Nevada Site Specific Advisory Board
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Full Board Meeting Handouts for
Wednesday, July 15, 2015

Please note: For your convenience, this Table of Contents has a link to the first page of each handout.

If you just want to print certain pages, the directions are: file, print, Pages to Print, choose the radio button-Pages and enter just the pages that you want printed, then choose print

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NSSAB MEETING ATTENDANCE

Full Board Meetings

October 2014 through September 2015 (FY 2015)

Name	11/19/14	1/21/15	2/18/15	3/25/15	5/20/15	7/15/15	9/16/15	Max Terms
MEMBERS								
Michael Anderson	E	√	√	E	√	√		2020
Amina Anderson	√	√	√	√	√	E		2020
Michael D'Alessio	√	√	√	√	E	√		2020
Pennie Edmond	√	√	√	√	√	E		2020
Donna Hruska	√	√	√	√	√	√		2016
Janice Keiserman	√	√	√	√	√	√		2018
James Manner	√	√	√	√	√			2020
Michael Moore	√	√	√	√	√	E		2016
Donald Neill	√	√	√	√	√	√		2020
Edward Rosemark	√	√	√	√	√	√		2018
Steve Rosenbaum	√	√	√	√	√	√		2020
William Sears	√	√	√	√	√	E		2018
Thomas Seley	√	√	√	√	√	√		2020
Cecilia Flores Snyder	√	√	E	√	√	√		2020
Jack Sypolt	√	√	E	√	√	√		2017
James Tallant	√	√	√	E				2020
Francisca Vega	√	√	E	√	√	E		2020
LIAISONS								
Clark County	√	√	E	√	√	√		
Consolidated Group of Tribes and Organizations	√	√	E	E	E	√		
Elko County Commission	U	U	V					
Esmeralda County Commission	E	E	√	E	E	E		
Lincoln County Commission	U	U	E					
Nye County Commission	E	E	U	U	U	√		
Nye Co. Nuclear Waste Repository Project Office	√	√	√	√	√	√		
State of NV Division of Env Protection	√	√	√	√	√	√		
U.S. Natl Park Service	E	√	E	√	E	√		
White Pine Co. Commission	U	U	U					

KEY: √ = Present V=Vacant E = Excused U = Unexcused RM = Remove RS = Resign

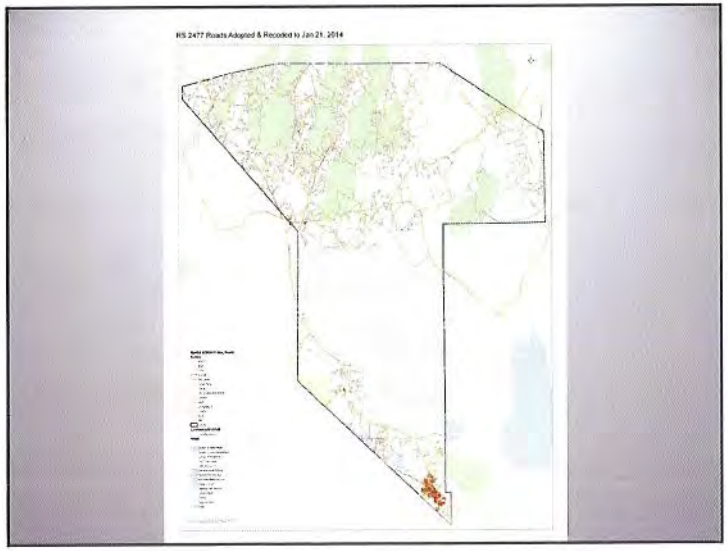
Nevada National Security Site
Site Specific Advisory Board

Presentation by
L. Darrell Lacy
Nye County Nevada
July 15, 2015

Transportation Issues

Why do we care about Transportation and Roads?

- Safety
- Economic Development
- Access to private land, mining claims, grazing and recreation
  - Nye County is 300 miles from one end to the other. We only have 7 miles of 4 lane highway but 2746 miles of county maintained roads and over 5200 miles of minor roads identified in our RS 2477 project.



Transportation Issues

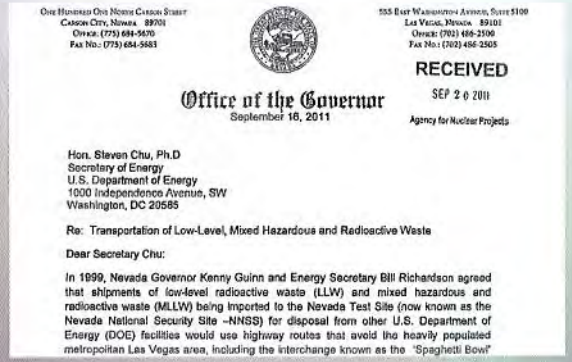
- Lack of Infrastructure to support new projects and construction
  - Growth must pay for itself
  - Private companies pay impact fees, mitigation through CUPs, SUPs or Development Agreements and sales and property taxes
  - How do government projects pay for their impacts?

Transportation Issues

- Federal Government Impacts
  - Yucca Mountain – included plans for road improvements, a new rail line with access by commercial users and PETT payments
  - NNSS – very little impact to Nye County for traffic onto Highway 95 back to Las Vegas

–BUT!

NNSS Transportation Issues



Office of the Governor

September 16, 2011

RECEIVED

SEP 20 2011

Agency for Nuclear Projects

Hon. Steven Chu, Ph.D
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Re: Transportation of Low-Level, Mixed Hazardous and Radioactive Waste

Dear Secretary Chu:

In 1999, Nevada Governor Kenny Guinn and Energy Secretary Bill Richardson agreed that shipments of low-level radioactive waste (LLW) and mixed hazardous and radioactive waste (MLLW) being imported to the Nevada Test Site (now known as the Nevada National Security Site –NNSS) for disposal from other U.S. Department of Energy (DOE) facilities would use highway routes that avoid the heavily populated metropolitan Las Vegas area, including the interchange known as the "Spaghetti Bowl"

NNSS Transportation Issues

- Waste and any other materials that avoid Las Vegas by default will come through Pahrump and /or rural Nye County on smaller two lane roads
- Recent years have has 1200 to 1500 trucks per year
- This is contrary to US DOT guidelines
- Safety?

Transportation Issues

- Nye County has commented at many forums.
- Site-wide EIS comments in 2013-Nye County has little choice other than to accept the burden of radioactive waste transport along the Highway 160 corridor through Pahrump; however, DOE should take additional measures to ensure the burden and impacts of such transportation activities are minimized. This could be done with appropriate mitigation activities including road improvements and funding for a design study of a Pahrump bypass. This is particularly true in light of SWEIS findings that the risk associated with such transportation is slightly less for what DOE called the "unconstrained case" analyzed in the SWEIS. "Unconstrained" in this instance means allowing transport to go through Las Vegas. DOE has chosen to continue with its "constrained case" meaning no transportation through Las Vegas, but routing through Pahrump instead, even though overall risk is slightly higher for routing through Pahrump as noted in SWEIS Table 5-14. The County appreciates DOE's willingness, as stated in the SWEIS, to discuss improvements that we consider necessary.

NNSS Transportation Issues

- Specific road projects – NDOT 2015 to 2018
- SR 160 phase one Clark County
- SR 372 Roundabouts Pahrump – Blagg Rd and Pahrump Valley Blvd
- SR 160 – 5 lane in Pahrump
- SR 160 – Clark County Phase 2
- SR 160 N Pahrump to 95, Johnny Curve and Pahrump Bypass on the 2018-2024 plan

NNSS Transportation Summary

- Nye County supports the various missions at the NNSS including LLW and potentially GTCC and Yucca Mountain if safe and appropriate mitigation
- Specific projects including Highway 160 from Pahrump to Highway 95 and planning for Pahrump Bypass are a high priority.
- Prior statements were that a ROD on the SWEIS and inclusion in NDOT plan were needed.

DEPARTMENT OF ENERGY

TEPP/MERRTT

Introduction

Welcome

- Instructor Introductions
- Facility Overview
- Agenda
- Handouts
- Student Introductions
- Transportation Emergency Preparedness Program (TEPP) Overview

TEPP Mission

- TEPP's mission is to ensure that federal, state, tribal, and local responders have access to the plans, training, and technical assistance necessary to safely, efficiently, and effectively respond to transportation accidents involving DOE-owned radioactive materials. To accomplish this mission, a suite of tools have been developed to aid the response jurisdictions in their readiness activities.

TEPP Training and Tools

- Modular Emergency Response Radiological Transportation Training Program (MERRTT)
  - 16 modules and supporting videos
  - Hands on exercises
  - Practical field exercise
  - Tabletop exercise
- Technician Level MERRTT (TMERRTT)
  - Designed to meet NFPA 472 Agent Specific Competencies
- Radiation Specialist
  - Designed to meet NFPA 472 Specialist Competencies

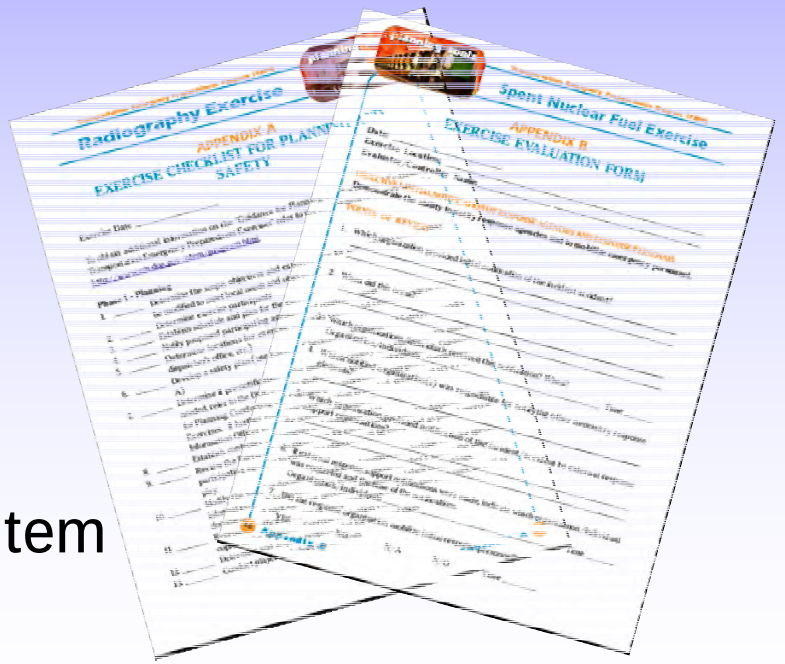
TEPP Training and Tools

- TEPP Model Procedures
  - First Responder Procedure
  - Hazardous Materials Team Procedure
  - EMS Responder Procedure for Handling a Radiologically Contaminated Patient
  - Medical Examiner/Coroner Guide for Handling a Radiologically Contaminated Body/Human Remains
  - Radioactive Material or Hazardous Materials Decontamination Procedure
  - Recovery Planning Procedure

http://www.em.doe.gov/otem

TEPP Training and Tools

- Transportation Accident Exercise Scenarios
  - Spent Nuclear Fuel
  - Low Specific Activity Material
  - Soil Density Gauge
  - Radiopharmaceuticals
  - Radiography Device



http://www.em.doe.gov/otem

DEPARTMENT OF ENERGY

TEPP/MERRTT

Radiological Basics

Module Objectives

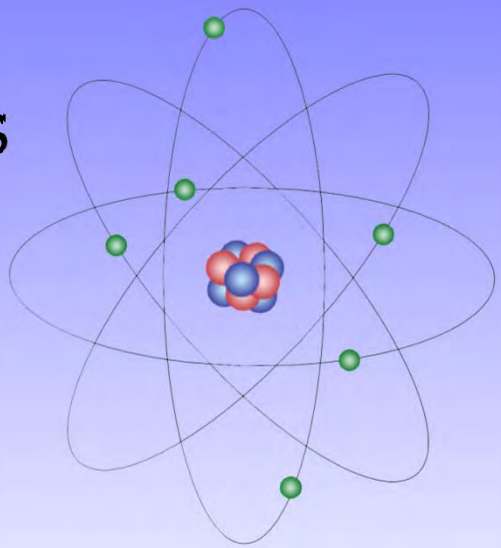
- Identify the basic components of an atom.
- Identify four basic types of ionizing radiation.
- Define ionizing radiation, radioactivity, radioactive material, and radioactive contamination.
- Distinguish between radiation exposure and radioactive contamination.

