits are not exceeded.

There are three basic practices under ALARA that personnel may use to minimize exposures:

- Time - Reduce the amount of time spent near a radiation source.
- Distance - Stay as far away from the source as possible.
- Shielding - Utilize shielding between the workers and the source.

Correct responses to emergencies and/or alarms

Radiological Emergency Procedures

A radiological incident is unlikely. However, everyone must know the emergency procedures, just in case. Follow all instructions announced over the public address system or provided by your Escort and/or personnel in the immediate vicinity. If you see or hear an emergency alarm of any type, YOU CAN REPORT ANY/ALL ALARMS TO THE 24-HOUR OPERATIONS CENTER (806) 477-5000.

Abnormal Conditions

If you discover radioactive material where it does not belong, the following actions should be taken

1. Do not touch, handle, operate, or move the material.
2. Warn other personnel in the area.
3. Guard the area at a safe distance.
4. Call Radiation Safety at (806) 477-5555 and wait for Radiation Safety to arrive.
5. ONLY Radiation Safety can release personnel from radiological alarms.

Correct Responses to Alarms

Evacuate Immediately

Signal	Meaning	Action
Blue Light High Pitch Tone	Airborne Alpha Contamination	Exit Bay/Cell. Remove PPE in Interlock. Stand in Ramp at entrance. Send 1 person to call ext. 5000 or 5555 (Rad Safety).
Red Light Loud Bell	Airborne Tritium Contamination	Exit Bay/Cell. Remove PPE in Ramp. Continue to muster station. Do NOT interact with others. Call ext. 5000 or 5555.
Amber Light Buzzer	Trouble/Malfunction	STOP WORK. Do not exit. Call ext. 5000 or 5555
Green Light No Sound	Normal Operations	Do NOT enter if there is NO green light. Call ext. 5000.

The Radiation Alarm Monitoring System (RAMS) is the whole system that continuously monitors air. The RAMS system consists of the computer, data, Continuous Air Monitors (CAMs), and the Evacuation Alarm Unit (EAUs). CAMs are used to monitor alpha and tritium while the EAUs are the lights.

Workers are trained to evacuate within 5 minutes in the event of an accident involving radioactive material. In the event an accident with radioactive material occurs and there is no alarm, personnel should evacuate in 5 minutes or less.

Requirements of Dosimetry

Personnel Monitoring (Dosimetry)

Since radiation cannot be detected with any of the human senses, special detection devices must be used. It is possible based on the job you are going to perform and the location that the use of a dosimeter may not be necessary. Persons who enter radiation areas must obtain a dosimeter prior to entry into the area.

Thermoluminescent Dosimeters

Thermoluminescent dosimeters (TLDs) are used to measure radiation from neutrons, gamma and x-rays, and all but very low-energy beta particles. Each dosimeter contains materials that, when exposed to radiation, will capture the type and amount of radiation to which the individual is exposed. Very sensitive instruments measure this exposure, and an individual's dose is calculated from the data obtained.

NOTE: The TLD measures external occupational radiation doses and is not a shield.

Wearing Your Dosimeter

Wear your dosimeter clipped to clothing on the upper part of the body (on the torso, between the neck and the waist). Clipping your dosimeter to your belt or belt loop is acceptable. Do NOT hang your dosimeter on a neck lanyard or chain or place your dosimeter through the security X-ray machines.

Obtaining a Dosimeter

Persons who enter radiation areas must obtain a dosimeter prior to entry into the area. Dosimeters can be requested by completing a PX-2868, *Dosimetry Information Form*. If there are any questions, call (806) 477-5243 or (806) 477-5110. If you have visited or worked at another facility where you were issued a dosimeter, you will need to enter the doses received on the PX-2868, or make your best estimate, so that we can maintain a complete radiation dose history for you.

Dose Reports

Personnel are not expected to receive dose above their Pantex ACL (200 mrem/yr.). You will be mailed a radiation dose report each time your Pantex dosimeter is processed. This report will be mailed to the address provided on the PX-2868 and details radiation doses for the current calendar year and contains year-to-date and lifetime doses received at Pantex. You have the right to request, in writing, a dose report at any time.

Leaving Pantex

Return the issued dosimeter to your Pantex point-of-contact or leave it hanging on an official dosimeter storage location at the end of your visit. Only wear the dosimeter that has been assigned to YOU!

Medical Applications

Individuals who have recently been administered radionuclides for medical purposes should report their medical procedure to Pantex's Workforce Health and Reliability Department at (806) 477-3033. Radionuclide injections or ingestion for medical purposes may sound the alarm on portal monitors at the security stations and entry will not be allowed.

Lost or Damaged Dosimeters

Should you lose or damage your dosimeter, exit the controlled area and contact Dosimetry at (806) 477-4424 or (806) 477-4633 for a replacement. Your dosimeter must be either on YOU or on the STORAGE BOARD while on the Pantex site.

Summary

It is important to be aware of radiological risks and to take appropriate protective measures to minimize the risks by using time, distance, and shielding throughout your time at Pantex. Through awareness and personnel responsibility, each individual who visits Pantex can contribute to a safe work environment. If you have any questions, feel free to contact the Radiation Safety Department.

YOUR Responsibilities

Everyone has a responsibility to help maintain exposures to radiation As Low As Reasonably Achievable (ALARA). Planning work is the key to minimizing exposure and reducing dose.

- You shall acknowledge receipt of GERT by your signature on thePX-3864, and if a TLD is required, complete the PX-2868, *Dosimetry Information Form*.
- Enter only those areas that GERT training allows (see **Table 1**).
- Obey all radiological signs/postings. You shall **NOT** perform hands-on work with radioactive material.
- If issued a dosimeter (TLD), wear it clipped to your clothing between the neck and waist. (Clipped to a belt or belt loop is acceptable.)
- Do not take your dosimeter off site. (Your dosimeter is sensitive to extreme heat and excessive moisture.) Leave it hanging on an official dosimeter storage location at the end of your day.
- Utilize ALARA principles (minimum time, maximum distance, and shielding)
- Personnel should never walk in front of the area where a Tritium/Alpha alarm is going off.
- Do not enter any Radiation Areas unless Escorted.
- Be alert and report unusual radiological situations to Radiation Safety at (806) 477-5555