Historical Background

- In 1895, X-Rays discovered
- Stage set for the use of radiation
- Studies provide a detailed understanding of hazards and benefits of radiation

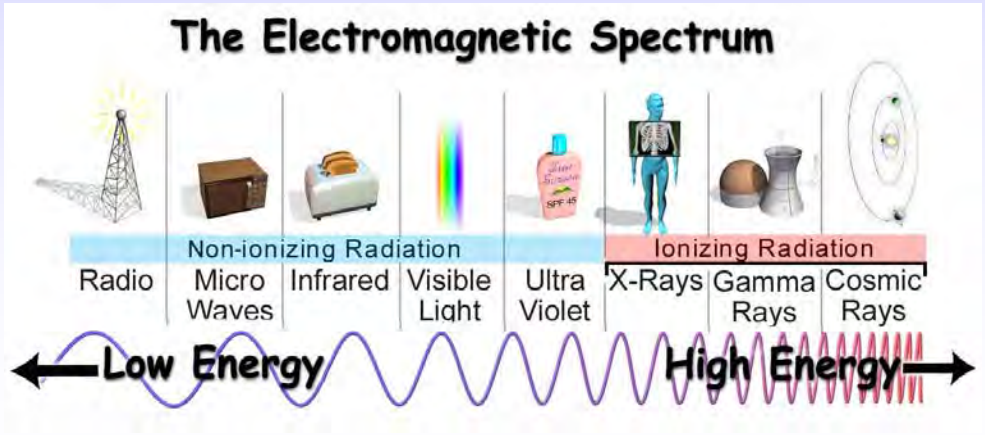
Atomic Structure

- All matter is made up of atoms
  - Protons
  - Neutrons
    - Isotopes
  - Electrons
- Not all atoms are stable
- Unstable atoms are known as radioactive atoms

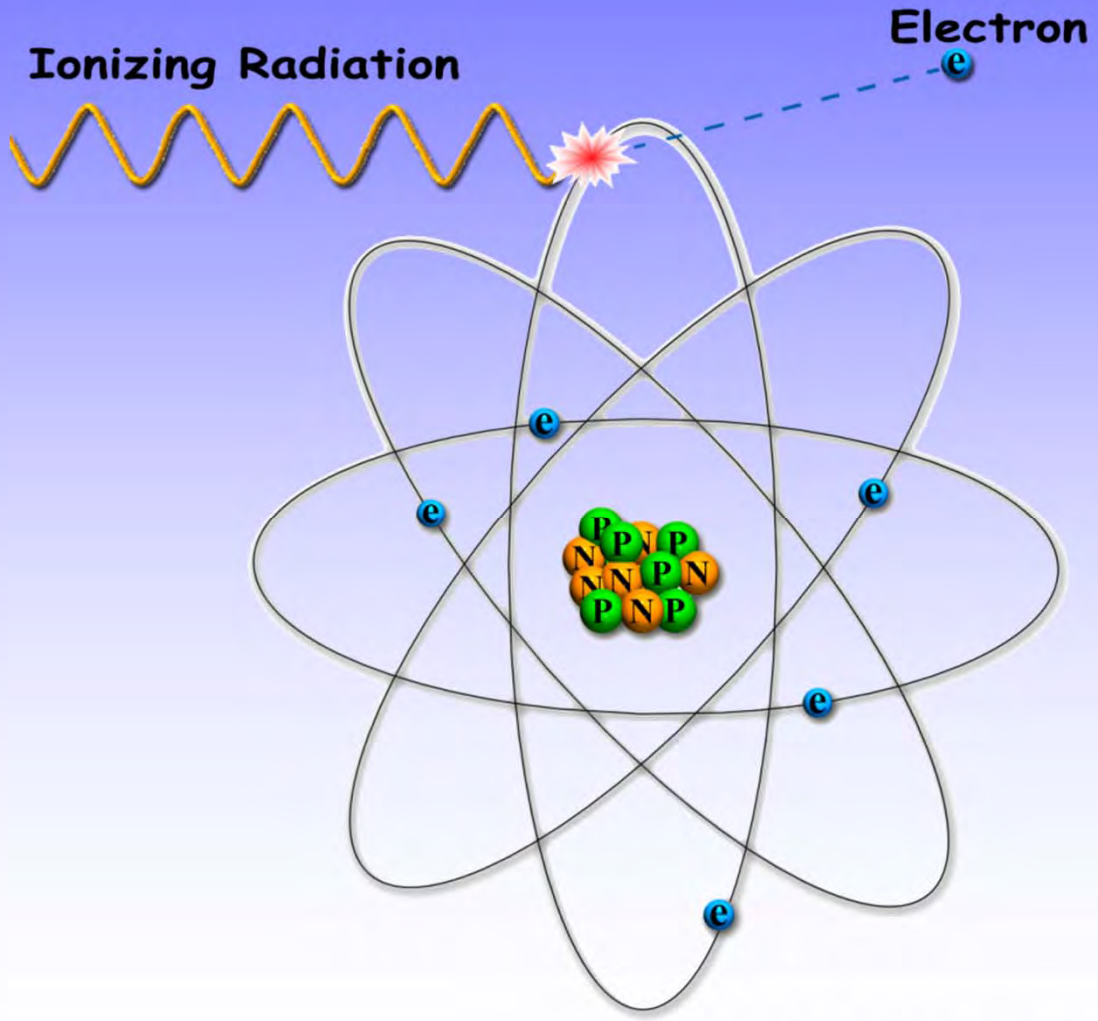


Ionizing Radiation

- Non-Ionizing Radiation
  - Visible light/heat/radio waves/microwaves
  - Does not have sufficient energy to cause ionization
- Ionizing Radiation
  - Physical change in atoms by making them electrically charged—called ionization



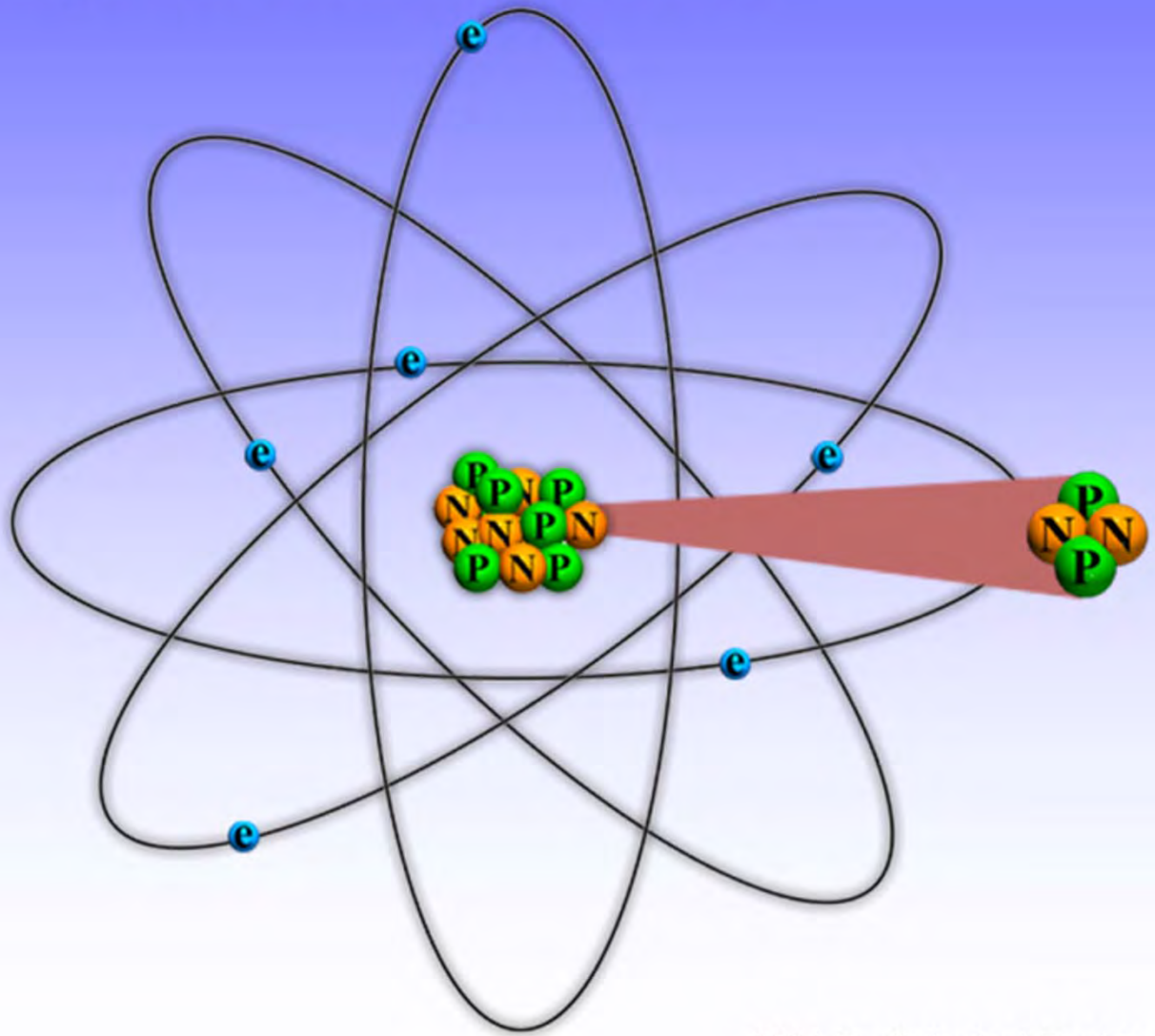
Ionization



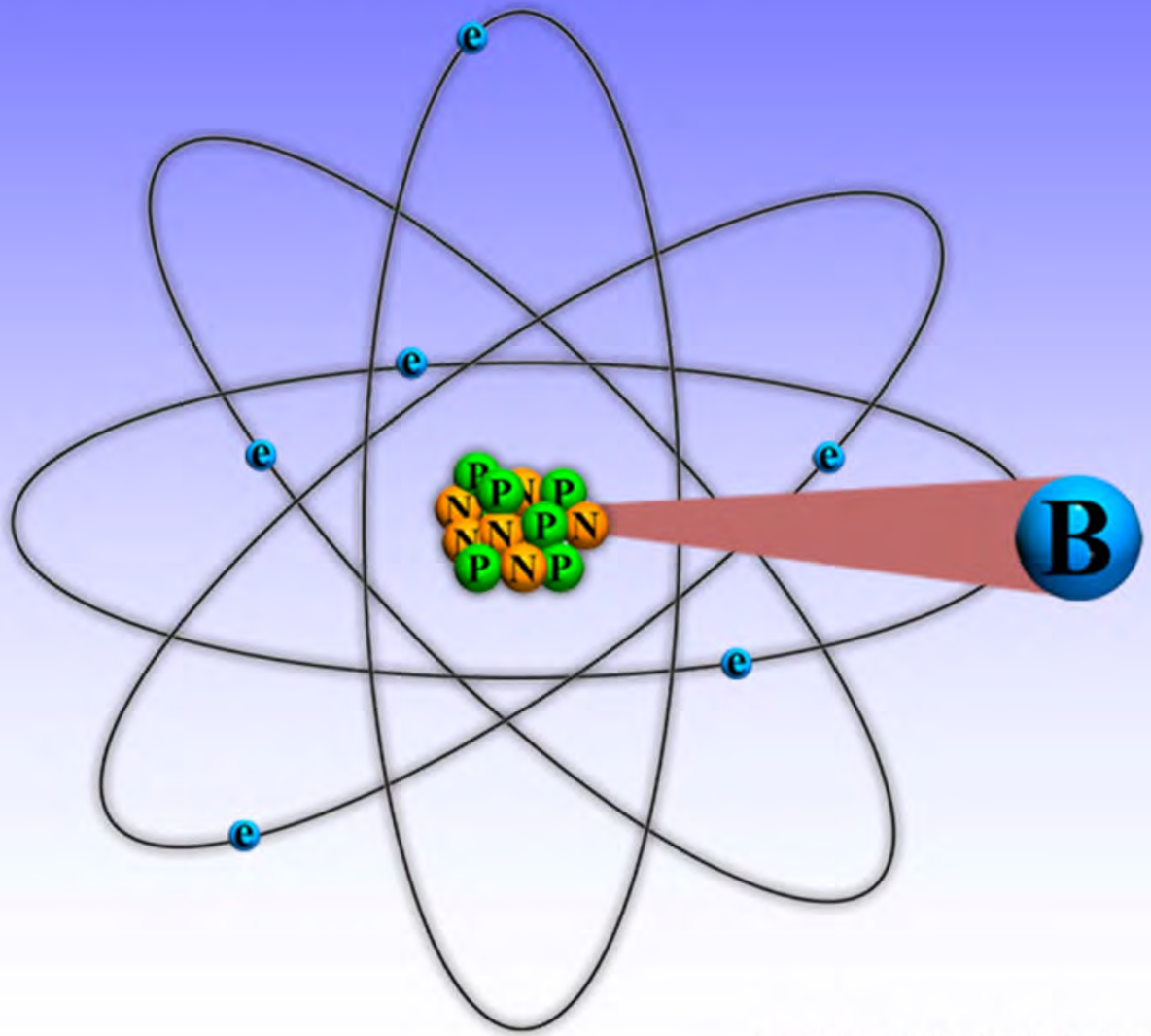
Four Basic Types of Ionizing Radiation

- Alpha
- Beta
- Gamma
- Neutron

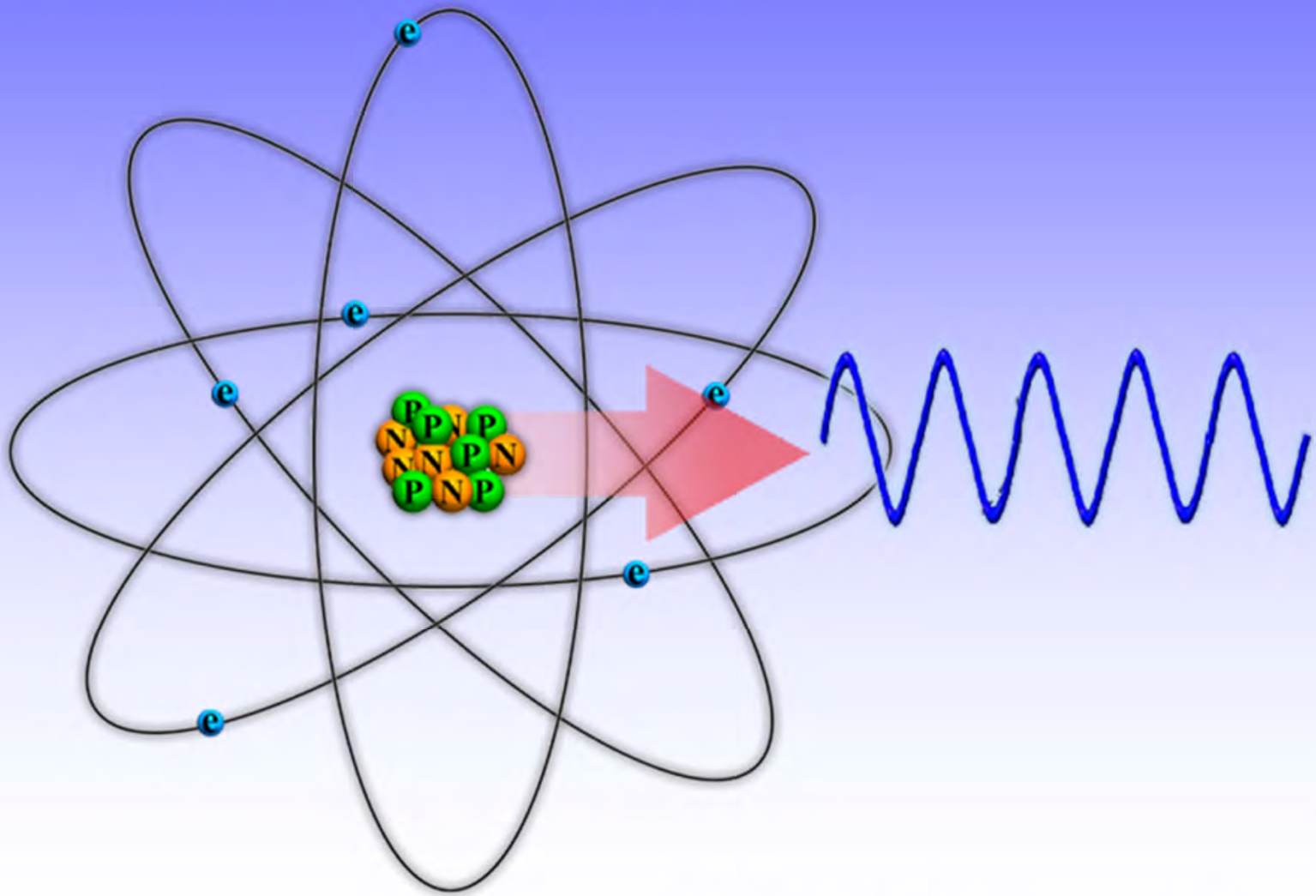
Alpha Radiation



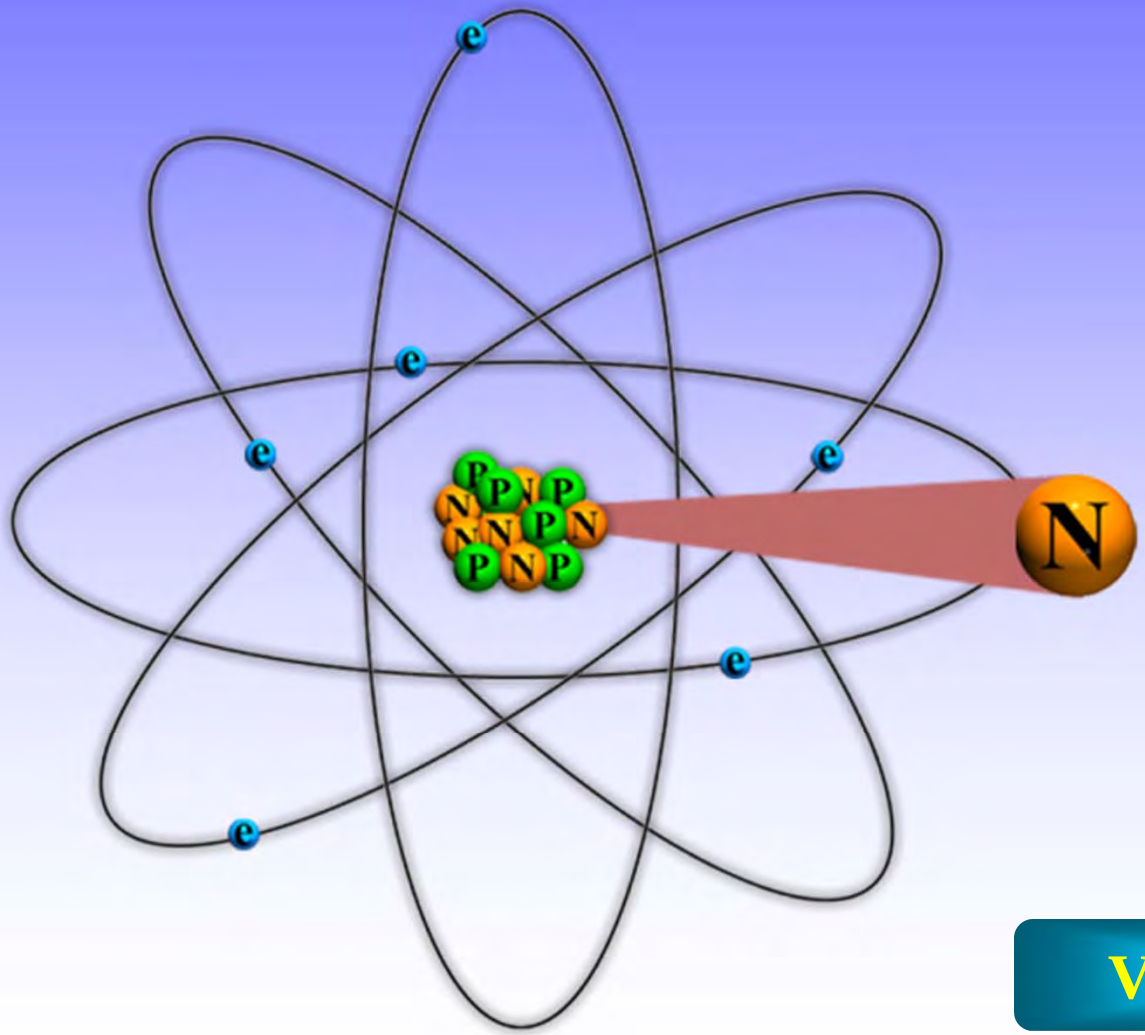
Beta Radiation



Gamma Radiation



Neutron Radiation



View Video

Radioactive Material and Radioactivity

- Radioactive material is any material that spontaneously emits ionizing radiation
- Process of unstable atom emitting radiation is called radioactivity
- When a radioactive atom goes through the process of radioactivity, also called radioactive decay, it changes to another type of atom

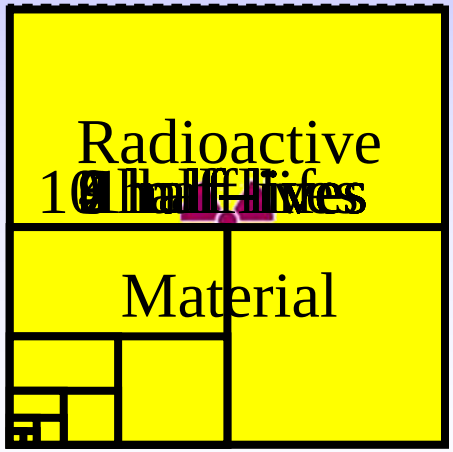
Radioactive Material and Radioactivity

- Radioactive decay is measured in half-lives
- Half-life is the time it takes for ½ of the radioactive atoms present to decay to another form
- Half-life is unique to each radioactive isotope and can vary greatly
- Radioactive pharmaceutical products (called radiopharmaceuticals) typically have half-lives of a few hours or days

Radioactive Material and Radioactivity

- Regardless of the half-life, the radioactivity level of any given amount of radioactive material is constantly decreasing

Some radioactive isotopes and their half-life	
Isotope	**Half-Life**
Nitrogen-16	7 seconds
Technetium-99m	6 hours
Thallium-201	73 hours
Cobalt-60	5 years
Cesium-137	30 years
Americium-241	432 years
Uranium-238	4.5 billion years



Radioactive Contamination

- When radioactive **material** is where it is not wanted (e.g., on the ground, in water, or on you), we refer to it as “contamination”

Radiation Versus Contamination

- Radiation is a type of energy; contamination is material
- Exposure to radiation will not contaminate you
- Radioactive contamination emits radiation

Exposure to Radioactive Material

- At an incident scene, responders may be exposed to radiation
- If the containers are intact, exposure levels should be safe
- Exposure to radiation at controlled levels does not constitute a hazard

Radioactive Contamination Types

- If radioactive material is released, it is possible to become contaminated
- Contamination continues to be an exposure hazard

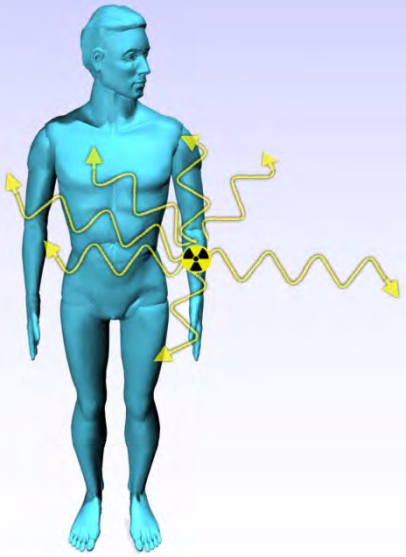
View Video

Radioactive Contamination Types

- Can be External or Internal

External

Secondary contamination



Internal

Can be difficult to remove

Avoid Radioactive Contamination

- Do not:
  - Eat
  - Drink
  - Smoke
  - Chew
- Use PPE while on the scene of an incident involving radioactive material

Radiological Units

- Traditional units of measure and International System of Units (SI) are used in measuring radiation and radioactivity
- For radiation measurement:

	Exposure	Absorbed Dose	Dose Equivalent
Common Units	roentgen (R)	rad	rem
SI Units	coulomb/kilogram (C/kg)	gray (Gy)	sievert (Sv)

Radiological Units

- Radioactivity or the strength of a radioactive source is measured in:
  - Traditional units of curies (Ci)
    - 1 Ci = that quantity of radioactive material in which 37 billion atoms are transformed per second – 3.7×10^{10} disintegrations per second (dps)
  - SI units of becquerel (Bq)
    - 1 Bq = that quantity of radioactive material in which 1 atom is transformed per second – 1 disintegrations per second

Radiological Units

- Because the unit for measuring activity is so small, prefixes are often used

Symbol	Prefix	Prefix Value	Example
p	pico	1 trillionth, or 10^{-12}	pCi = 1 trillionth of a curie
n	nano	1 billionth, or 10^{-9}	nCi = 1 billionth of a curie
μ	micro	1 millionth,or 10^{-6}	μCi = 1 millionth of a curie
m	milli	1 thousandth, or 10^{-3}	mCi = 1 thousandth of a curie
k	kilo	1 thousand, or 10^{3}	kBq = 1 thousand becquerel
M	mega	1 million, or 10^{6}	MBq = 1 million becquerel
G	giga	1 billion, or 10^{9}	GBq = 1 billion becquerel
T	tera	1 trillion, or 10^{12}	TBq = 1 trillion becquerel
P	peta	1 quadrillion, or 10^{15}	PBq = 1 quadrillion becquerel

Summary

Atoms are made up of protons, neutrons, and electrons.

Summary

The four basic types of ionizing radiation are alpha, beta, gamma, and neutron.

Summary

Radioactive material is any material that spontaneously emits ionizing radiation.

Summary

The process of an unstable atom emitting radiation is called radioactivity.

Summary

Radioactive material in an unwanted location is called contamination.

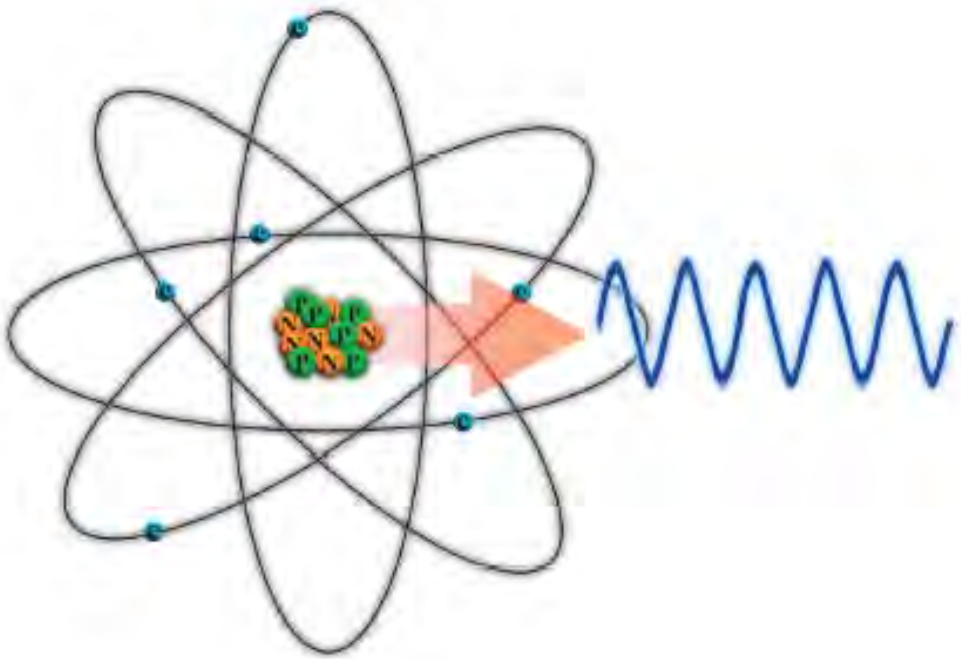
Summary

Radiation can pass through the body; contamination can be deposited in or on the surface of the body.

Summary

The SI unit for measuring radioactivity (activity) is the becquerel.

Radiological Basics Exercise



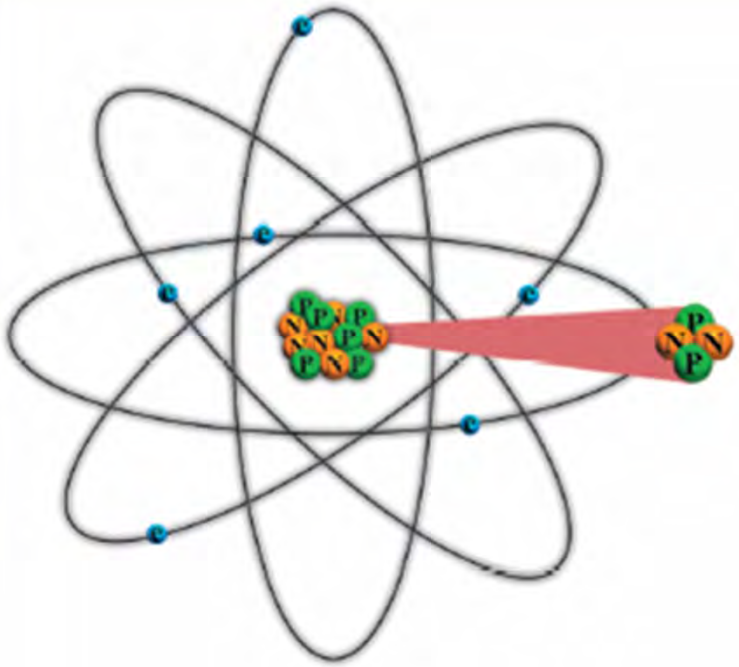
Type of radiation:

- ☐ Alpha
- ☐ Beta
- ☑ Gamma
- ☐ Neutron

Ideal shielding material:

- ☑ Lead
- ☐ Paper
- ☐ Plastic
- ☐ Water

Electromagnetic radiation with no mass or charge



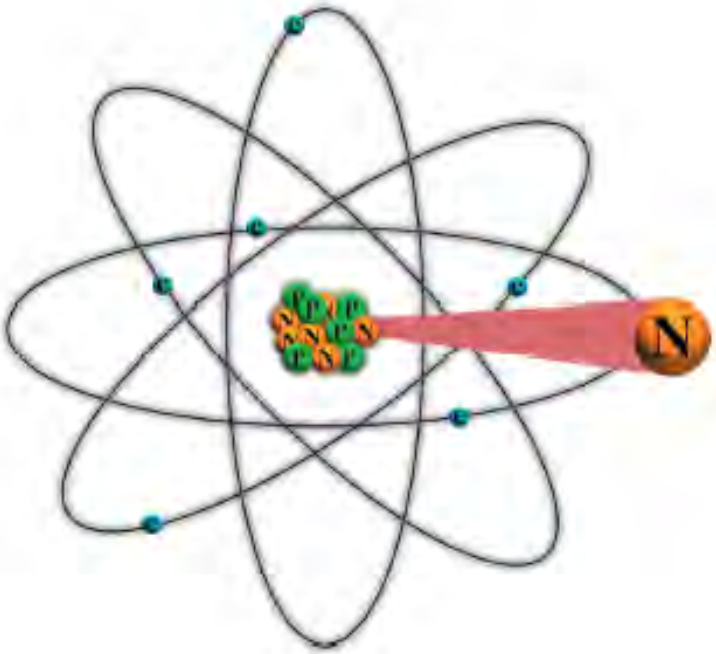
Type of radiation:

- [x] Alpha
- [ ] Beta
- [ ] Gamma
- [ ] Neutron

Ideal shielding material:

- [ ] Lead
- [x] Paper
- [ ] Plastic
- [ ] Water

Made up of 2 protons and 2 neutrons



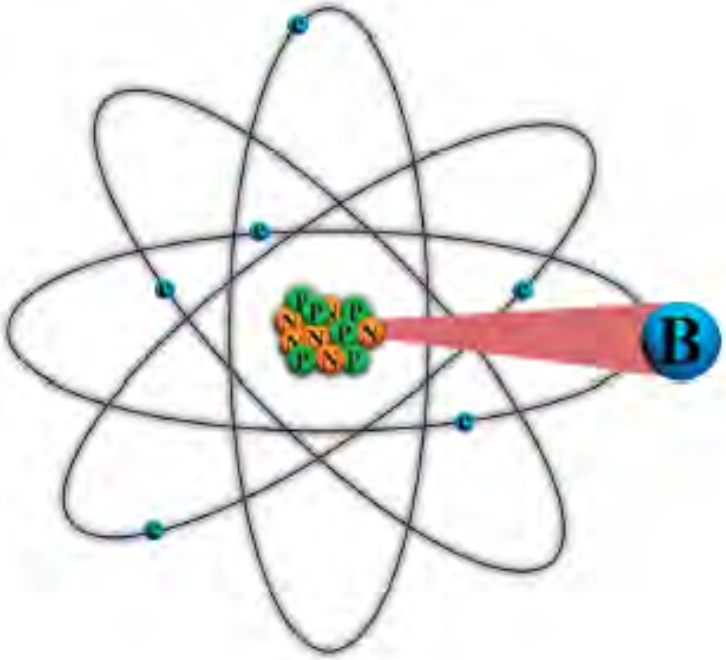
Type of radiation:

- ☐ Alpha
- ☐ Beta
- ☐ Gamma
- ☑ Neutron

Ideal shielding material:

- ☐ Lead
- ☐ Paper
- ☐ Plastic
- ☑ Water

Mass of 1, neutral charge



Type of radiation:

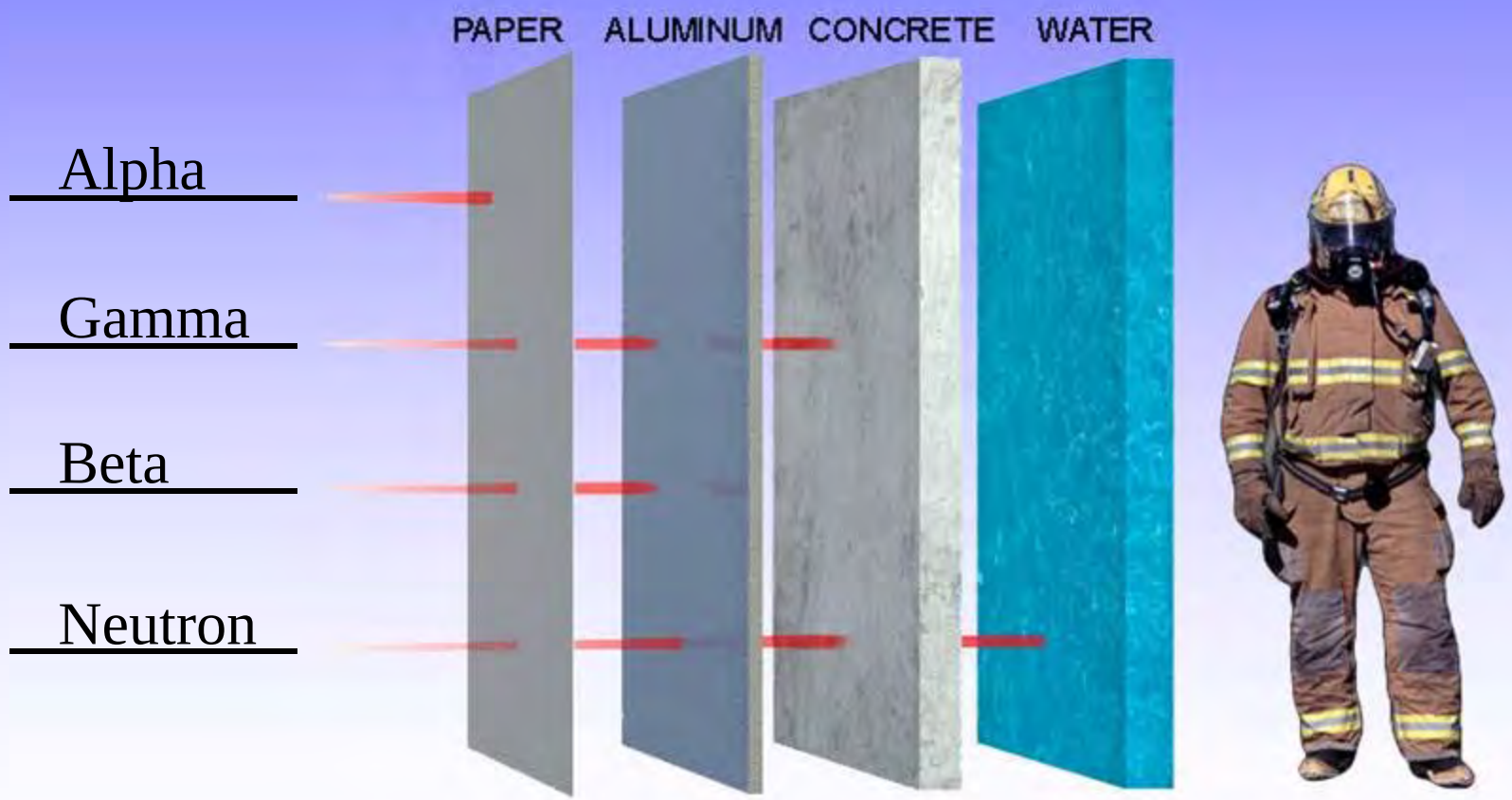
- ☐ Alpha
- ☑ Beta
- ☐ Gamma
- ☐ Neutron

Ideal shielding material:

- ☐ Lead
- ☐ Paper
- ☑ Plastic
- ☐ Water

Negative charge

DEPARTMENT OF ENERGY



In the photo at right, what is the radiological hazard?

- ☐ Radiation
- ☐ Contamination
- ☑ Both

Questions

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DEPARTMENT OF ENERGY

TEPP/MERRTT

Radioactive Material Shipping Packages

Module Objectives

- Identify typical packages used to transport radioactive material.
- List examples of radioactive material that are shipped in various shipping packages.
- Identify the risks associated with the various shipping packages.
- Identify the testing methods for Type A and B Packages.
- Identify some commonly transported sources of radioactive material.

Transporting Radioactive Material

- Radioactive material is a vital part of our modern society
- It is used in hospitals, factories, laboratories, and our homes
- Radioactive material is transported according to very strict federal regulations designed to protect the public and the environment
- Radioactive material is generally shipped in its most stable form

Hazard Evaluation

- Two part philosophy of radioactive material transport is that:
  - Safety is primarily focused on the package
  - Package integrity is directly related to the hazard of the material it contains

Radioactive Material Packaging

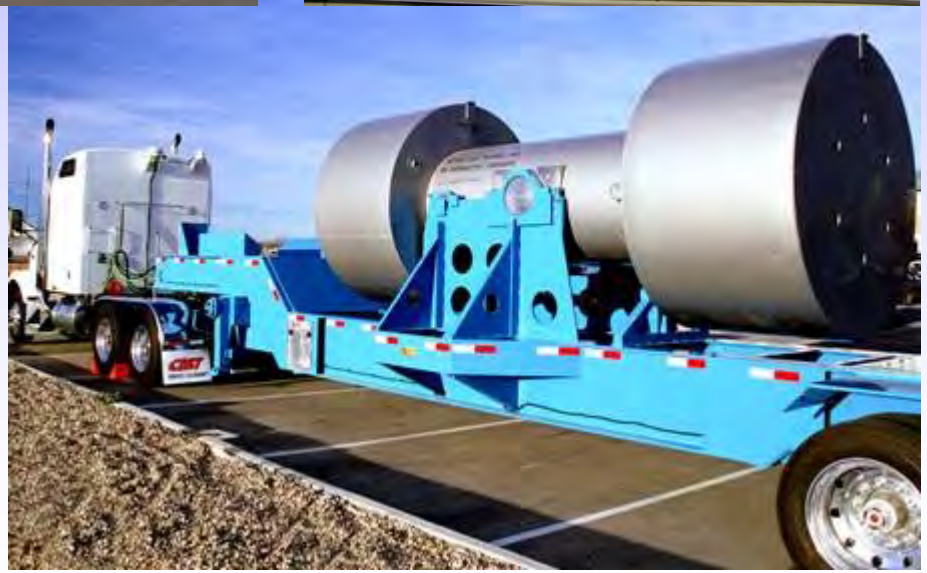
- Radioactive material, like other commodities, is transported every day in the U.S.
- Four Package Types are used:
  - Excepted Packaging
  - Industrial Packaging
  - Type A Packaging
  - Type B Packaging

Excepted Packaging

Industrial Packaging

Type A Packaging

Type B Packaging



Risks Associated with Shipping Packages

- Package type can indicate level of risk
- Excepted, Industrial, & Type A Packages contain non life-endangering quantities
- Type B Packages are built to withstand severe accidents
- No injuries or death resulting from the release of radioactive material in a transportation incident

Package Testing

- Two agencies regulate testing:
  - Department of Transportation (DOT)
  - Nuclear Regulatory Commission (NRC)
- DOT and NRC regulations are based on international regulations issued by the International Atomic Energy Agency (IAEA)
- Package designs are tested using computer simulations, scale model testing, and/or full-scale testing

Type A Tests

Water spray for 1 hour to simulate rainfall of 2 inches per hour.

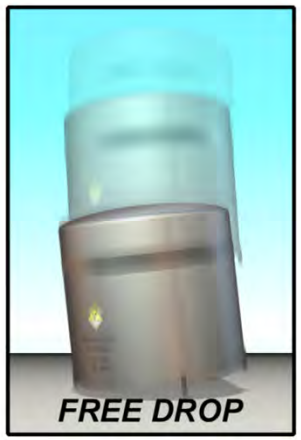
Free drop test onto a flat, hard surface. This test is conducted only on packages weighing 11,000 pounds or less.

Stacking test of at least 5 times the weight of the package. This test is conducted for at least 24 hours.

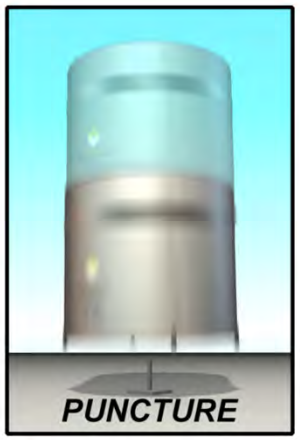
Penetration test by dropping a 13-pound, 1.25-inch diameter bar vertically onto the package from a height of 3.3 feet.

Package Mass	Free Drop Distance
< Mass 11,000 lbs.	4 feet
11,000 to 22,000 lbs.	3 feet
22,000 to 33,000 lbs.	2 feet
> 33,000 lbs.	1 feet

Type B Tests



A 30-foot free drop onto a flat, essentially unyielding surface so that the package's weakest point is struck



A 40-inch free drop onto a 6-inch diameter steel rod at least 8 inches long, striking the package at its most vulnerable spot.

Exposure of the entire package to 1475°F for 30 minutes.

Immersion of the package under 50 feet of water for at least 8 hours.

View Video

Common Sources

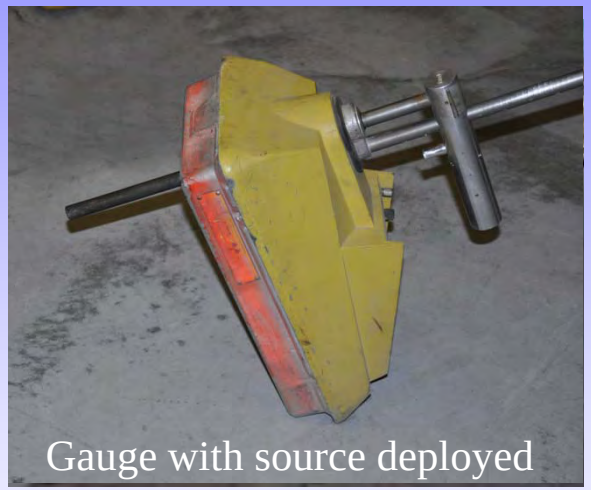
- Consumer products

Common Sources

- Radiopharmaceuticals

Common Sources

- Industrial sources


Gauge with source deployed

Common Sources

- Nuclear fuels
- Radioactive waste

Summary

This type of packaging, along with its radioactive contents, must meet standard testing requirements designed to ensure that the package retains its containment integrity and shielding under normal transport conditions.

a. Type A packaging
b. Type B packaging
c. Industrial packaging
d. Excepted packaging

Summary

Type B packaging must be able to withstand a series of tests that simulate severe or “worst case” accident conditions.

Summary

Radiopharmaceuticals are typically shipped in Type A packagings and spent nuclear fuel is typically shipped in Type B packagings.

Summary

Which of the following statements best applies to the risks associated with material shipped in Type A Packages?

a. Type A Packages are used to transport very high levels of radioactive material
b. Type A Packages are used to transport exempt quantities of radioactive material
c. Type A Packages are built to withstand the most severe accident conditions
d. Type A Packages contain non life-endangering amounts of radioactive material

Summary

One commonly transported source of radioactive material is:

a. Radio waves

b. Visible light

c. Radiopharmaceuticals

d. Microwaves

Questions

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DEPARTMENT OF ENERGY

TEPP/MERRTT

Hazard Recognition

Module Objectives

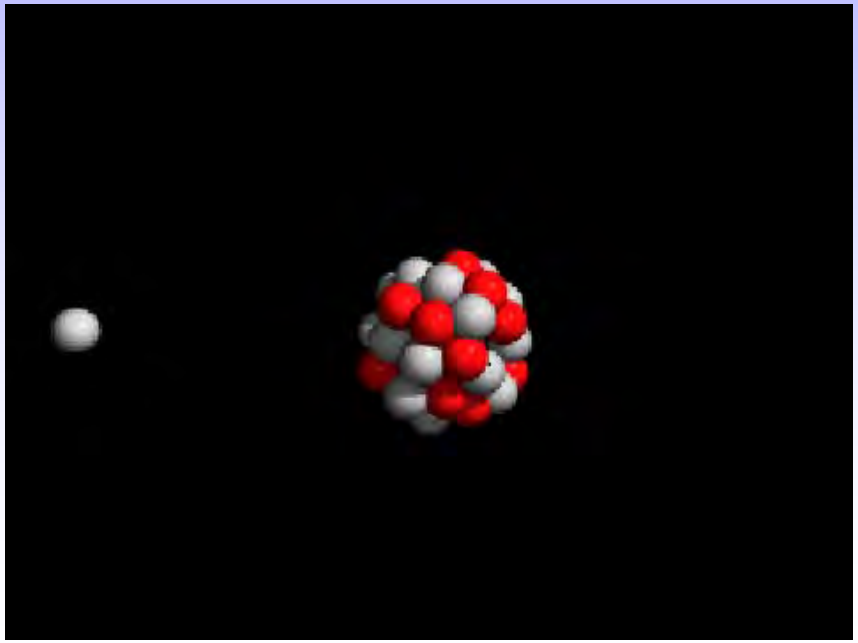
- Identify terminology and acronyms associated with shipments of radioactive material.
- Identify markings on packages used to transport radioactive material.
- Identify labels on packages used to indicate the presence of radioactive material.

Module Objectives

- Identify placards used on radioactive material shipments.
- Identify the information contained on shipping papers used for transporting radioactive material.
- Identify commonly used Proper Shipping Names for radioactive material.

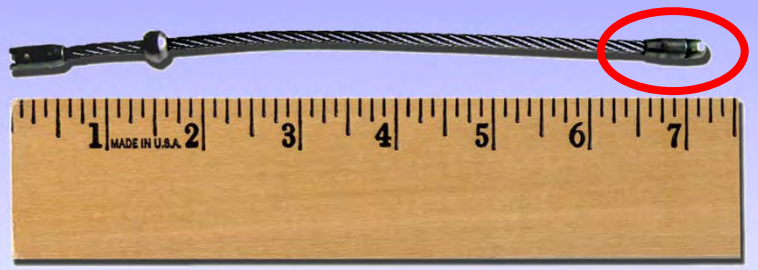
Terminology - Shipments

- Fissile Material
  - Material whose atoms are capable of nuclear fission
  - Includes Pu-239, Pu-241, U-233, and U-235



Terminology - Shipments

- Special Form Radioactive Material
  - Single solid piece or sealed capsule
  - Non-dispersible
  - Minimal risk of contamination
  - May pose significant radiation hazard



Terminology - Shipments

- Low Specific Activity (LSA)
  - Limited amount of radioactivity in relationship to total amount of material present

- Surface Contaminated Objects (SCO)
  - Object itself is not radioactive but has contamination deposited on its surfaces

Terminology - Shipments

- Transport Index (TI)
  - Number assigned by shipper to provide control over the total number of packages in a shipment
  - Determined by taking maximum radiation level at one meter from the surface of the package

Safe Packaging

- Prior to transport, regulations require that radioactive material is:
  - Properly packaged
  - Sealed
  - Surveyed for external radiation and contamination
- Packages are then marked and labeled as required

Package Markings

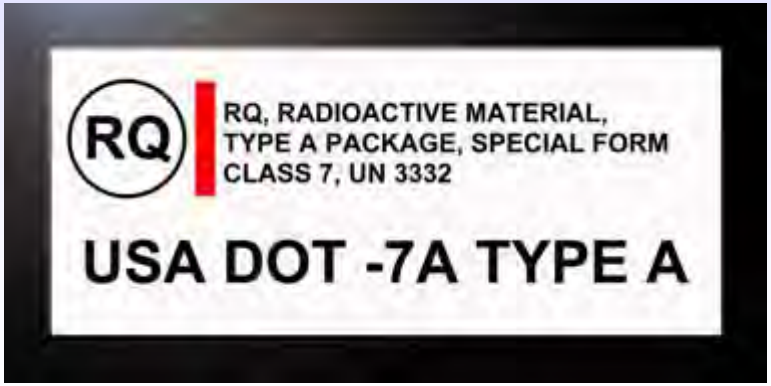
- Designed to inform transportation workers and emergency response personnel about a package's radioactive contents
- Package markings will be clearly marked on the outside of the package

Package Markings

- Some of the markings you may see include:
  - Proper Shipping Name and UN ID number
  - “Radioactive LSA” or “Radioactive SCO”
  - "Type IP-1, IP-2, or IP-3,” “Type A” or "Type B”

Package Markings

- Some of the markings you may see include (continued):
  - Gross weight (if greater than 110 lbs.)
  - Orientation arrows – good indication for liquids
  - “RQ” if the package contains a reportable quantity of material



Radiation-Warning Labels

- Designed to inform personnel of package's radioactive contents
- Not all packages require warning labels
- When required, radiation-warning labels will:
  - Appear on opposite sides of package
  - Contain specific information on package contents and activity of radioactive material

Radiation-Warning Labels

- Labels are applied based on external radiation level or in some cases the package contents
- The following labels may be used on packages of radioactive material:
  - Radioactive White-I
  - Radioactive Yellow-II
  - Radioactive Yellow-III
  - Fissile
  - EMPTY

Radioactive White-I

- Maximum of 0.5 mrem/hour on contact

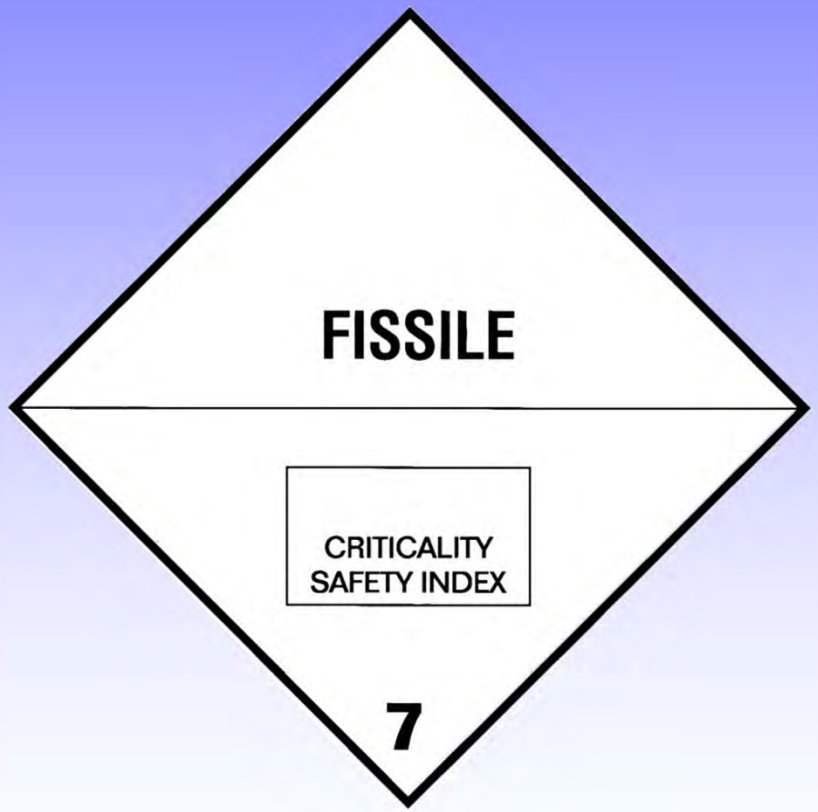
Radioactive Yellow-II

- >0.5 to 50 mrem/hour on contact
- Maximum TI of 1

Radioactive Yellow-III

- >50 to 200 mrem/hour on contact
- Maximum TI of 10

Fissile Label



- Applied to fissile material packages
- Will appear next to the Radioactive I, II, or III label
- CSI used by shipper to control total number of fissile packages on a conveyance

EMPTY Label

- Package emptied of contents as far as practical
- May still have internal contamination
- <0.5 mrem/hour on contact

- Excepted from shipping paper and marking requirements (except UN ID number)

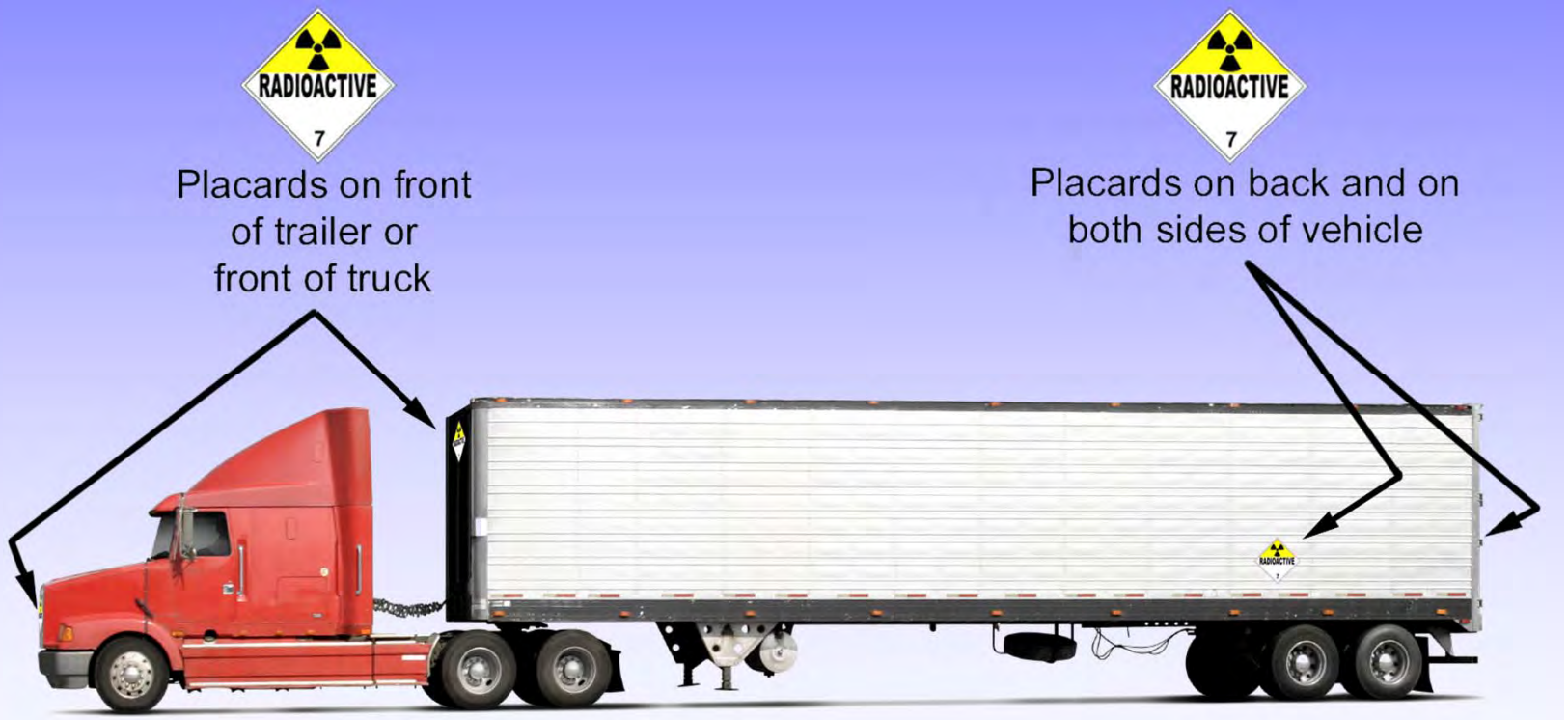
IATA Label

- International Air Transport Association (IATA) regulations label
- Label is required when shipping radioactive material in excepted packages by air
- Dose rates on the surface of the shipping container must be less than 0.5 mrem/hr

Placarding Requirements

- Not all shipments of radioactive material require vehicle placarding
- Vehicle placarding required for:
  - Packages with the Yellow-III label
  - Exclusive Use LSA/SCO shipments in excepted packages
  - Highway Route Controlled Quantities of material
- When required, placards must appear on all four sides of transport vehicle

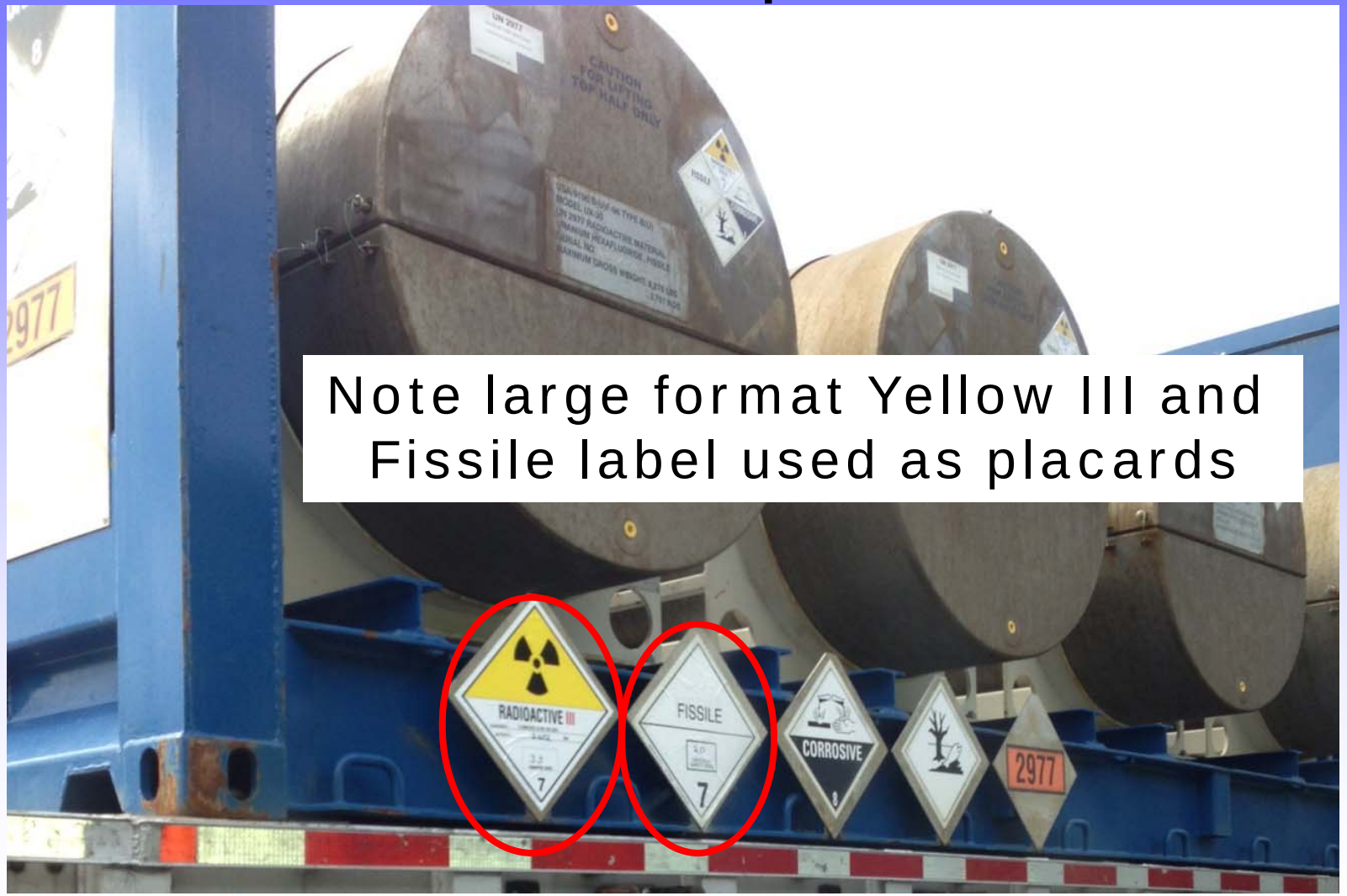
Placard Placement



Placard Types

- There are two type of placards used for radioactive material shipments

International Shipments



Note large format Yellow III and Fissile label used as placards

UN Identification Number

- UN ID number may appear close to placard
- Orange sign with black lettering or white diamond similar in size to placard

Secondary Hazards

- Look for secondary hazards at scene

Secondary Hazards

- Two possible sources:
  - Other hazardous material being transported (look for additional labels or placards)
  - Other external factors (spilled fuel, downed power lines, etc.)
- Some radioactive material may have other hazardous properties (e.g., corrosive)

Shipping Papers

- Driver of vehicle, if available, can be of assistance in retrieving shipping papers
- Shipping papers are a valuable source of information about material being transported
  - Contain name, address, and phone number of shipper
  - Staffed contact number for emergency response information

Shipping Papers

- Shipping papers for radioactive material will list:
  - Identity of material
  - Physical and chemical form of material
  - Activity
  - Category of label (e.g., Yellow-II)
  - Transport index
  - Fissile controls information (if applicable)

Shipping Papers

- Shipping papers may be located in:
  - The cab of the motor vehicle (bill of lading)
  - The possession of a train crew member (consist/waybill)
  - A holder on the bridge of a vessel (dangerous cargo manifest)
  - An aircraft pilot's possession (airbill)

Handling Potentially Contaminated Papers

- Separate pages and remove loose material
- Bag each page
- Place into a second bag
- Control documents until surveyed
- Make photocopies if possible

Proper Shipping Names

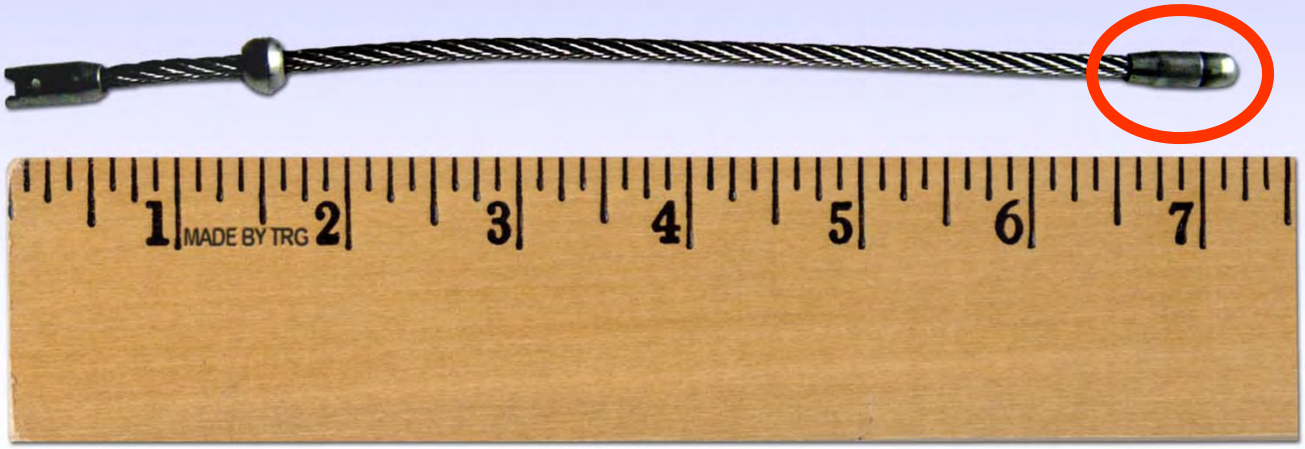
- Proper Shipping Name for material being transported can be located:
  - On shipping papers
  - On package markings
  - In blue pages of the Emergency Response Guidebook (ERG)

Name of Material	Guide No.	ID No.
Radioactive material, Type A package non-special form, non fissile or fissile-excepted	**163**	2915

package, fissile		
Radioactive material, Type B(U) package non fissile or fissile-excepted	163	2916
Radioactive material, Type C package	163	3323
Radioactive material, Type C package, fissile	165	3330
Radioactive material, Uranium hexafluoride	166	2978
Radioactive material, Uranium hexafluoride, fissile	166	2977
Rags, oily	133	1856
Rare gases and Nitrogen mixture	121	1981
Rare gases and Nitrogen mixture, compressed	121	1981
Rare gases and Oxygen mixture	121	1980
Rare gases and Oxygen mixture, compressed	121	1980
Rare gases mixture	121	1979
Rare gases mixture, compressed	121	1979
Receptacles, small, containing gas	115	2037
Refrigerant gas R-23 azeotropic mixture with 60% Refrigerant gas R-13		
Refrigerant gas R-13B1	126	1009
Refrigerant gas R-14	126	1982
Refrigerant gas R-14, compressed	126	1982
Refrigerant gas R-21	126	1029
Refrigerant gas R-22	126	1018
Refrigerant gas R-23	126	1984
Refrigerant gas R-23 and Refrigerant gas R-13 azeotropic mixture with 60% Refrigerant gas R-13	126	2599
Refrigerant gas R-32	115	3252
Refrigerant gas R-40	115	1063
Refrigerant gas R-41	115	2454
Refrigerant gas R-114	126	1958
Refrigerant gas R-115	126	1020
Refrigerant gas R-116	126	2193
Refrigerant gas R-116, compressed	126	2193
Refrigerant gas R-124	126	1021

Summary

Radioactive material which is either a single solid piece or a sealed capsule that can be opened only by destroying the capsule is called special form radioactive material.

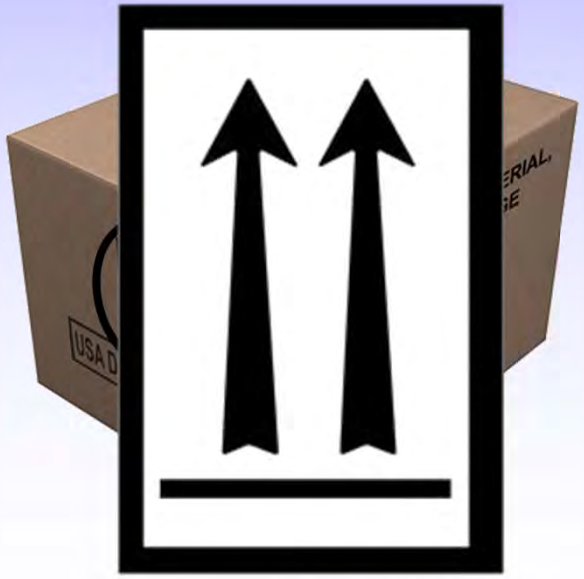


Summary

Package markings and labels are designed to inform transportation workers and emergency response personnel about a package's radioactive contents.

Summary

Orientation arrows on the outside of a package are a good indication that the package contains liquids.



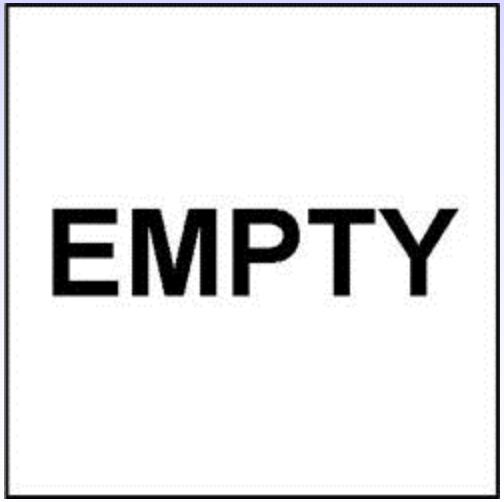
Summary

All packages of radioactive material require radiation-warning labels. True/False

False

Summary

The EMPTY label is applied to packages that, after being emptied of their contents, still may contain a regulated amount of internal contamination.



Summary

Placarding is required on all shipments of radioactive material. True/False.

False

Summary

The standard placard for radioactive material is yellow on top and white on the bottom, with black lettering and a black radiation symbol. In the bottom corner, the DOT hazard class number 7 denotes radioactive material.

Summary

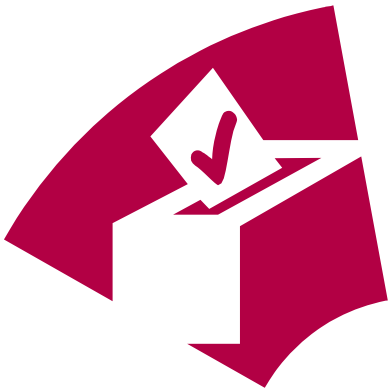
Which of the following can be found on the shipping papers for radioactive material?

a. Category of label applied to each package
b. Emergency contact telephone number
c. Transport Index for each package
d. All of the above

Questions

?

FY 2016 Election Time



Elections of the FY 2016 NSSAB Chair and Vice-Chair will take place at the September Full Board meeting. A response is needed from all. Please contact the NSSAB office by August 30 and advise if you would like to be considered for either position.

You may also nominate someone who you feel would be a valuable chair/vice-chair. Anyone nominated will be contacted to ensure they would accept the nomination. A list of interested members will be provided to the Full Board and the officers will be elected by ballot at the September Full Board meeting.

What are the Chair responsibilities?

- Serves as the Chair for 12 months (October 1 – September 30)
- Participates in bi-monthly EM SSAB Chairs conference calls
- Assists in the development of draft meeting agendas
- Leads full board meetings and ensures all members have the opportunity to participate
- Certifies to the accuracy of all minutes within 45 days
- Signs recommendations that the Board has passed
- Serves as spokesperson for the NSSAB between regular meetings of the Board
- Attends national EM SSAB meetings and/or workshops semi-annually
- Attends quarterly meetings with EM Management
- Adheres to all standard NSSAB member responsibilities (i.e. attendance requirements, etc.)

What are the Vice-Chair responsibilities?

- Serves as the Vice-Chair for 12 months (October 1 – September 30)
- Participates in bi-monthly EM SSAB Chairs conference calls
- Assists in the development of draft meeting agendas
- Acts as the NSSAB chair in the absence of the elected chair
- Attends national EM SSAB meetings and/or workshops semi-annually
- Attends quarterly meetings with EM Management
- Adheres to all standard NSSAB member responsibilities (i.e. attendance requirements, etc.)

Please contact the NSSAB office by August 30 and advise if you are willing to be considered for the FY 2016 Chair and/or Vice-Chair positions.

Nevada Site Specific Advisory Board

January 21, 2015

Mr. Robert F. Boehlecke
Environmental Management Operations Manager
U.S. Department of Energy, Nevada Field Office
P. O. Box 98518
Las Vegas, NV 89193-8518

SUBJECT: Recommendation for Potential New Resource Conservation and Recovery Act Part B Permitted Mixed Waste Disposal Unit (Work Plan Item #9)

Dear Mr. Boehlecke,

The Nevada Site Specific Advisory Board (NSSAB) was asked to provide a recommendation, from a community perspective, to the U.S. Department of Energy (DOE) on a path forward for mixed waste disposal at the Nevada National Security Site (NNSS).

After a briefing and tour of the Area 5 Radioactive Waste Management Complex (RWMC) and a briefing and Board discussion during the November 19, 2014 Full Board meeting, the NSSAB perceives a need for additional space for mixed low-level waste (MLLW) and is in support of continued Environmental Management activities for the disposal of DOE-generated MLLW at the NNSS.

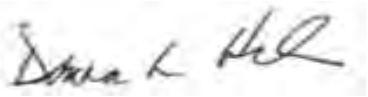
In addition, the NSSAB, from a community perspective, makes the following recommendations:

- Research the feasibility of increasing the capacity of the proposed MLLW Cell 25 based on waste projections to realize potential cost savings over the life of the cell
- Discuss MLLW transportation procedures with stakeholders as DOE moves forward with the proposed MLLW Cell 25
- Define LLW/MLLW in understandable terms for the public on printed materials at events, such as open houses
- Consider designing a display box that include typical mock MLLW items for viewing at public events

232 Energy Way, M/S 505, North Las Vegas, NV 89030
Phone 702-630-0522 ◇ Fax: 702-295-5300
E-mail: NSSAB@nnsa.doe.gov ◇ Website Home Page: http://www.nv.energy.gov/NSSAB

The NSSAB appreciates the opportunity to tour the Area 5 RWMC and to provide this recommendation to the DOE.

Sincerely,



Donna L. Hruska, Chair

cc: K. G. Ellis, DOE/HQ (EM-3.2)
M. R. Hudson, DOE/HQ (EM-3.2)
E. B. Schmitt, DOE/HQ (EM-3.2)
C. G. Lockwood, NFO
K. M. Small, NFO
K. K. Snyder, NFO
S. A. Wade, NFO
B. K. Ulmer, N-I
NSSAB Members and Liaisons

Department of Energy
National Nuclear Security Administration
Nevada Field Office
P.O. Box 98518
Las Vegas, NV 89193-8518

JUL 6 2015

Donna L. Hruska, Chair
Nevada Site Specific Advisory Board
232 Energy Way, M/S 505
North Las Vegas, NV 89030

RECOMMENDATION FOR POTENTIAL NEW RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART B PERMITTED MIXED WASTE DISPOSAL UNIT (WORK PLAN ITEM #9)

The Nevada Field Office (NFO) greatly appreciates the Nevada Site Specific Advisory Board's (NSSAB) support of continued management and disposal of mixed low-level waste (MLLW) at the Nevada National Security Site (NNSS).

There have been some changes in the NFO's plans regarding constructing a new MLLW disposal cell since the NSSAB's Full Board meeting when this topic was discussed. Previously, the NFO planned to submit two applications related to MLLW to the State of Nevada. The first permit application was for renewing the soon-to-expire RCRA MLLW disposal cell and storage units. The second permit application was for constructing a new RCRA MLLW disposal cell. The NFO decided to only submit an application for the renewal permit and that action was completed on May 28, 2015. The State of Nevada Division of Environmental Protection will post a public notice announcing the Department's request for a permit renewal, and they will accept public comments for 45 days. The previously planned permit application to construct a new RCRA MLLW disposal cell has been postponed until a later date. The NFO will continue to keep the NSSAB apprised of status changes on MLLW related activities.

Below are the Board's recommendations and the NFO's responses:

- **NSSAB Recommendation**: Research the feasibility of increasing the capacity of the proposed MLLW Cell 25 based on waste projections to realize potential cost savings over the life of the cell.

  NFO Response: The Department of Energy (DOE) is continuously evaluating the MLLW cells capacity and the projected waste volumes that generators provide for planning purposes. In addition, budget constraints and approval processes also influence the size and design of disposal cells. Based upon all these considerations, if and/or when the NFO submits an application to the State of Nevada for constructing a new MLLW disposal cell, we will attempt to construct the optimum-sized mixed waste disposal cell.

- **NSSAB Recommendation**: Discuss MLLW transportation procedures with stakeholders as DOE moves forward with the proposed MLLW Cell 25.

  NFO Response: Transportation procedures for MLLW do not differ from transportation of low-level waste. DOE has ongoing discussions with stakeholders related to waste transportation through a variety of channels, including the NSSAB. DOE commits to continuing this discuss with stakeholders and communities along transportation routes in Nevada.

- **NSSAB Recommendation**: Define LLW/MLLW in understandable terms for the public on printed materials at events, such as open houses.

  NFO Response: The definition of LLW/MLLW has been outlined in existing laws and regulations. The NFO will continue to look for language to communicate these definitions in terms that are easily understandable to the public.

- **NSSAB Recommendation:** Consider designing a display box that includes typical mock MLLW items for viewing at public events.

  NFO Response: The NFO has a container that shows example of typical waste that is accepted at the NNSS. The NFO will strive to incorporate it in more public events and locations.

Again, thank you for your time and dedication to improving Environmental Management activities at the NNSS. Should you have any further questions, please contact Kelly Snyder at (702) 295-2836.

Robert F. Boehlecke, Manager
Environmental Management Operations

EMOS:11389.KKS

cc via e-mail:
D. A. Borak, DOE/HQ (EM-3.2)
M. R. Hudson, DOE/HQ (EM-3.2)
E. B. Schmitt, DOE/HQ (EM-3.2)
B. K. Ulmer, Navarro
NSSAB Members and Liaisons
C. G. Lockwood, NFO
K. M. Small, NFO
K. K. Snyder, NFO
S. A. Wade, NFO
NFO Read File